February 26, 2026

Santa Margarita Basin
Water Year 2025 Annual Report

Prepared for:

Santa Margarita Groundwater Agency

Prepared by:

Montgomery & Associates

1970 Broadway, Suite 225, Oakland, California

and

Regional Water Management Foundation

7807 Soquel Drive, Aptos, California

Contents

Tables

Figures

Appendices

ACRONYMS & ABBREVIATIONS

AF ....acre-feet
AF/yr.........................acre-feet per year
amsl...........................above mean sea level
Annual Report...........GSP Annual Report
ASR...........................Aquifer Storage and Recovery
Basin ....Santa Margarita Groundwater Basin
Basin Model..............GSP Groundwater Basin Model
County.......................County of Santa Cruz
DWR ....California Department of Water Resources
GDE ....groundwater dependent ecosystems
GPY...........................gallons per year
GSA...........................Groundwater Sustainability Agency
GSP ....Groundwater Sustainability Plan
JPA............................Joint Powers Agreement
LID............................low impact development
MCL..........................maximum contaminant level
mg/L..........................milligrams per liter
MHA ....Mount Hermon Association
MO ....measurable objective
MT.............................minimum threshold
RMPs.........................representative monitoring point(s)
SCWD ....City of Santa Cruz Water Department
SLVWD ....San Lorenzo Valley Water District
SGMA ....Sustainable Groundwater Management Act
SMC ....sustainable management criteria
SMGWA ....Santa Margarita Groundwater Agency
SVWD.......................Scotts Valley Water District
TDS ....total dissolved solids
µg/L...........................micrograms per Liter
USGS ....United States Geological Survey
WY ....Water Year

EXECUTIVE SUMMARY

Introduction

This fifth Annual Report since adoption of the Santa Margarita Groundwater Basin (Basin) Groundwater Sustainability Plan (GSP) covers the 2025 Water Year (WY2025), from October 1, 2024, through September 30, 2025. As shown on Figure ES-1, the Basin covers an area of 34.8 square miles (22,249 acres) in central Santa Cruz County. The Santa Margarita Groundwater Agency (SMGWA) is the sole groundwater sustainability agency (GSA) for the Basin. It was formed through a Joint Powers Agreement (JPA) between Scotts Valley Water District (SVWD), San Lorenzo Valley Water District (SLVWD), and the County of Santa Cruz (County). Figure ES-1 shows the jurisdictional extent of member agencies that comprise SMGWA in relation to the Basin boundary. The Department of Water Resources (DWR) approved the SMGWA GSP during WY2023 on April 27, 2023.

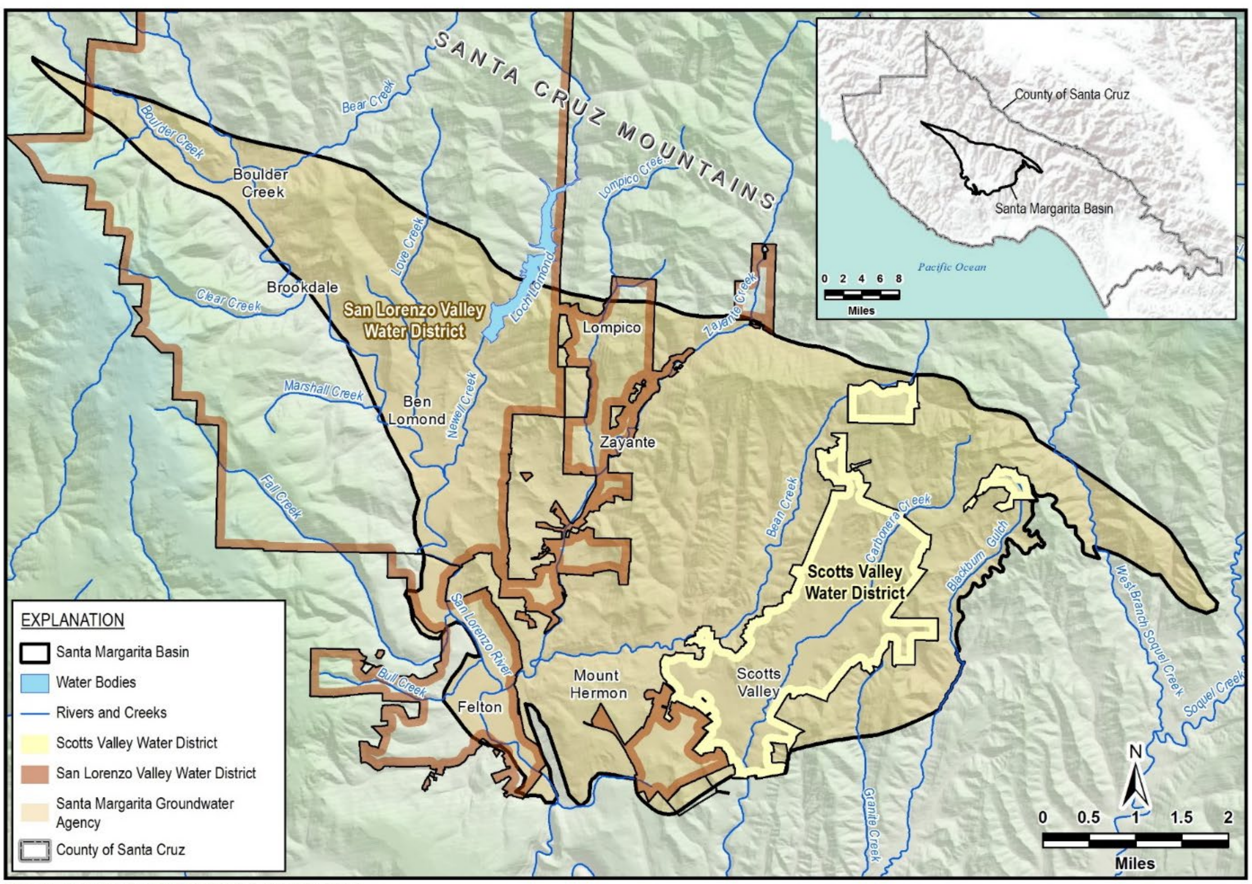


Figure ES-1. Basin and Member Agency Jurisdictional Boundaries

Water Year Conditions and Water Use

WY2025 was drier than average as measured by precipitation and surface water flow in the Basin. However, less water continues to be used in the Basin compared to peak water use in the early 2000s. Reduced water use is achieved through concerted efforts to improve efficiency, promote conjunctive use, and enhance water reuse and recharge. However, because it was drier than average, groundwater inflow was less than outflow and extraction, and there was a net loss of approximately 1,640 acre-feet (AF) of groundwater in storage from the Basin's aquifers. Key information related to WY2025 conditions and use are shown in Table ES-1 below.

Table ES-1. Summary of 30-Year Average and WY2025 Hydrologic Conditions

Hydrologic Conditions Component	30-Year Average	WY2025
Precipitation at Boulder Creek	50.1 inches	34.7 inches
Precipitation at Scotts Valley	41.1 inches	24.5 inches
Surface Water Flow at Big Trees Gage	99,800 AF/yr	58,000 AF
Groundwater Use	3,540 AF/yr	2,383 AF
Surface Water Use	1,135 AF/yr	1,155 AF
Change in Groundwater in Storage	-500 AF/yr	-1,640 AF

AF/yr = acre-feet per year
AF = acre-feet

The total volume of groundwater extracted in WY2025 was 2,383 AF, which is 35 AF more than WY2024, the lowest water use year on record since WY1985. Most groundwater extraction in the Basin is for municipal supplies by SLVWD, SVWD, and Mount Hermon Association (MHA). In WY2025, about 80% of groundwater extracted from the Basin was by these water providers. SVWD extracted 1,128 AF (47%), SLVWD extracted 613 AF (26%), and MHA extracted 167 AF (7%). Remaining estimated groundwater use included: private domestic wells extracted 234 AF; (10%); non-domestic private wells extracted 122 AF (5%); small water systems extracted 88 AF (4%); and Quail Hollow Quarry extracted 32 AF (1%).

In WY2025, surface water was used to recharge groundwater through both in-lieu and direct methods. SLVWD shifted its operations to preferentially use surface water in lieu of groundwater. An estimated 283 AF of surface water was used for in-lieu recharge based on shifts in water operations from long-term averages and intra-district transfers of surface water. SVWD and private developments captured stormwater and recharged groundwater at low-impact development (LID) sites in Scotts Valley. In WY2025, about 24 AF of LID recharge was measured.

Progress Toward Implementing the GSP

The Basin GSP identified existing and planned projects that will result in long-term sustainability. Achievements in WY2025 on existing projects are summarized in Table ES-2 below.

Table ES-2. Summary of Existing Projects and Management Actions

Project	Description
SVWD Water Efficiency Rebates	Issued 8 rebates for turf replacement resulting in an estimated 0.42 AF/yr (137,054 gallons per year (GPY)) savings, and additional 9 rebates for toilet and smart irrigation controller replacements saving an additional 0.02 AF/yr (7,118 GPY) for a total of 0.44 AF/yr (144,172 GPY)
SLVWD Water Efficiency Rebates	Issued 9 clothes washer rebates, 16 toilet rebates, and 2 irrigation controllers, resulting in an estimated savings of 0.64 AF/yr (or 208,545 GPY)
SVWD Low Impact Development (LID)	Captured and recharged 23.8 AF of stormwater at 3 LID facilities in Scotts Valley
SVWD Recycled Water	Distributed 169 AF of recycled water to non-potable water users in Scotts Valley
SLVWD Conjunctive Use	Used more surface water to reduce groundwater extraction in the SLVWD System resulting in an estimated 283 AF of in-lieu groundwater recharge

Progress was made in WY2025 on planned projects. SLVWD continued its efforts to expand conjunctive use operations within the district's boundaries, including preparation of an Environmental Impact Report to support the conjunctive use strategies. That will continue in WY2026. The conjunctive use study includes SLVWD assessing the feasibility for the best use of its 313 AF per year (AF/yr) allocation of surface water stored in Loch Lomond by the Santa Cruz Water Department (SCWD).

SVWD is working with SCWD on a drought response project that includes the design and construction of 2 critical pieces of infrastructure to improve drought resiliency for SVWD and SCWD: 1) a 12-inch-diameter, bi-directional, 1 million gallon per day intertie pipeline and pump station between the SCWD and SVWD distribution systems to facilitate transfers of water in droughts or other emergencies; and 2) a new extraction well in SVWD to replace aging wells to provide redundancy and increase extraction capacity to meet potential increased demand, and to strengthen SVWD's ability to supply water to neighboring agencies during drought.

While the initial phase of the project provides an emergency supply for both agencies, the 2 new infrastructure elements also create an opportunity to increase inter-district conjunctive use that relies on surface water sources from outside the Basin. In WY2024, the design for the pipeline component was completed and an agreement with a contractor was approved for the construction of the pipeline. In WY2025, the intertie was completed. The associated pump stations for the interties and well will be completed in WY2026. SVWD and SCWD are also working on an Operational Agreement for the project.

Sustainable Management Criteria Evaluation

Groundwater conditions are evaluated relative to Sustainable Management Criteria (SMC) metrics defined in the GSP. There were undesirable results in the Basin in WY2025 due to extraction from the Lompico Aquifer of 1,336 AF exceeding the minimum threshold (MT) of 1,290 AF for the groundwater storage indicator. However, this condition is not expected to continue as the new SVWD Sucinto and Grace Way wells come on-line in WY2026. These wells will draw water from both the Lompico and Butano aquifers. This will effectively reduce Lompico aquifer extraction to less than its MT.

There are MT exceedances in WY2025 that do not constitute undesirable results. The groundwater level is at the MT for SVWD #15, a Lompico/Butano aquifer monitoring well, but an undesirable result is defined as occurring in 2 consecutive years. This well is highly influenced by pumping at the nearby SVWD Orchard extraction well, making static groundwater levels difficult to evaluate. SMGWA will continue to monitor this condition in WY2026 and will consider this in its Basin GSP Periodic Evaluation. There are also MT exceedances routinely for naturally-occurring groundwater quality constituents iron and manganese. These constituents are found at concentrations above regulatory standards and thus exceed the MTs; however, this condition has been managed by groundwater users and is not an undesirable result.

There are some other concerns for the water quality indicators that did not exceed an MT or cause an undesirable result. Arsenic concentrations are close to the MT and drinking water standard in 2 municipal supply wells (SVWD #11B and SLVWD Pasatiempo #8) and Total Dissolved Solids (TDS) are increasing in several wells dispersed in all 3 principal aquifers and in different areas of the Basin. Concentrations of these constituents remain below the MTs and the wells meet drinking water regulatory standards.

1 INTRODUCTION

The Sustainable Groundwater Management Act (SGMA) of 2014 established a requirement and a framework for local agencies to sustainably manage their groundwater basins for current and future users of this vital resource. The Santa Margarita Groundwater Agency (SMGWA) formed in June 2017 to act as the local Groundwater Sustainability Agency (GSA) for the Santa Margarita Groundwater Basin (Basin). SGMA requires the submittal of a Groundwater Sustainability Plan (GSP) and an Annual Report to the California Department of Water Resources (DWR). The SMGWA Board of Directors unanimously adopted its GSP after a public hearing on November 17, 2021, and the GSP was submitted to DWR on January 3, 2022. DWR approved the SMGWA GSP on April 27, 2023. The SMGWA has until the end of January 2042 to achieve sustainable groundwater conditions as described in the GSP.

This is the fifth Annual Report prepared since adoption of the Basin GSP. It covers the 2025 Water Year (WY2025), from October 1, 2024, through September 30, 2025. Prior Annual Reports are available at the SMGWA website (https://www.smgwa.org/AnnualGSPReports) or at the DWR SGMA Portal (https://sgma.water.ca.gov/portal/).

1.1 Purpose of Annual Report

This Annual Report is intended to show progress toward achieving sustainable groundwater resources for those reliant on the Basin. It demonstrates to DWR, which is responsible for tracking GSP progress, that SMGWA is 1) evaluating groundwater conditions annually; 2) implementing the GSP, including advancing projects and management actions and other plan components; and 3) comparing conditions to locally established sustainable management criteria (SMC).

1.2 Santa Margarita Groundwater Basin

The Basin is identified by DWR as the Santa Margarita Groundwater Basin (No. 3-027). As shown on Figure 1, the Basin covers an area of 34.8 square miles (22,249 acres) in central Santa Cruz County. The Basin is home to an estimated 29,000 residents and includes the City of Scotts Valley and the communities of Boulder Creek, Brookdale, Ben Lomond, Lompico, Zayante, Felton, and Mount Hermon. In WY2025, groundwater met about 69% of the Basin's water supply needs.

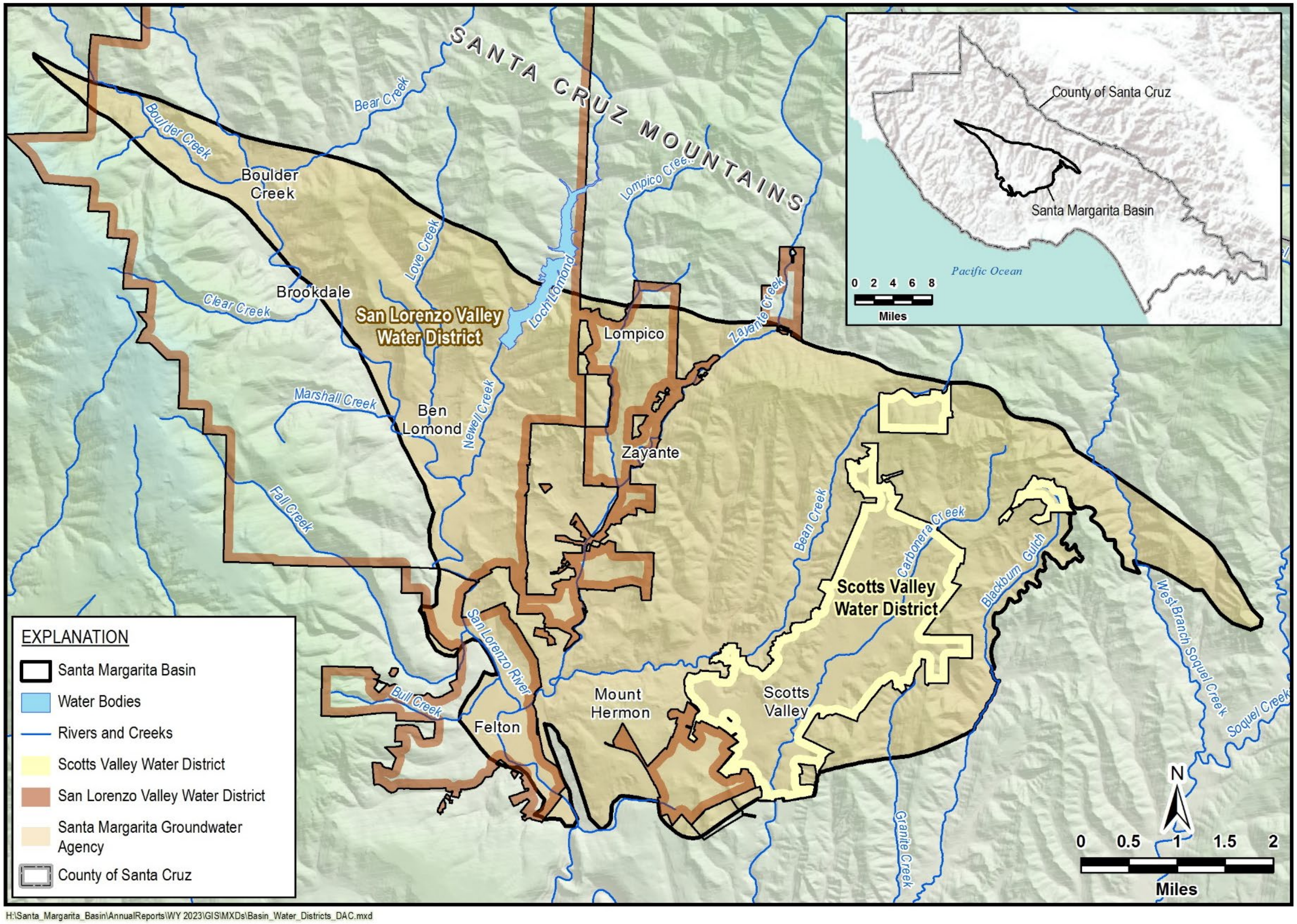


Figure 1. Basin and Member Agency Jurisdictional Boundaries

The Basin is a geologically complex area that was formed by the same tectonic forces along the San Andreas fault zone that created uplift of the Santa Cruz Mountains and the rest of the California Coast Range. The Basin is bounded on the north by the Zayante trace of the active, strike-slip Zayante-Vergeles fault zone; on the east by a buried granitic high that separates the Basin from Santa Cruz Mid-County Basin; and on the west by the Ben Lomond fault (except where areas of alluvium lie west of the fault in an area previously designated as the Felton Basin). The southern boundary of the Basin with the West Santa Cruz Terrace Basin is located where sedimentary formations thin over a granitic high. A geologic map of the Basin is shown on Figure 2.

The Basin is filled with Tertiary-age sedimentary rocks. From oldest and deepest to youngest and shallowest, the main units are the Butano Sandstone, Lompico Sandstone, Monterey Formation, and Santa Margarita Sandstone. The 3 sandstone formations are the Basin's principal aquifers for water supply, as defined in the GSP. Although used for private domestic wells, the Monterey Formation is not a principal aquifer because it only supports small groundwater extraction volumes. Two younger formations cap the hilltops east of Zayante Creek: the impermeable Santa Cruz Mudstone and the overlying Purisima Formation, which is a major aquifer in the adjacent Santa Cruz Mid-County Basin but is of such limited extent in the Santa Margarita Basin that it is used only for private domestic wells.

An example cross section on Figure 3 illustrates the subsurface geology along line D-D' on the geologic map shown on Figure 2. The cross section highlights the area in Mount Hermon and Scotts Valley where the Monterey Formation aquitard is absent between the Santa Margarita Sandstone and the underlying Lompico Sandstone. It shows how thin the Purisima Formation is in the Basin and how the Santa Margarita Sandstone is an unconfined aquifer, whereas the Lompico Sandstone and the Butano Sandstone are partially confined aquifers due to the presence of the overlying Monterey Formation.

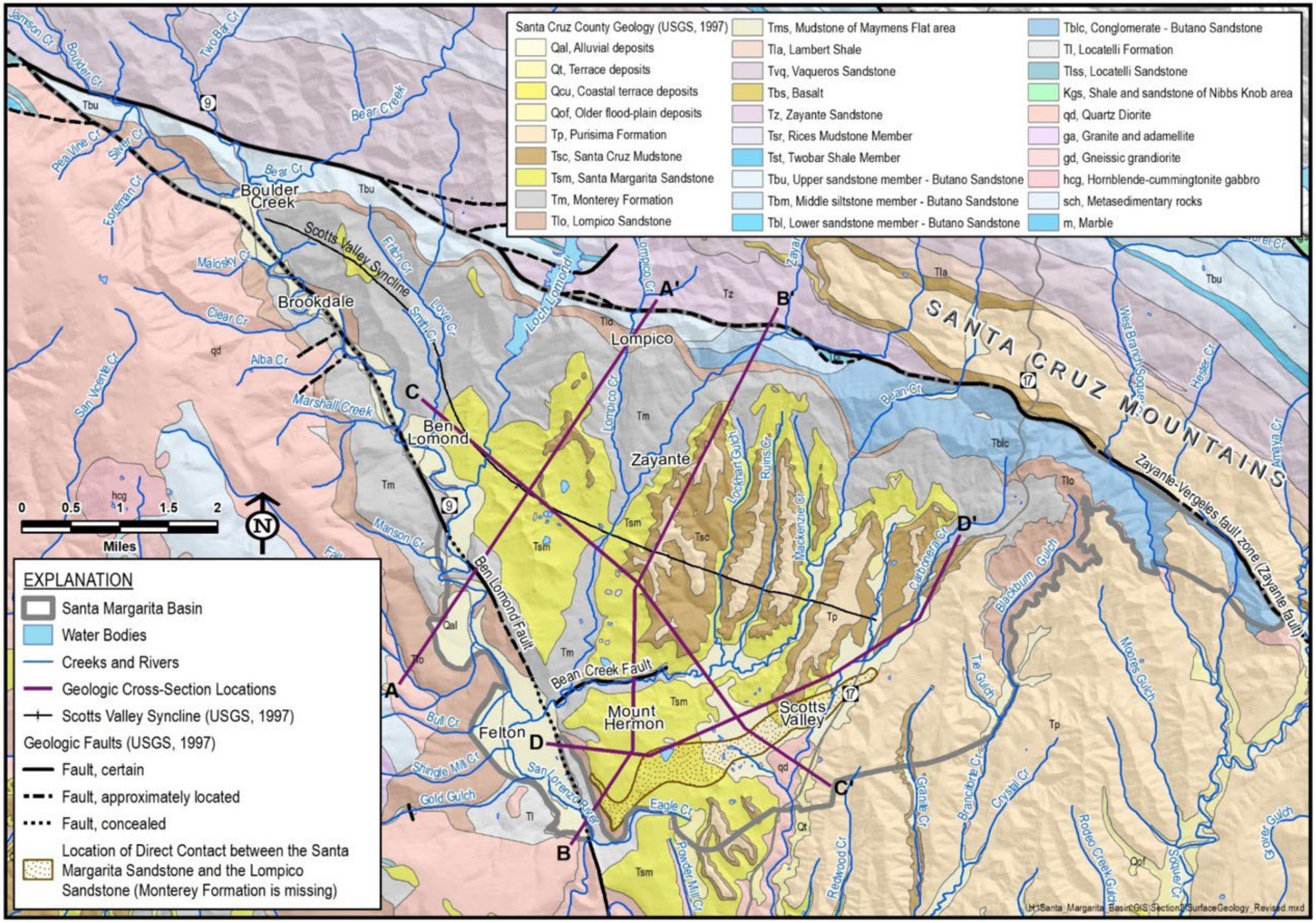


Figure 2. Surface Geology and Geologic Cross Section Locations

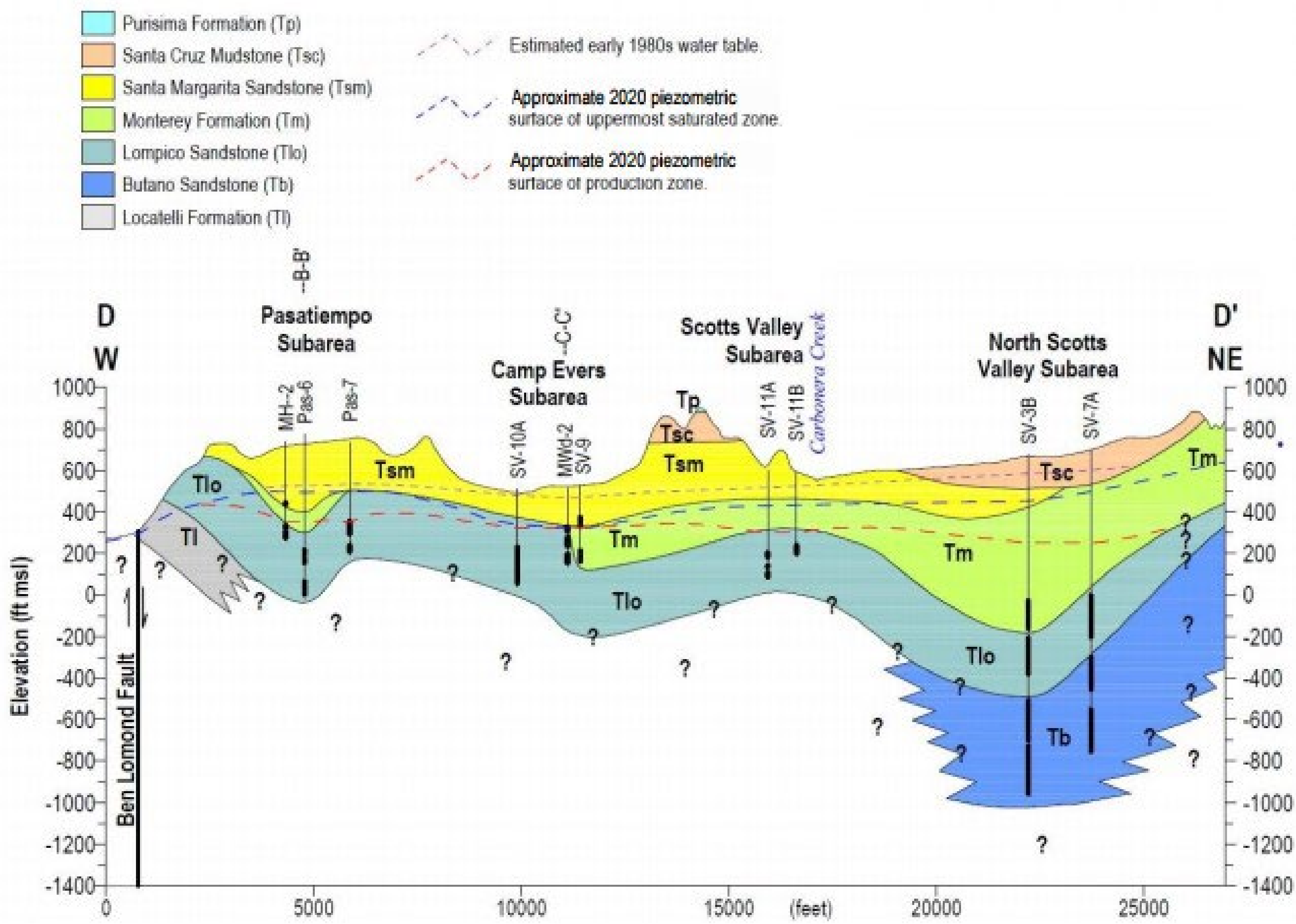


Figure 3. D-D' Geologic Cross Section

1.3 Santa Margarita Groundwater Agency

SMGWA, the sole GSA for the Basin, was formed through a Joint Powers Agreement (JPA) between Scotts Valley Water District (SVWD), San Lorenzo Valley Water District (SLVWD), and the County of Santa Cruz (County). Figure 1 shows the jurisdictional extent of member agencies that comprise the SMGWA in relation to the Basin boundary. SGMA and the JPA grant SMGWA the legal authority to prepare, adopt, and implement the GSP in the Basin.

SMGWA is governed by an 11-member Board of Directors comprising 2 representatives from each member agency as well as: 1 from the City of Scotts Valley, 1 from the City of Santa Cruz, 1 from Mount Hermon Association (MHA), and 2 private well owners. Each of the member agencies and other entities also have an alternate Board member.

1.4 Report Organization

The Annual Report includes required content resulting from GSP Regulations developed by DWR following the passage of SGMA. Organization of the report generally follows the GSP Regulations to help DWR review the Annual Report as required by SGMA, but there are deviations intended to make the report's flow more accessible to local users. The WY2025 Annual Report includes the following sections:

Executive Summary. This is a required section that summarizes the key information presented in the Annual Report.

Section 1. Introduction. This provides a brief background on the Annual Report and its purpose, the Basin, SMGWA, and the report organization.

Section 2. Water Year Conditions and Water Use. This section starts with a summary of the hydrologic conditions experienced in the Basin in WY2025, and is followed by a summary of the sources and uses of water in the Basin. Finally, Basin groundwater elevation and storage conditions are summarized.

Section 3. Progress Toward Implementing the GSP. This section describes progress on GSP projects and management actions, other GSP implementation activities, and actions taken toward addressing the DWR corrective actions identified in the GSP approval letter received by SMGWA on April 17, 2023.

Section 4. Sustainable Management Criteria Evaluation. This section compares WY2025 conditions at representative monitoring points to applicable sustainability indicators.

Appendices. These include long-term groundwater elevation hydrographs for representative monitoring points in relation to their measurable objectives and minimum thresholds, long-term hydrographs at other monitoring points in the Basin, and tables of water quality data and graphs of trends over time for constituents of concern.

2 WATER YEAR CONDITIONS AND WATER USE

The hydrologic conditions in WY2025 were below average for precipitation, and cumulative discharge as measured on the San Lorenzo River at the United States Geological Survey (USGS) Big Trees Gage. Despite the below average precipitation, groundwater use remained similar to the previous year and groundwater levels were stable or increased in 9 of 14 representative monitoring point (RMP) wells (see Section 4 for additional description on groundwater level results). The Basin Model estimated a net decrease of groundwater in storage of 1,640 AF, mainly because of below average precipitation recharge.

2.1 Precipitation

Precipitation is the primary source of recharge in the Basin through both direct rainfall percolation and streamflow infiltration. Monitoring annual precipitation is a key component for understanding local water supply trends and groundwater conditions. Long-term precipitation records are available for 2 weather stations in the Basin: El Pueblo weather station in Scotts Valley and Boulder Creek weather station in Boulder Creek. Annual precipitation for the stations is shown on Figure 4.

WY2025 precipitation was below average for the Basin. Total precipitation was 24.5 inches in Scotts Valley and 34.7 inches in Boulder Creek, which is about 60% and 69% of their respective long-term averages (Figure 4). Monthly precipitation relative to the most recent 30-year average (1995 through 2024) is shown on Figure 5. For WY2025, there was very little precipitation in January, which is typically the wettest month of the year. The wet season was relatively short with very little precipitation in the shoulder months of October, April, and May. In the months that it rained—November, December, and February—the precipitation totals were close to typical monthly averages.

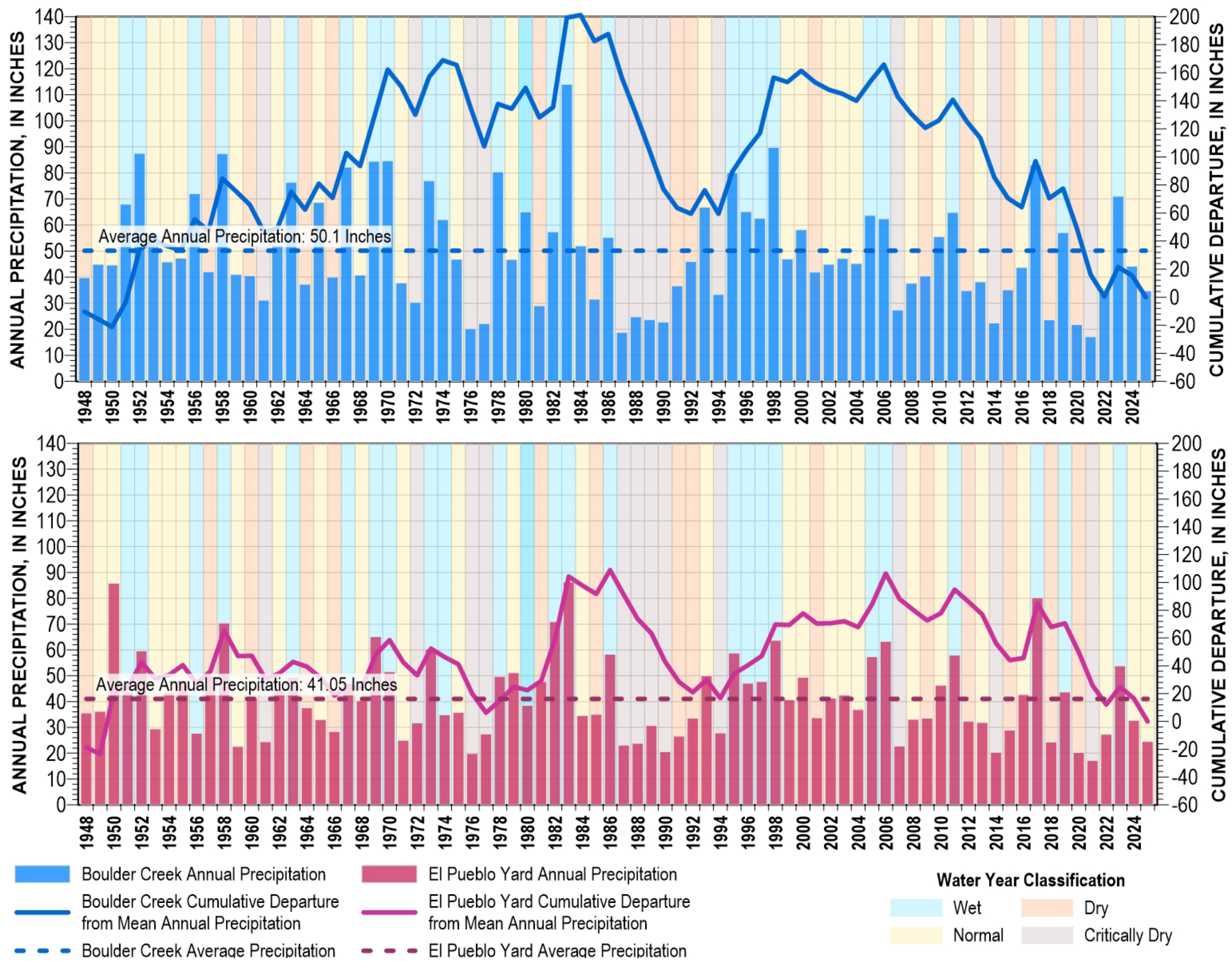


Figure 4. Annual Precipitation, Cumulative Departure from Average Annual Precipitation, and Water Year Type, WY1948-2025

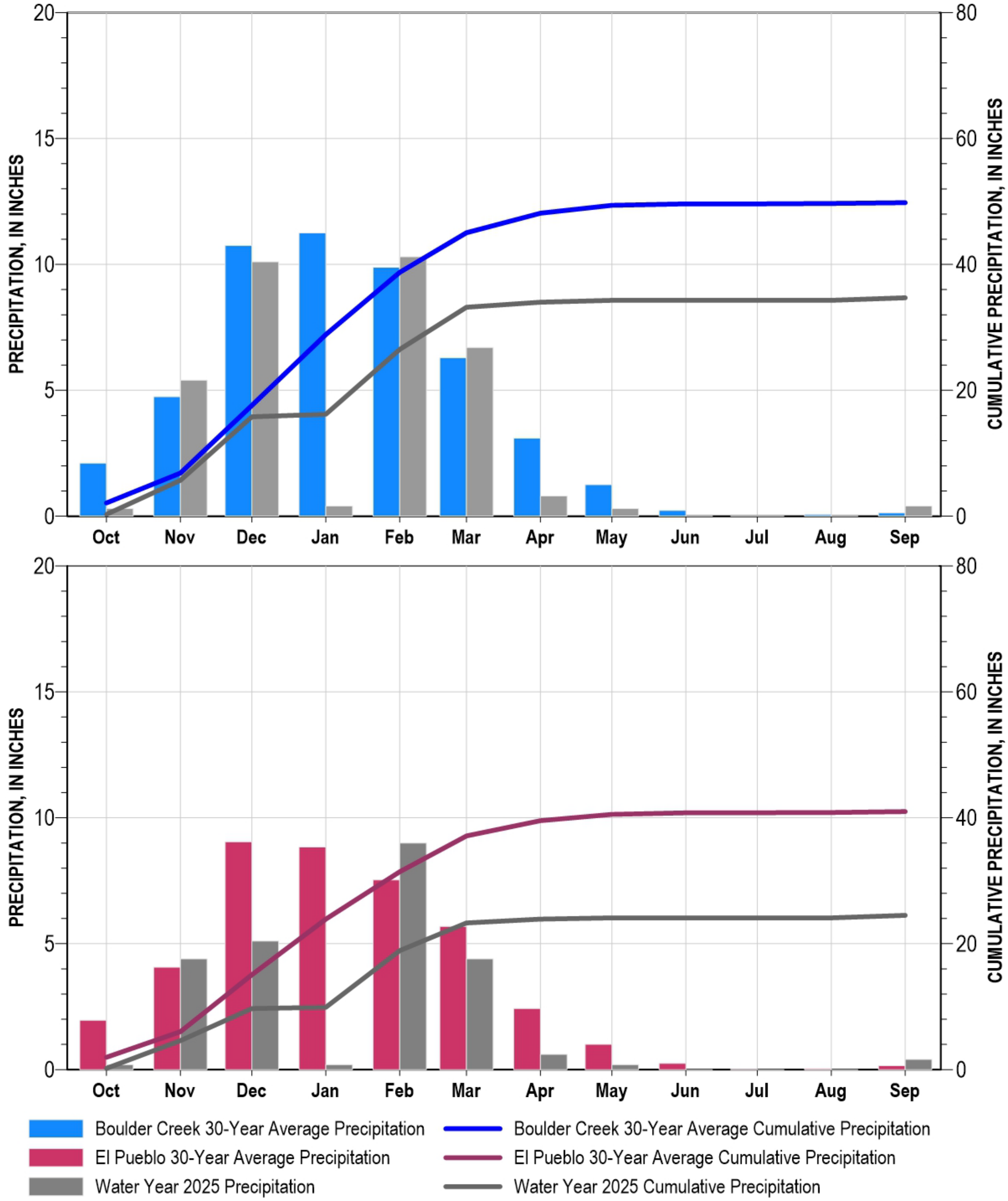


Figure 5. WY2025 Monthly and Annual Cumulative Precipitation versus 30-Year Average Precipitation

2.2 Surface Water Flow

The water year type is determined for the Basin using the City of Santa Cruz water year classification system[1]. This classification system is based on the total cumulative discharge of the San Lorenzo River as measured just downstream of the confluence with Zayante Creek at the USGS Big Trees Gage. Based on the cumulative streamflow, WY2025 is classified as a normal water year. However, it was on the lower end of the normal classification.

Lower late winter and spring flows resulted in below average monthly and cumulative streamflow in the San Lorenzo River for most of WY2025. Daily streamflow is shown on Figure 6 and monthly streamflow relative to long-term averages is shown on Figure 7. Streamflow at the Big Trees Gage peaked in February and then gradually decreased over the remainder of the water year. Cumulative WY2025 streamflow was 58,000 AF, which is about 58% of the 30-year cumulative average of 99,800 AF (Figure 7). Monthly streamflow was below average in nearly every month, with February being the only month that exceed the 30-year average.

[1] The City of Santa Cruz began using a new 5-tier classification system in 2025. SMGWA is using the old classification system in this annual report and will evaluate the need to transition to the new classification system as it conducts its GSP Periodic Evaluation in 2026.

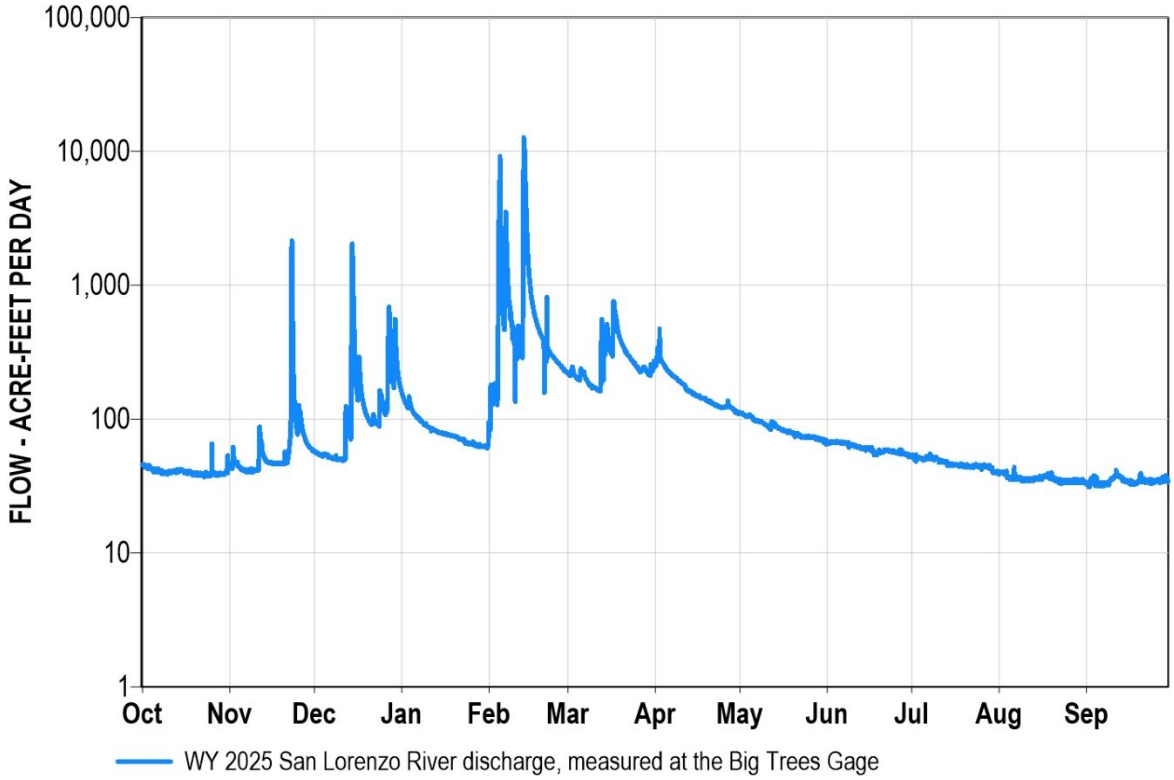


Figure 6. Streamflow at the USGS Big Trees Streamflow Gage, WY2025

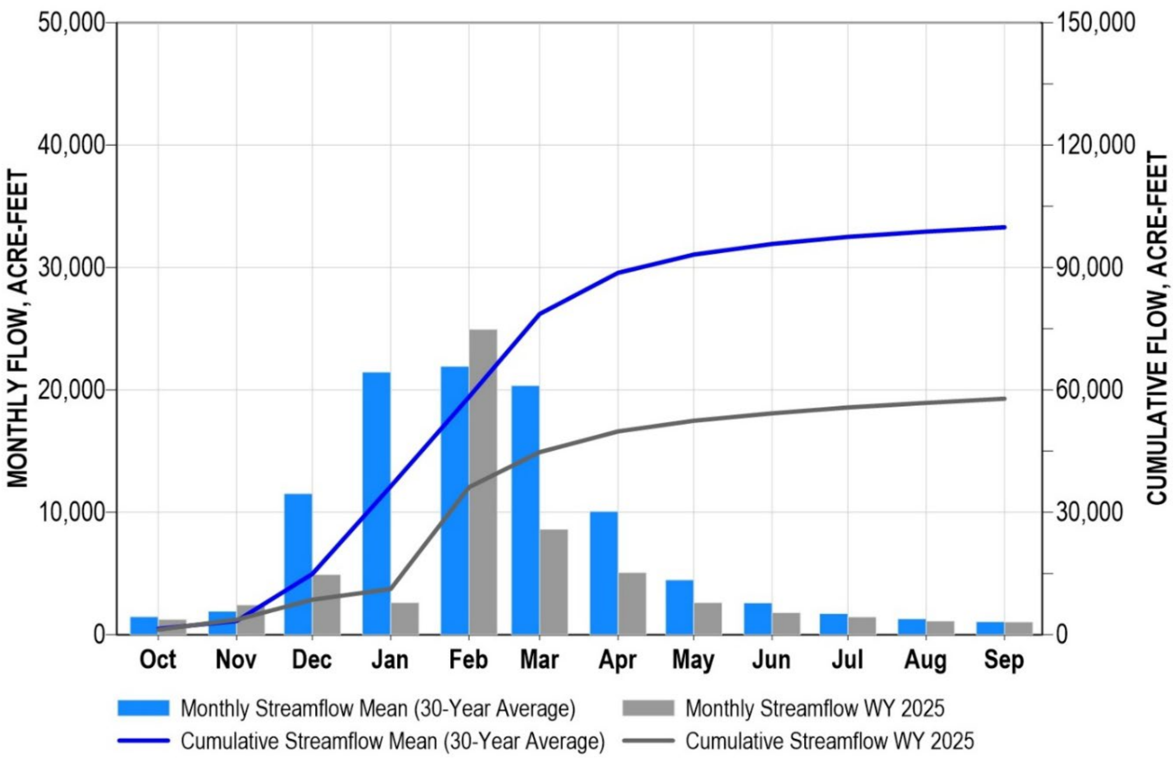


Figure 7. WY2025 and 30-year Mean Monthly and Cumulative Streamflow at the USGS Big Trees Gage

2.3 Groundwater Use

The total volume of groundwater extracted in WY2025 was 2,383 AF, about 35 AF more than extracted in WY2024. Groundwater extraction in the last 3 years has been very consistent, with all three years ranking among the lowest groundwater volume extracted since WY1985 when reliable record keeping began. Table 1 summarizes groundwater extraction for WY2025 by sector and by aquifer, and explains the measurement sources and relative accuracy. Figure 8 shows the locations of WY2025 groundwater extraction by aquifer and volume.

There are 3 principal aquifers and 2 additional non-principal aquifers that are used for groundwater supplies in the Basin. Most groundwater extraction is from the Lompico and Butano aquifers south of Bean Creek; only the Santa Margarita is used as a significant groundwater supply aquifer north of Bean Creek. Of the total groundwater extracted in the Basin in WY2025, the Lompico aquifer supplied 56%, the Santa Margarita aquifer supplied 24%, and the Butano aquifer supplied 15%. The remaining 5% of groundwater was extracted primarily for rural domestic uses from the Monterey Formation and Purisima Formation, which are non-principal aquifers.

Most groundwater extraction in the Basin is for municipal supplies by SLVWD, SVWD, and MHA. In WY2025, about 80% of groundwater extracted from the Basin was by these water providers. SLVWD extracted 613 AF (26%), SVWD extracted 1,128 AF (47%), and MHA extracted 167 AF (7%). About 64% of SLVWD extraction was from the Santa Margarita aquifer north of Bean Creek and about 36% was from the Lompico aquifer south of Bean Creek. All SVWD extraction is from the Lompico and Butano aquifers south of Bean Creek, with about 70% being from the Lompico aquifer. All MHA extraction is from the Lompico aquifer. Basin-wide groundwater extraction for municipal use increased in WY2025 relative to WY2024.

SLVWD used 10% less groundwater than in WY2024. SLVWD's groundwater extraction has significantly declined the last 4 years in comparison to WY2021, a year in which groundwater use was greater than normal due to drought and the destruction of surface water diversion and conveyance infrastructure in the August 2020 CZU wildfire. The volume extracted in WY2025 was about 28% less than the average annual extraction for the 6-year period before the wildfire (from WY2014 to WY2019).

SVWD's extraction increased slightly in WY2025, with the increase occurring in the Lompico. SVWD is undergoing a supply well replacement and expansion program, with the Sucinto Well and Grace Way supply wells screened in the Lompico and Butano aquifers expected to start producing water in WY2026 and WY2027, respectively. The addition of these wells will reduce SVWD's reliance on their 3 existing supply wells and decrease pumping in the Lompico Aquifer as some of the extraction volume will shift to the deeper Butano Aquifer.

Like SVWD, MHA also increased its groundwater extraction in the Lompico Aquifer, by about 9% in WY2025 compared to WY2024. MHA extraction in WY2025 was about 1% less than the average for 1991 through 2024, the period for which metered data are available.

Small water systems accounted for about 4% of WY2025 groundwater extraction in the Basin. The remaining groundwater uses in the Basin—private domestic use, landscaping, irrigation, pond filling and dust-control in quarries—are not metered, so the volumes of groundwater extracted are estimated. Quail Hollow Quarry pumping was revised from 25 to 32 AF in WY2024 based on updated estimates of water use for dust control, and remained the same in WY2025. Otherwise, the groundwater extractions for WY2025 were assumed to be the same as estimates made in the GSP for WY2018 for these smaller users, given that commercial and domestic activities have changed little in the Basin's sparsely populated areas. Relative to total groundwater use in WY2025, approximately 10% of groundwater extraction is for unmetered private domestic use, 5% is for landscaping, irrigation, and pond filling, and 1% is for dust mitigation at the Quail Hollow Quarry.

Table 1. Groundwater Extraction in the Santa Margarita Basin, WY2025

Agency / Extraction Type	Principal Aquifer Extraction (acre-feet)			Non-Principal Aquifer Extraction (acre-feet)		Total (acre-feet)	Percentage of Total Extraction
	Santa Margarita	Lompico	Butano	Monterey	Purisima		
San Lorenzo Valley Water District[1]	393	219	0	0	0	**613**	**26%**
Scotts Valley Water District[1, 2]	0	807	321	0	0	**1,128**	**47%**
Mount Hermon Association[1]	0	167	0	0	0	**167**	**7%**
Private Domestic Wells[3]	62	28	26	87	31	**234**	**10%**
Non-Domestic Private Groundwater Users[4]	38	84	0	0	0	**122**	**5%**
Small Water Systems[5]	53	31	0	4	0	**88**	**4%**
Quail Hollow Quarry[6]	32	0	0	0	0	**32**	**1%**
Total by Aquifer (acre-feet)	**578**	**1,336**	**347**	**91**	**31**	**2,383**	**100%**
Aquifer Percentage of Total Extraction	**24%**	**56%**	**15%**	**4%**	**1%**	**100%**	

[1] Direct measurement by flow meter (most accurate).

[2] In WY2025, SVWD had 2 wells that extracted groundwater exclusively from the Lompico aquifer and 1 well that extracted from both the Lompico and Butano aquifers. For the SVWD extraction well screened in both aquifers, it is estimated that 40% of the water is from the Lompico aquifer and 60% from the Butano aquifer.

[3] Estimated based annual water use factor per connection determined from metered Small Water Systems and applied to each residence outside of municipal water service areas (less accurate). The water use factor for WY2025 is 0.3 AF per connection. Number of private wells is assumed to be 777.

[4] Other private non-domestic uses include landscape irrigation and water for landscape ponds. Extraction is not metered so the volume is estimated (less accurate).

[5] Metered data are reported to County, but is submitted on a calendar year basis with the most recent data available being through December 2024. Therefore, only October through December 2024 are in WY2025, while January through September 2024 are in WY2024. While this reduces accuracy somewhat, the volumes from year to year generally do not vary significantly.

[6] Estimated by Graniterock in April 2024 based on estimated pumping rate and operational days per year at quarry (less accurate).

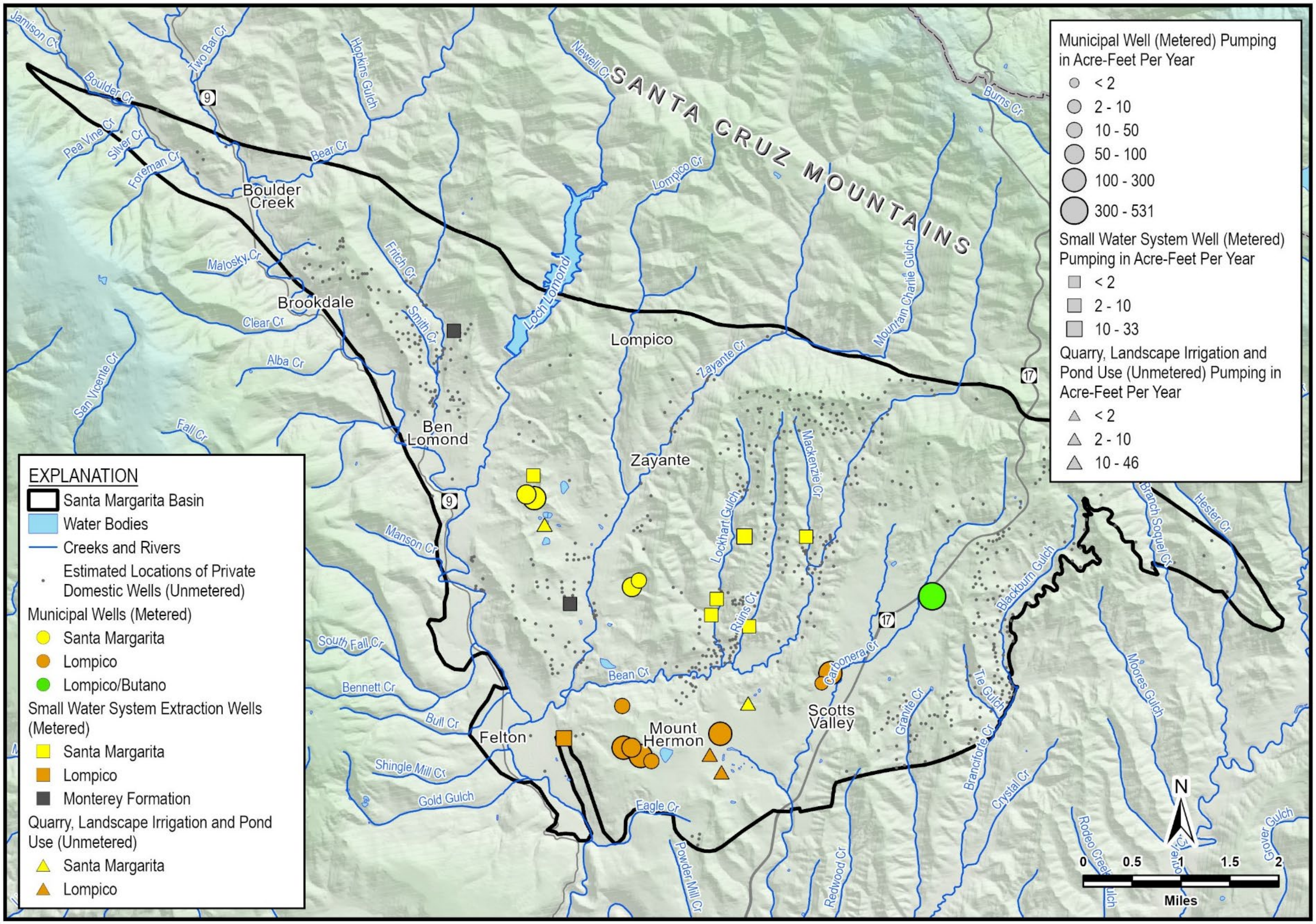


Figure 8. Groundwater Extraction Across the Santa Margarita Basin, WY2025

2.4 Surface Water Use

SLVWD is the primary surface water user in the Basin and adjacent watershed. In WY2025, SLVWD diverted a total of 1,155 AF of surface water from creeks that are tributaries to the San Lorenzo River. This is about 2% more than the long-term average of 1,135 acre-feet per year (AF/yr) since WY2009 when SLVWD acquired the Felton System surface water sources (see Section 3.1.1.4 for additional description of the SLVWD systems). Less surface water was used in WY2025 because of below average streamflow. SLVWD still applies conjunctive use practices to promote surface water use in wetter years in lieu of groundwater pumping. In WY2025, SLVWD transferred 14 AF within the Basin to Forest Springs and exported 21 AF outside the Basin to Big Basin Water Company (2 AF) and Bracken Brae (5 AF). Other small water systems with surface water rights in the Basin use about 7 AF/yr.

Under its water rights, SCWD diverts water from the San Lorenzo River at the southern end of the Basin in Felton during the wet season of non-drought years for use in their service area, which is outside the Basin. This water is pumped upstream to Loch Lomond Reservoir for later use in the dry season and, more substantially, in dry years. SCWD did not operate the Felton diversion in WY2025.

SCWD regularly diverts water from the San Lorenzo River about 5 miles downstream of the Basin. In WY2025, SCWD diverted 5,307 AF from the San Lorenzo River downstream of the Basin. While this water is neither diverted nor used within the Basin, it is included in this report because SCWD is an active participant in the SMGWA and Basin GSP implementation due to the presence of critical infrastructure for their surface water supplies within the Basin and the important relationship between successful Basin management and downstream flow in the San Lorenzo River. SCWD is also active in planning for some of the projects described in Section 3.1.3.

2.4.1 Surface Water Used for In-lieu Groundwater Recharge

SLVWD has practiced conjunctive use in its North System for decades. In the North System, SLVWD optimizes the use of surface water and groundwater by using stream flows for water supply while they are high and relying more on groundwater during the dry season. Conjunctive use in the North System reduces groundwater pumping in the Santa Margarita aquifer at the Quail Hollow and Olympia wellfields. On average, the North System uses surface water for 55% of its water supply and groundwater for 45%, reflecting long-term conjunctive use operations.

In WY2025, SLVWD continued to shift its operations to preferentially use surface water in lieu of groundwater in the North System. An estimate of the amount of North System surface water used for in-lieu groundwater recharge is obtained by comparing water usage to long-term averages. This was done by applying the long-term average ratio of surface water to groundwater (55% surface water, 45% groundwater) to the WY2025 total water use in the North System of 939 AF, which results in an expected use of 516 AF of surface water and 423 AF of groundwater. Actual surface water diversion in the North System in WY2025 was 545 AF (58% of total) and groundwater extracted was 393 AF (42% of total). While there are other factors that are difficult to account for (e.g., differences in total demand from year to year), the 29 AF increase from the average expected surface use in WY2025 represents a conservative estimate of surface water from the North System used for in-lieu recharge.

A more direct measure of in-lieu recharge can be obtained from data on intra-district water transfers. Use of the emergency intertie between the Felton System and the San Lorenzo Valley System since the 2020 CZU wildfire has demonstrated the value of conjunctive use practices and has benefited the Basin through in-lieu recharge. In WY2025, SLVWD transferred 254 AF of surface water from the Felton System into the San Lorenzo Valley System. This represents in-lieu recharge of the Basin because it offsets extraction of groundwater that would have otherwise been used due to surface-water infrastructure not being fully repaired from the 2020 CZU wildfire damage.

2.4.2 Surface Water Used for Direct Groundwater Recharge

SVWD and other private developments capture stormwater and recharge groundwater at low-impact development (LID) sites in Scotts Valley. Table 2 shows the total volume of known managed aquifer recharge using LID at SVWD-managed sites since they were constructed in 2018. In WY2025, about 24 AF of LID recharge was measured. The volume of direct recharge from LID is correlated with precipitation.

Table 2. LID Infiltration, WY2018-2025

Water Year	Volume Infiltrated (acre-feet)			
	Transit Center	Woodside HOA	Scotts Valley Library	Total
2018	1.75	17.30	3.39	**22.44**
2019	3.08	31.17*	6.11*	**40.38***
2020	1.50*	14.97*	2.94*	**19.42***
2021	1.40	13.86	1.41	**16.67**
2022	1.75	13.87	1.41*	**17.03***
2023	2.39	28.79	6.26	**37.44**
2024	2.16	21.95	4.28	**28.39**
2025	3.06	17.34	3.42	**23.82**

*Volumes estimated using available data

2.5 Total Water Use

Total water use in WY2025 was 3,709 AF. The main sources of water are municipal and private groundwater wells within the Basin and surface water diversions from the San Lorenzo River watershed west of the Basin by SLVWD. Small volumes of water are sourced by private surface diversions within the Basin and recycled water from the City of Scotts Valley. SVWD uses recycled water for non-potable irrigation and dust control, as discussed in more detail in Section 3.1.1.3. Table 3 summarizes WY2025 total water use by user, use, and water source type; the methods and accuracy of the estimates are included in the footnotes to the table. The table also shows surface water diverted by SCWD from the San Lorenzo River downstream of the Basin.

Figure 9 illustrates total water use by source and end user from WY1985 to WY2025. Total water used in WY2025 decreased by about 17 AF from WY2024, or less than 1%. Total water use in WY2025 was 36% less than peak Basin water use of 5,815 AF in WY2001.

Table 3. Total Water Use by Source, WY2025

Water Supplier	Groundwater Use	Surface Water Use	Recycled Water Use	Exported Water [2]	Total Water Use
	(acre-feet)				
San Lorenzo Valley Water District[1,2]	612	1,155	0	21	1,767
Scotts Valley Water District[1]	1,128	0	169	0	1,297
Mount Hermon Association[1]	167	0	0	0	167
Private Domestic Wells[3]	234	0	0	0	234
Other Non-Domestic Private Groundwater Users[4]	122	0	0	0	122
Small Water Systems[5]	88	2	0	0	90
Quail Hollow Quarry[6]	32	0	0	0	32
TOTAL	**2,383**	**1,157**	**169**	**21**	**3,709**
Water Diverted and Used Primarily Downstream and Outside the Santa Margarita Basin and Adjacent Areas					
City of Santa Cruz[1]	0	0 (Felton)[7] 5,307 (Tait St.)[8]	0	0	5,307
Total	**2,383**	**6,464**	**169**	**21**	**9,016**

[1] Direct measurement by flow meter (most accurate).
[2] SLVWD total includes a transfer of 11 AF to Forest Springs, a small water system inside the Basin, and exports of 19.6 AF to Big Basin Water Company and 2.5 AF to Bracken Brae Mutual, small water systems just outside the basin. Exports are not added to total water use to avoid double counting.
[3] See note in Table 1. Volume is estimated using population and water use data.
[4] Other private non-domestic uses include landscape irrigation and water for landscape ponds. Extraction is not metered so the volume is estimated (less accurate).
[5] See note in Table 1. Volume is partially estimated using prior water year data.
[6] Estimated based on historical usage (less accurate).
[7] City of Santa Cruz's San Lorenzo River diversion from Felton to Loch Lomond. This diversion is in the Basin but is only used in wet years. It was not used in WY2025.
[8] City of Santa Cruz's San Lorenzo River diversion at Tait Street (5 miles downstream of the Basin) to the City treatment plant. Water is primarily sourced from within the Santa Margarita Basin and the surrounding San Lorenzo River Watershed but is used outside of the Santa Margarita Basin.

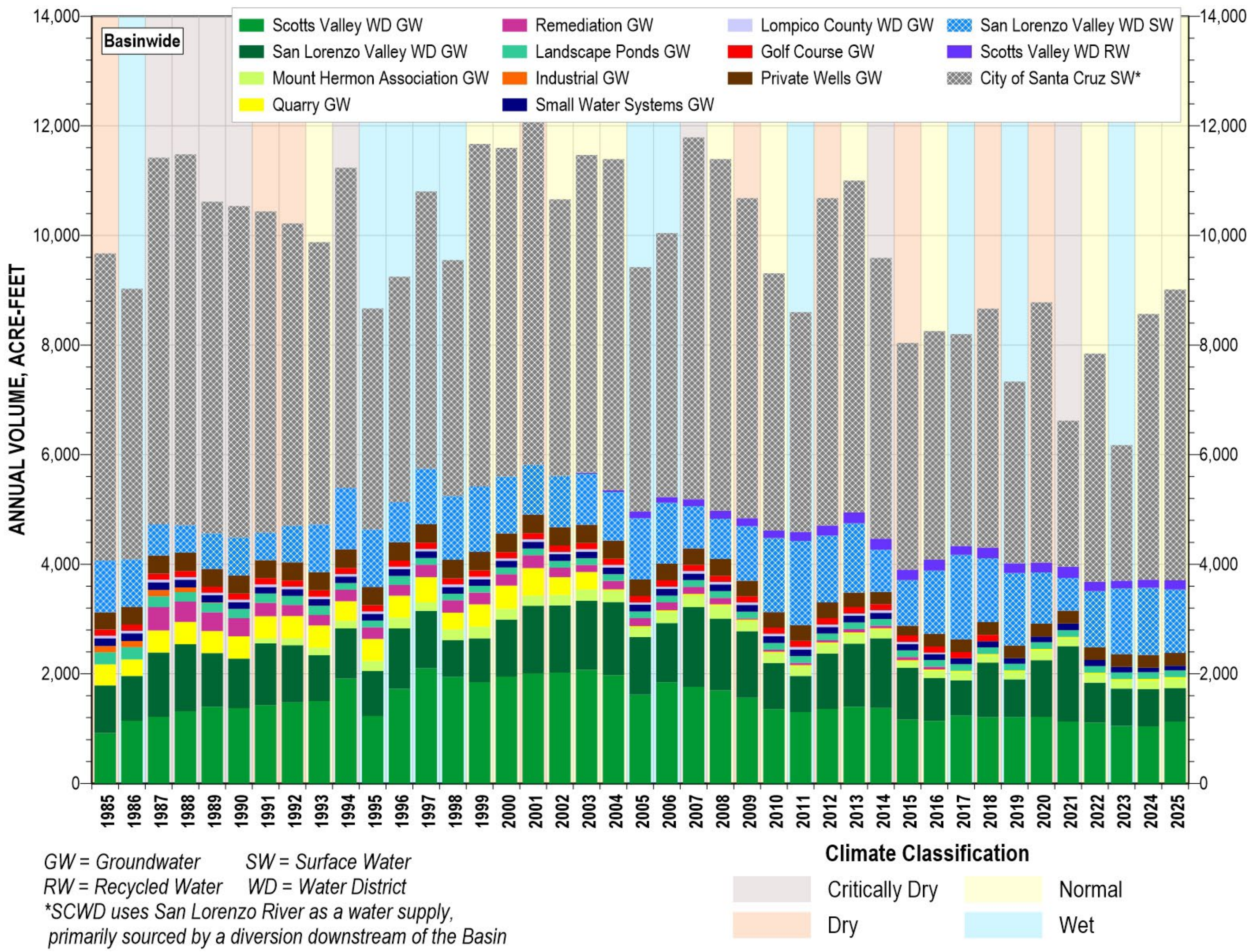


Figure 9. Total Basin Water Use, WY1985-2025

SCWD is the largest user of water resources originating from the Basin and its surrounding watershed, however that water is used outside the Basin. In WY2025, SCWD diverted 5,307 AF from the San Lorenzo River at the Tait Street diversion about 5 miles downstream from the Basin to serve its customers. Since this water is not diverted or used in the Basin, it is tracked separately from Basin water use in Table 3, but shown for reference on Figure 9.

Total water use by the 2 major water providers in the Basin, SLVWD and SVWD, has been decreasing consistently since the early 2000s (Figure 9), largely due to residents' strong conservation efforts and State regulations regarding water use efficiency in construction, as well as water efficiency measures undertaken by the water districts.

Most of the reduction in water use in the Basin since the early 2000s is driven by changes in groundwater extraction by SVWD. This is well-illustrated on Figure 10, which shows the volumes of water used north and south of Bean Creek by user and source. Most of the increase in water use in the Basin from 1985, when accurate records begin, until the early 2000s was a result of increasing extractions of groundwater by SVWD south of Bean Creek as the City of Scotts Valley grew and developed. Despite continued population growth, Scotts Valley water use has declined significantly from amounts used in the early 2000s. As a result, the volume of water used in WY2025 south (and east) of Bean Creek was similar to water used north of Bean Creek. This is consistent with the observation that groundwater elevations in SVWD wells in the South Scotts Valley area appear to be on a recovery trajectory since WY2015 (see Section 2.6.3).

MONTGOMERY & ASSOCIATES

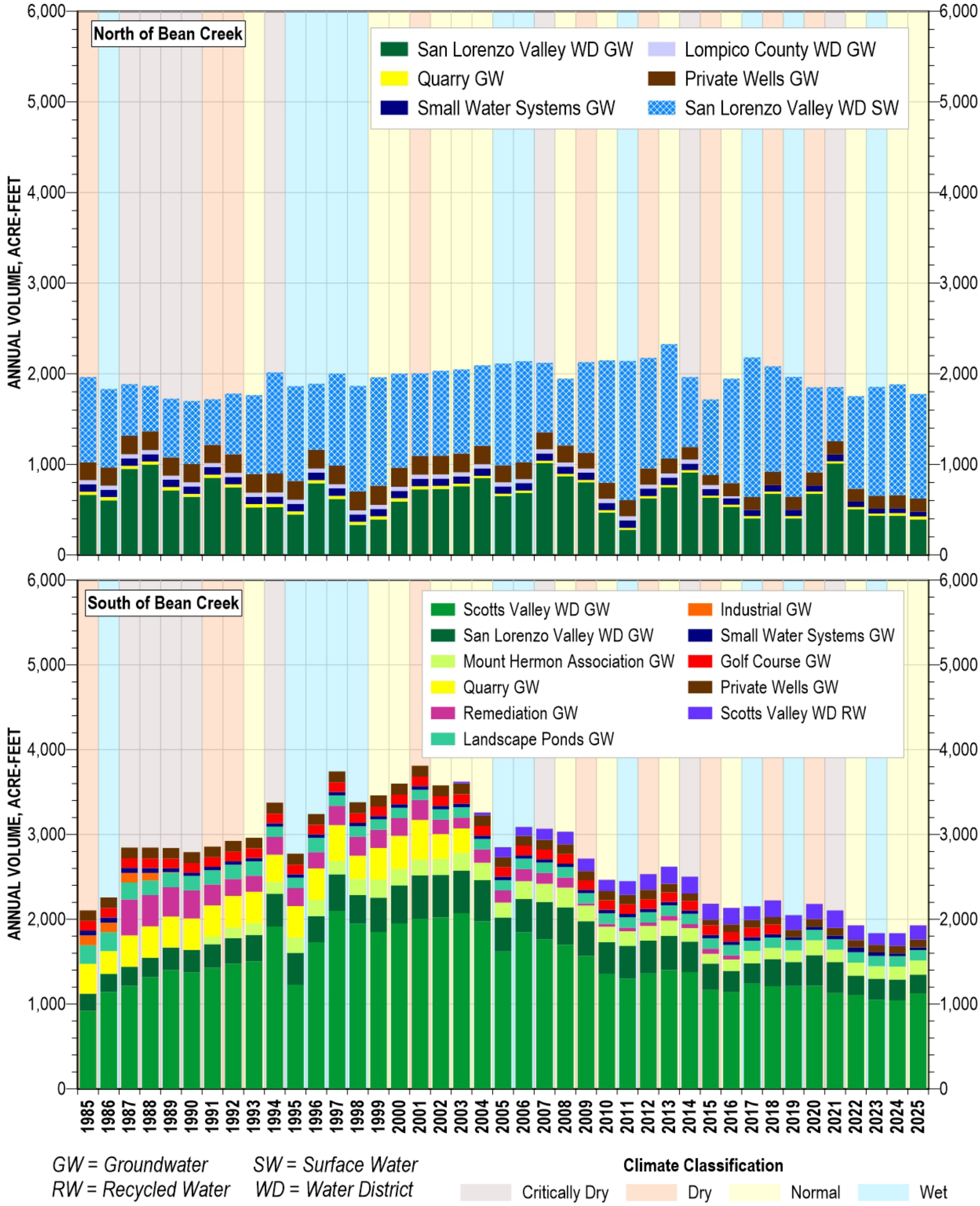


Figure 10. Total Water Use by Source and Location within the Basin, WY1985-2025

2.6 Groundwater Elevations

Groundwater elevations in the Basin are monitored using a network of 40 extraction and monitoring wells installed by SLVWD, SVWD, MHA, and, most recently, SMGWA. Many of the wells have been used for decades to evaluate short-term, seasonal, and long-term groundwater trends for groundwater management purposes; 7 are new monitoring wells installed by SMGWA between May and September 2023. Of the 40 wells, 14 serve as representative monitoring points (RMP[s]) for evaluating groundwater level SMC.

Groundwater levels are hand measured in monitoring wells using electric sounders at least semi-annually. SVWD and SMGWA wells have pressure transducers that measure and record groundwater level data at least daily. Groundwater level measurements collected from actively pumping extraction wells, or monitoring wells in close proximity to pumping wells, are noted and later removed from the datasets used to generate hydrographs and groundwater elevation contour maps.

Groundwater elevations are used to generate seasonal groundwater elevation contour maps for each principal aquifer (Figure 11 through Figure 16). For the Annual Report, groundwater elevation contours are only interpolated for areas with sufficient data. Seasonal differences in groundwater elevations are illustrated with measured minimum groundwater elevations from March to May 2025 on the Spring contour maps and minimum groundwater elevations in September 2025 on the Fall contour maps.

Hydrographs are used to evaluate long-term trends in groundwater elevation. All available non-pumping groundwater elevation data collected in each well through WY2025 are plotted against a background that indicates water year type to demonstrate the relationship between precipitation and groundwater elevations. Minimum thresholds (MT) and measurable objectives (MO) are included on the hydrographs for groundwater level RMPs.

Hydrographs are compiled in the appendices and grouped by RMPs and non-RMPs as follows:

- Appendix A: Chronic Lowering of Groundwater Level RMP Well Hydrographs
- Appendix B: Depletion of Interconnected Surface Water RMP Well Hydrographs
- Appendix C: GSP Non-RMP Monitoring Network Well Hydrographs

All groundwater elevation monitoring wells are shown in the Well Location Map in Appendix A.

2.6.1 Santa Margarita Aquifer

The Santa Margarita Sandstone is the most permeable formation in the Basin, and it is exposed widely at the surface in the southern and central portions of the Basin. As a result, the mostly unconfined Santa Margarita aquifer recharges quickly in response to rainfall, but its groundwater levels drop when rainfall is limited. The Santa Margarita aquifer supplies about 24% of the total groundwater extracted from the Basin for municipal, domestic, landscape, and sand quarry uses. It is the aquifer that is most important for supporting groundwater-dependent ecosystems (GDE), springs, and baseflow to creeks.

The Santa Margarita aquifer seasonal groundwater level patterns are different north and south of Bean Creek. In areas north of Bean Creak (Quail Hollow and Olympia/Mission Springs areas), the Santa Margarita aquifer exhibits greater seasonal fluctuations in groundwater level than in other areas (or, for that matter, in other aquifers) in the Basin due to municipal pumping at SLVWD wells in the Quail Hollow and Olympia/Mission Springs areas. In WY2025, groundwater levels in this area remained stable despite below average precipitation (Appendix A, figures A-1, A-3, and Appendix C, figures C-2 through C-6).

New monitoring well SMGWA-6, installed downgradient of the Quail Hollow wellfield, will be used to evaluate potential Santa Margarita aquifer groundwater and surface water interconnection at Newell Creek (Appendix C, figure C-11) and SMGWA-5, installed upgradient of the Quail Hollow wellfield, is being used to evaluate potential stream interconnection with Zayante Creek in an area used for private extraction (Appendix C, figure C-10).

South of Bean Creek (Mount Hermon/South Scotts Valley and North Scotts Valley areas), the Santa Margarita aquifer is partially dewatered. Dewatering occurred in the South Scotts Valley area due to overpumping for various uses in the 1990s, and groundwater elevations have not recovered. Even though the Santa Margarita aquifer is no longer used for municipal supply it has not recovered because, in this area, the Santa Margarita aquifer directly overlies the overdrafted Lompico aquifer with lowered groundwater levels (Figure 2 and Figure 3). In contrast, further south in the MHA and SLVWD Pasatiempo wellfields and further north in North Scotts Valley, the Santa Margarita aquifer was never used extensively as a water source and groundwater levels are more stable. Hydrographs for SLVWD's Pasatiempo MW-2 (Appendix A, figure A-5) and SVWD TW-18 (Appendix A, figure A-4) illustrate the long-term stable groundwater levels in these areas, with slight fluctuations depending on precipitation. New monitoring wells SMGWA-2, -3, and -4 are being used to monitor groundwater levels in areas used for private extraction and having potential interconnection with streams south of Bean Creek (Appendix C, figures C-7 through C-9).

Groundwater elevation contour maps for the Santa Margarita aquifer are shown on Figure 11 and Figure 12 for WY2025 Spring and Fall, respectively. Groundwater elevation contours in the unconfined Santa Margarita aquifer generally mimic topography. Groundwater flows toward areas where groundwater discharges naturally to springs and streams along Bean Creek and Zayante Creek. Locally, groundwater in the aquifer flows toward pumping depressions around extraction wells in the Quail Hollow and Olympia/Mission Springs areas. Groundwater elevations were similar between seasons in WY2025, with slightly higher elevations in the spring, and were close to observations from the prior annual report.

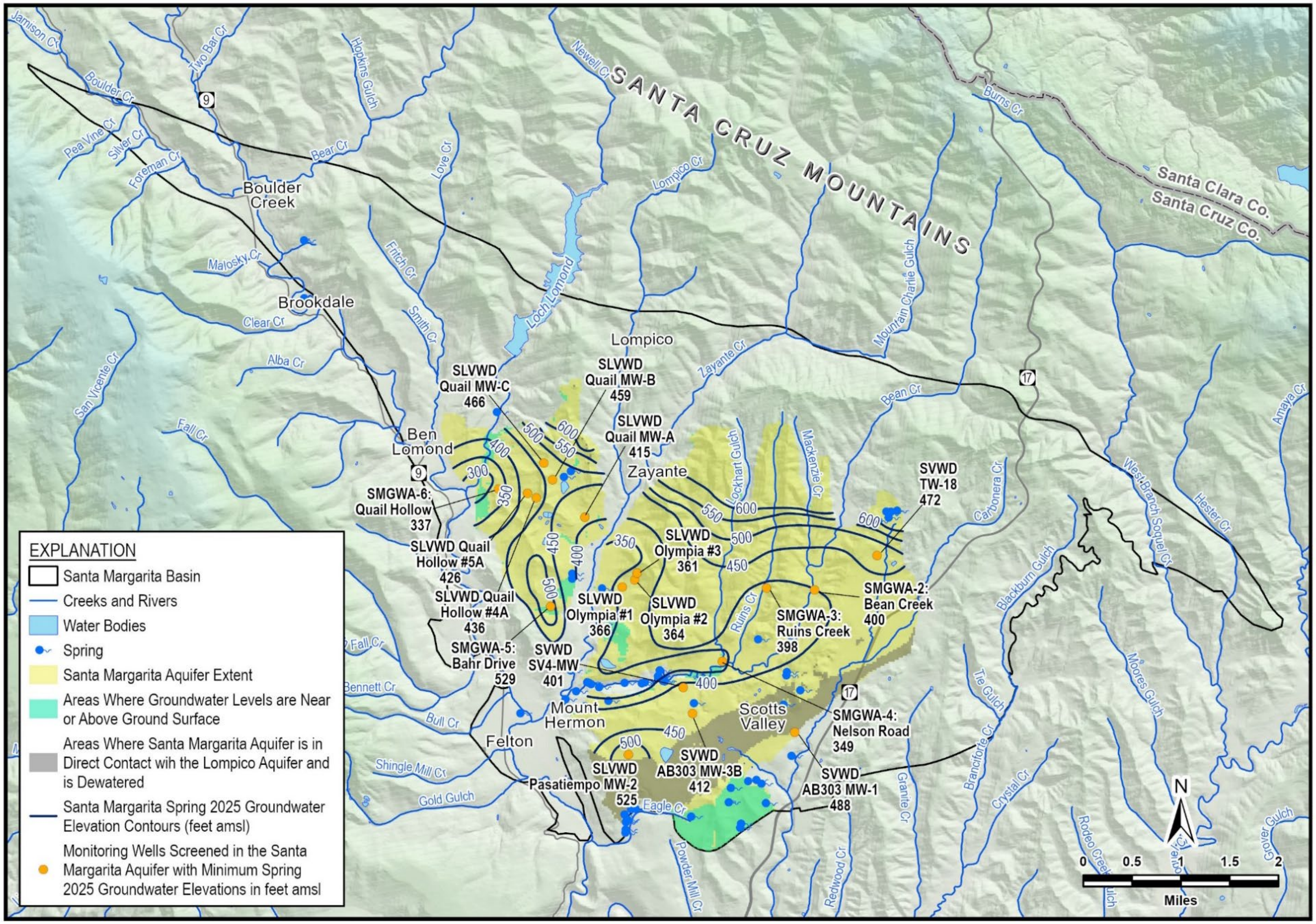


Figure 11. Santa Margarita Aquifer Groundwater Elevations and Contours, Spring 2025

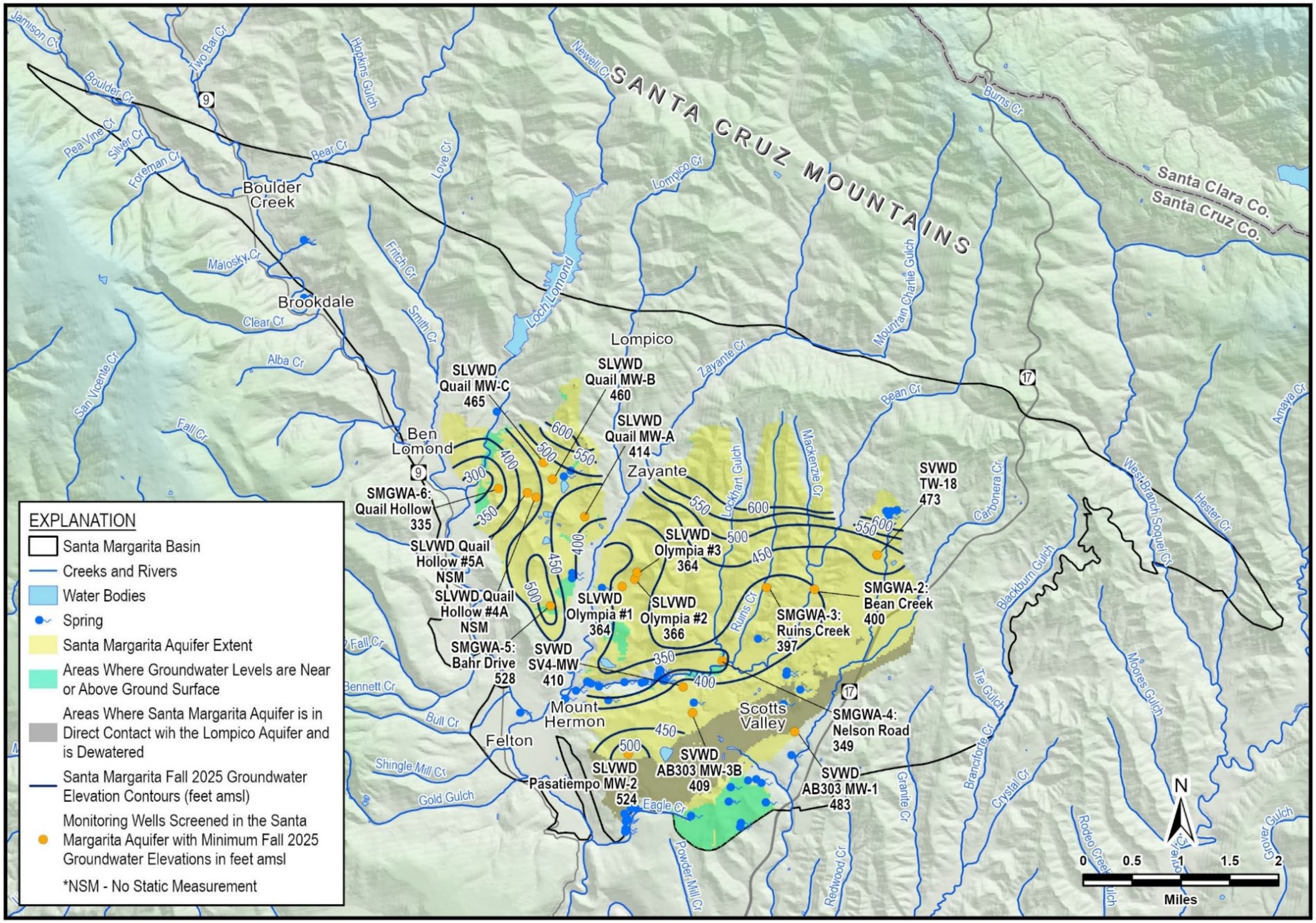


Figure 12. Santa Margarita Aquifer Groundwater Elevations and Contours, Fall 2025

2.6.2 Monterey Formation

The Monterey Formation is not considered a principal aquifer, even though it is used by some Basin residents who have low demands or no alternative water source. Only about 4% of groundwater extracted in the Basin is from the Monterey Formation. This fine-grained, relatively impermeable formation is present across much of the Basin and forms an important aquitard that separates the Santa Margarita and Lompico aquifers. Where the Monterey Formation is absent, the Santa Margarita aquifer may be dewatered due to percolation into the overdrafted Lompico aquifer directly below (Figure 2 and Figure 3). A Monterey Formation groundwater elevation contour map is not presented because it is not a principal aquifer in the Basin and monitoring data is collected at 3 locations situated in 3 distinct areas of the Basin.

SVWD Well #9, an inactive extraction well, is the only long-term monitoring well in the Monterey Formation. By the early 1990s, the groundwater elevation in the well had fallen 200 feet from pre-1980 levels due to the combination of less-than-average precipitation and increased groundwater extraction in the overlying Santa Margarita aquifer and underlying Lompico aquifer. Groundwater extraction in the area decreased during the 1990s, and, as a result, groundwater elevations in the Monterey Formation have risen by about 58 feet since 1998. Nevertheless, the groundwater elevation in SVWD Well #9 is still approximately 131 feet below the 1980 elevation (Appendix A, figure A-5) because recharge is inhibited by the low permeability of the formation. SVWD Well #9's groundwater elevation rose 4 feet in WY2025.

In WY2023, SMGWA installed 2 new monitoring wells in areas where domestic well users rely exclusively on groundwater extracted from the Monterey Formation. These additions to the monitoring network fill data gaps in areas with no historical groundwater monitoring and will be used to collect data needed to evaluate potential interconnection with streams. SMGWA-7 lies toward the northwest limits of the Basin, close to Love Creek, whereas SMGWA-8 is located near the center of the Basin in the Randall Morgan Sandhills Preserve, adjacent to Bean Creek, as shown on the Well Location Map in Appendix A. SMGWA-7 is an artesian well with a groundwater elevation above the land surface. SMGWA-8 groundwater elevation fluctuated seasonally by 1 foot in WY2025 (Appendix C, figure C-14).

2.6.3 Lompico Aquifer

The Lompico Sandstone is found throughout most of the Basin, but outcrops only along the Basin margins and in a few locations along the San Lorenzo River. The semi-confined Lompico aquifer is the primary aquifer tapped by SVWD, SLVWD, and MHA supply wells in the area south and east of Bean Creek, and accounts for approximately 56% of total groundwater extracted in the Basin (see Section 2.3). The Lompico aquifer is also an important source of baseflow to the San Lorenzo River in the few areas where it outcrops in or near the river. There is little extraction from the Lompico aquifer north of Bean Creek because it is much deeper there than south of Bean Creek; for the same reason there are no Lompico aquifer groundwater level monitoring wells north of Bean Creek.

Historical overpumping of the Lompico aquifer near Mount Hermon, Pasatiempo, and South Scotts Valley in the 1980s and 1990s caused groundwater levels to decline up to 200 feet (see SVWD Well #10's hydrograph in Appendix A, figure A-7). This lowering trend was reversed starting in the early 2000s; by 2005, groundwater levels in the Lompico aquifer stabilized, and since 2015 have risen in these areas (see SLVWD Pasatiempo #7's hydrograph in Appendix C, figure C-19). In general, groundwater levels in Lompico Aquifer wells are about 10 feet higher in WY2025 than in WY2024.

Groundwater elevations in the Lompico aquifer fluctuate little seasonally, with most wells having less than 5 feet of groundwater level decline between spring and fall, except for those close to active extraction wells. Groundwater elevation contour maps for the Lompico aquifer are shown on Figure 13 and Figure 14 for WY2025 spring and fall, respectively.

The highest groundwater elevations in the Lompico aquifer occur at the northern boundary of the Basin, where the Lompico Sandstone is exposed at the surface in a narrow strip parallel to the Zayante-Vergeles fault. This is the only area where the Lompico aquifer is recharged directly by percolation of precipitation or streamflow; elsewhere it is largely covered by younger geologic units that prevent direct recharge. The Lompico Sandstone is also exposed in small areas along the San Lorenzo River near Felton and further upstream near the communities of Ben Lomond and Boulder Creek. These areas are located downgradient, so the Lompico aquifer is a source of groundwater discharge that contributes to San Lorenzo River baseflow.

Groundwater flow in the southern portion of the Lompico aquifer is primarily controlled by municipal extraction in the South Scotts Valley area by SVWD and in the Mount Hermon/Pasatiempo area by SLVWD and MHA. Extraction in these areas has formed localized depressions in groundwater levels.

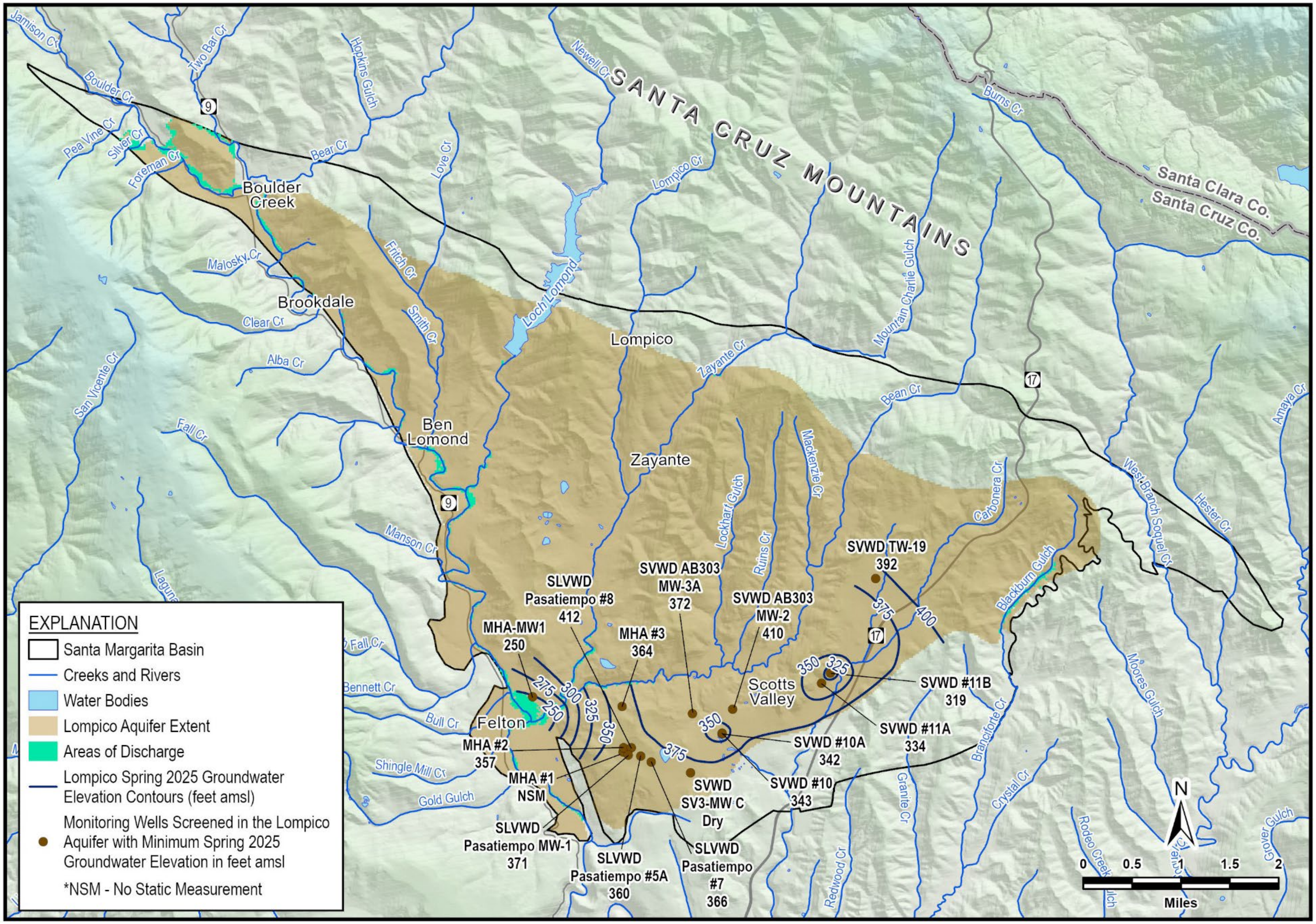


Figure 13. Lompico Aquifer Groundwater Elevations and Contours, Spring 2025

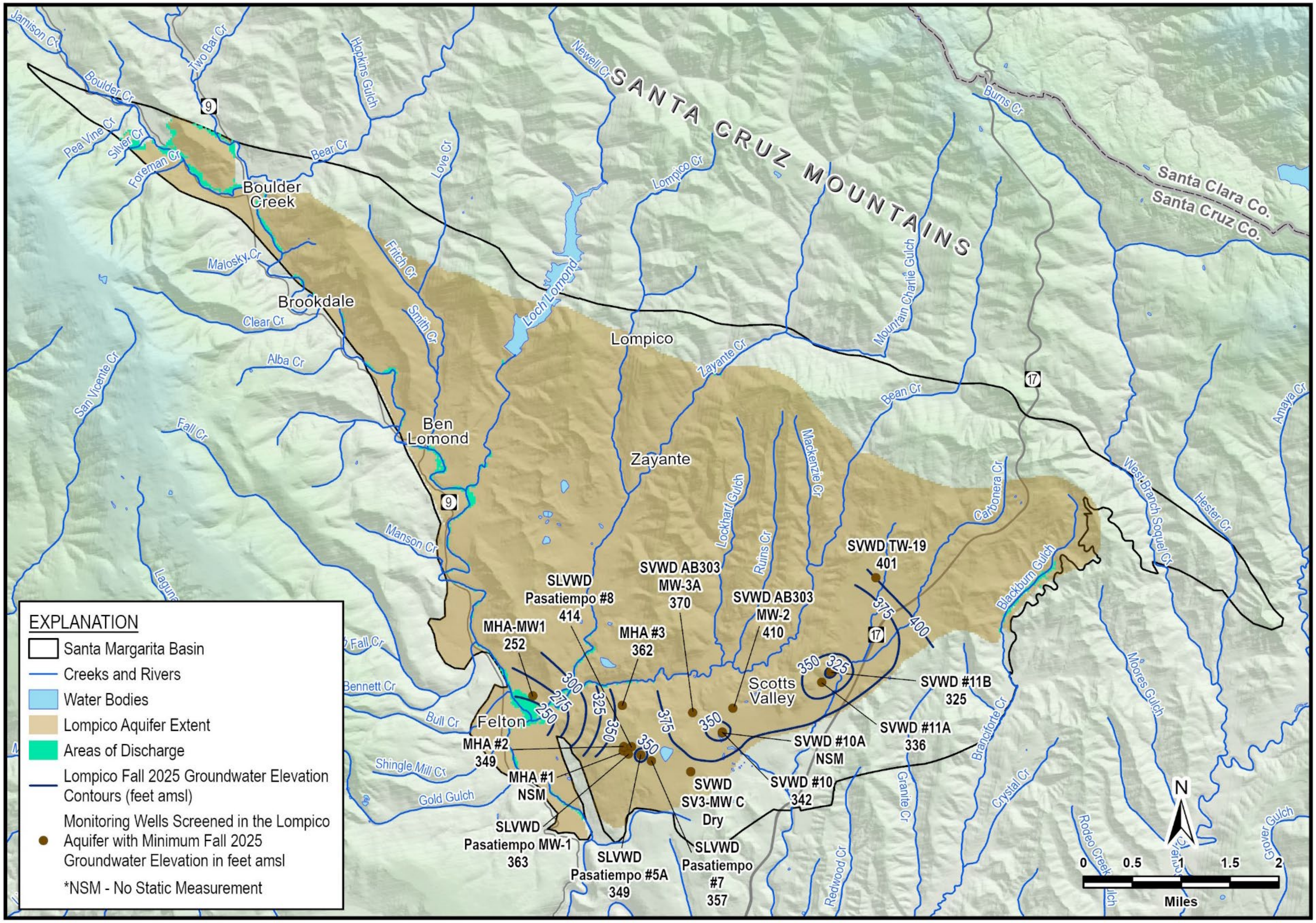


Figure 14. Lompico Aquifer Groundwater Elevations and Contours, Fall 2025

2.6.4 Butano Aquifer

The Butano Sandstone is the oldest and deepest of the 3 principal aquifers. It outcrops in the northern limb of the Scotts Valley syncline along the northern Basin boundary (Figure 2). SVWD has 2 active supply wells in the northeast portion of its service area that extract groundwater from both the Lompico and Butano aquifers and will be adding 2 more in WY2026. The Butano aquifer currently accounts for about 15% of groundwater extracted from the Basin (see Section 2.3).

Due to its great depth, there are currently only 2 dedicated monitoring wells solely in the Butano aquifer: SVWD Canham and SVWD Stonewood (Figure 15). Originally drilled as exploratory wells in search of additional water resources north of the SVWD service area, neither well encountered sizable groundwater resources so they were converted to monitoring wells. The SVWD Stonewood well is located where the Butano aquifer outcrops near the Basin's northern boundary; the Canham well lies further south and closer to municipal pumping from the Butano aquifer (Figure 15). Groundwater elevations over time in the dedicated Butano aquifer monitoring wells are decreasing slightly in the Canham well and increasing slightly in the Stonewood well (Appendix A, figures A-11 and A-12).

There have historically been 3 SVWD wells clustered in the northeastern portion of the SVWD service area that are screened in both the Lompico and Butano aquifers: the extraction wells SVWD Orchard and SVWD #3B and monitoring well SVWD #15 (Figure 15). SVWD #3B was destroyed in February 2024 and replaced with the Sucinto Well on the same parcel. Due to extraction from the Lompico/Butano supply wells, SVWD Orchard and Well #15 show more seasonal fluctuations in groundwater levels because of very close proximity to extraction wells than the dedicated Butano wells located upgradient from the municipal supply wells (Appendix A, figure A-10 and Appendix C, figure C-26). Long-term groundwater elevations in the Lompico/Butano wells have been relatively stable since the early 2000s.

Groundwater elevation contour maps for the Butano aquifer for WY2025 spring and fall are shown on Figure 15 and Figure 16, respectively. Due to continuous pumping at SVWD Orchard well for much of WY2025, static groundwater level measurements in spring and fall could not be measured. Groundwater flow in the Butano aquifer is generally north to south, mimicking the topography from the aquifer's higher elevation recharge area at the Basin's northern boundary toward the lower elevations of Scotts Valley.

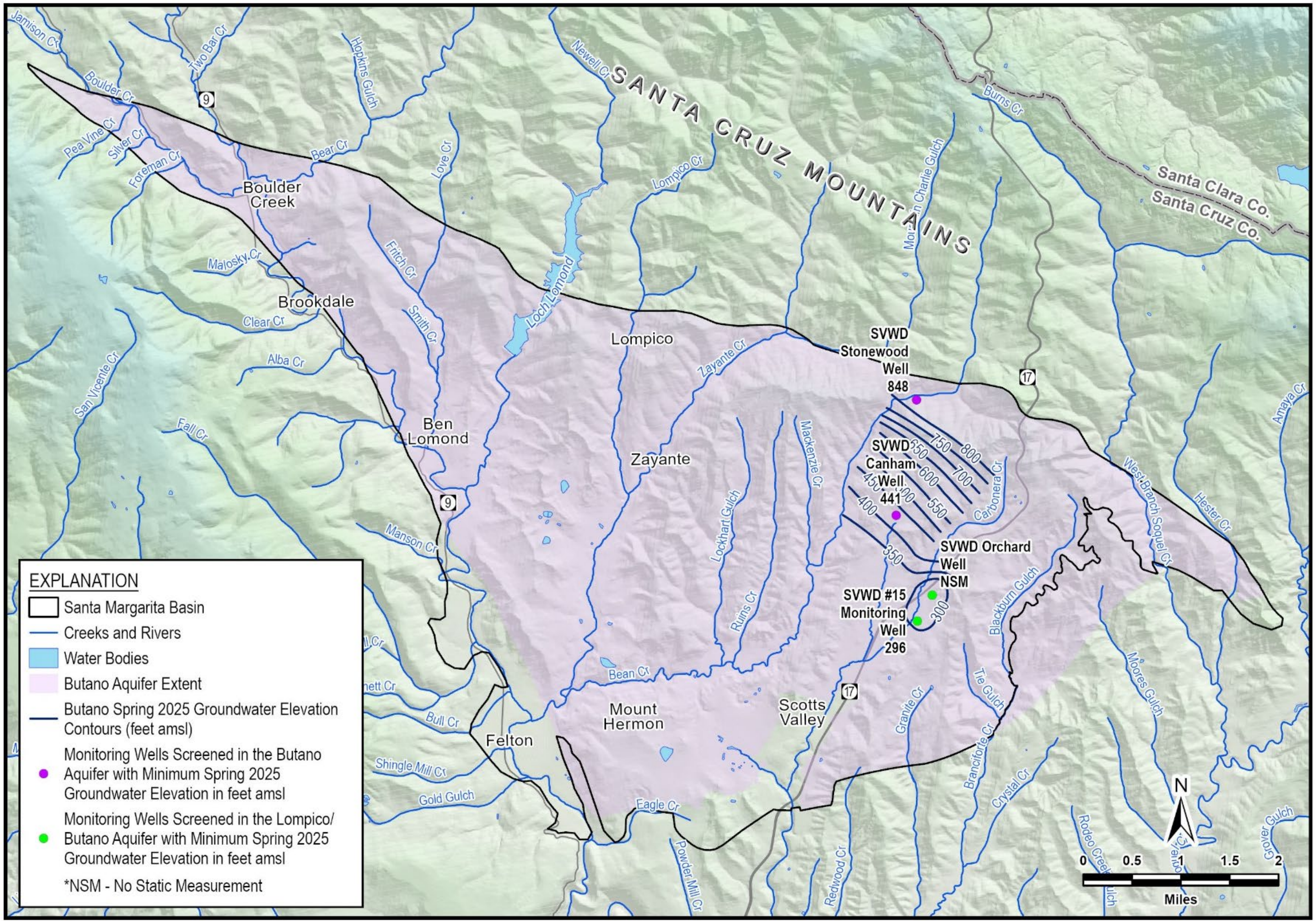


Figure 15. Butano Aquifer Groundwater Elevations and Contours, Spring 2025

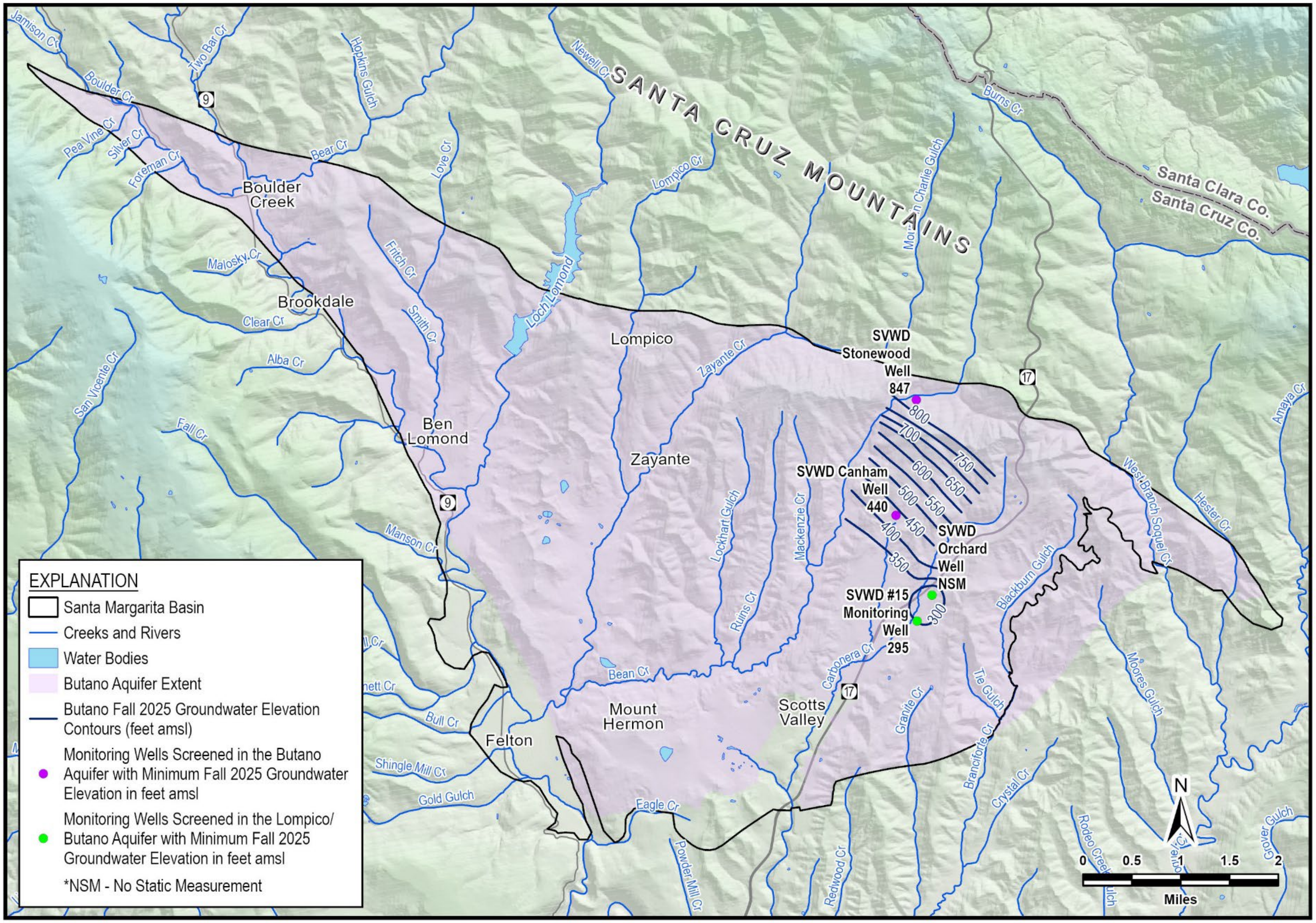


Figure 16. Butano Aquifer Groundwater Elevations and Contours, Fall 2025

2.7 Groundwater Storage Change

The change of groundwater in storage is estimated annually using the Basin Model. The Basin Model was updated with the following WY2025 data:

- Monthly precipitation and temperature data from the Parameter-elevation Regressions on Independent Slopes Model[2] (PRISM) were used to update precipitation, evapotranspiration, recharge, runoff, and streamflow
- Extraction volumes provided by SLVWD, SVWD, and MHA
- Extraction volumes by small water systems as reported to the County

Other Basin Model parameters are assumed to remain constant or are calculated by the model. Parameters that remain at 2018 baseline levels estimated in the GSP and include septic system return flows and groundwater extractions for private domestic use, quarries, and irrigation. Parameters such as surface water and groundwater interactions, stream stage, and groundwater elevations are simulated by the Basin Model.

2.7.1 Basin Groundwater Storage Change

The Basin Model calculated a net storage decrease of 1,640 AF for WY2025. Figure 17 shows the annual and cumulative change of groundwater in storage and groundwater extraction from WY1985 through WY2025.

The groundwater in storage declined because groundwater inflow was less than consumptive use and outflow. Although storage declined by about 1,640 AF, this represents relatively little change compared to the large variations of thousands of AF often observed in recent years. Change in storage is influenced by the following factors: 1) a second consecutive normal climate year classification following a cycle of high variability below and above average water years; 2) groundwater extraction close to the historical low, with WY2025 volumes only slightly above the lowest total pumping recorded since 1985, the period of record; 3) continued water use efficiency; and 4) implementation of conjunctive use practices by SLVWD.

Figure 17 shows that groundwater in storage is estimated to have decreased since 1985 by about 36,000 AF or an average of 880 AF/yr over 41 years. However, since peak Basin water use in 2001, groundwater storage losses have slowed to an average of less than 370 AF/yr, with a cumulative decrease in storage in the past 24 years of only 8,800 AF. This improvement occurred despite the known statewide and local precipitation deficit over the past 2 decades, indicating progress toward reaching Basin sustainability.

[2] https://prism.oregonstate.edu/

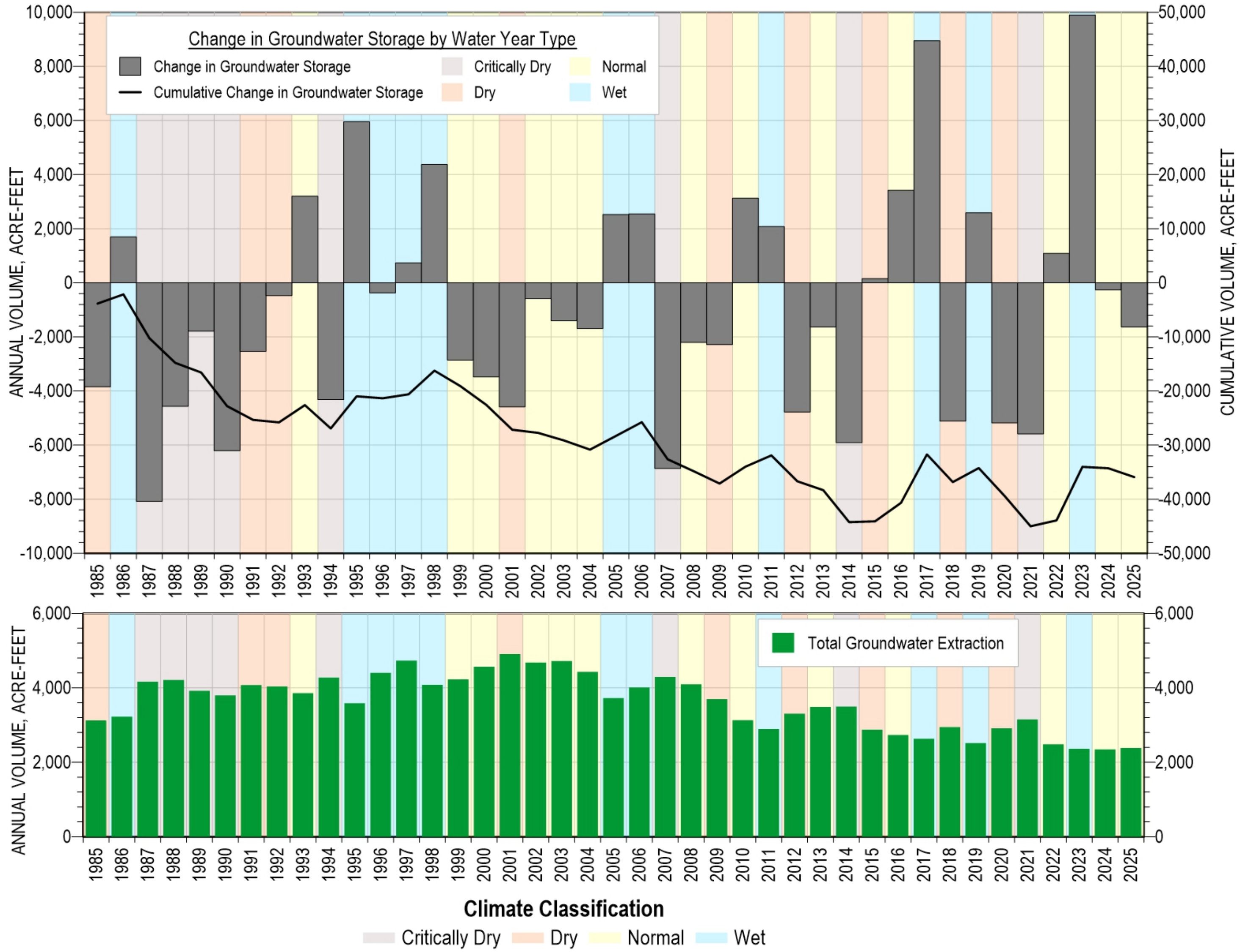


Figure 17. Annual Change in Groundwater in Storage for the Santa Margarita Basin, WY1985-2025

2.7.2 Principal Aquifer and Monterey Formation Groundwater Storage Change

Groundwater in storage decreased in WY2025 in all 3 principal aquifers and the Monterey Formation. The volume of groundwater stored in the unconfined and highly conductive Santa Margarita aquifer is strongly correlated with precipitation. Groundwater levels and groundwater storage in this aquifer decrease during dry years but rise quickly during wet years. The low permeability of the Monterey Formation prevents rapid changes due to climate, despite significant surface exposure. The Lompico and Butano aquifers are semi-confined and thus annual changes in storage are less pronounced and are more associated with groundwater extraction than precipitation. Direct recharge from precipitation and streamflow occurs in all aquifers where they are exposed at the ground surface (Figure 2), particularly near streams.

Although the Basin experienced a net decrease of about 1,640 AF in WY2025, storage across the aquifers remained relatively stable compared to the large changes observed in recent years that often sum to thousands of AF (Figure 17). The Santa Margarita aquifer experienced a decrease of 880 AF; this aquifer is the most influenced by precipitation in the Basin, and WY2025 precipitation was below average. The mostly non-productive Monterey Formation storage decreased by 140 AF. The deeper Lompico and Butano aquifers also saw a decrease as total pumping volumes slightly increased in the Lompico Aquifer, and less surface recharge occurred where these aquifers outcrop at the Basin margins. The Lompico aquifer storage decreased 150 AF in WY2025, while the Butano decreased by 470 AF. The calculated changes in storage volumes for the 3 principal aquifers plus the Monterey Formation are summarized in Table 4.

Table 4. WY2025 Modeled Change in Groundwater in Storage by Aquifer/Formation

Change in Storage (AF)	Santa Margarita	Monterey	Lompico	Butano	TOTAL
WY2025	-880	-140	-150	-470	-1,640

Maps of modeled changes in groundwater in storage between fall WY2024 and fall WY2025 show where changes in storage occurred in the Basin. Maps are shown for the Santa Margarita aquifer (Figure 18), Monterey Formation (Figure 19), Lompico aquifer (Figure 20), and Butano aquifer (Figure 21). The change in storage values of acre-feet per acre shown on the maps are the change in storage per model cell divided by the cell size (110 feet x 110 feet converted to acres). The maps show the relative differences in change in storage across the Basin for WY2025 using the following color coding:

- Green, Blue-Green, and Blue – Greater than 1 AF/acre increase in storage (only Figure 20 near SLVWD Pasatiempo #8 that was pumped less than the prior year)
- Green – Between 1 and 2 AF/acre increase in storage
- Yellow – Between 0 and 1 AF/acre increase in storage
- Orange – Between 0 and 0.1 AF/acre decrease in storage
- Red – Between 0.1 and 4.3 AF/acre decrease in storage

In viewing these maps it is important to keep in mind that they are products of calculations using the Basin Model, not measured values. The accuracy of the contour maps depends on the number of data points and the degree to which the Basin Model is calibrated for a particular aquifer and area. Given that there are few monitoring wells in the Monterey Formation and the Butano aquifer, the model is not well-calibrated for all areas of these aquifers. There are more monitoring locations in the Lompico and Santa Margarita aquifers, but there are still large areas of the Basin where there are no wells to calibrate the Lompico and Santa Margarita aquifers in the model. In addition, results for all aquifers are dependent on model inputs, such that small, calculated differences should be regarded with some skepticism in the absence of sensitivity analyses that test how the results of model simulations change with small changes to model parameters like hydraulic conductivity and storativity. Nonetheless, the model is a valuable tool for tracking relative groundwater storage changes in the Basin from year to year as an indicator of whether the Basin is on track for sustainability.

The Santa Margarita aquifer groundwater in storage decreased in most areas in WY2025 (Figure 18). Areas where wells are concentrated lost storage volume (orange and red colors) with only a small area near the Fern Grove and Karl's Dell small water systems slightly gained storage volume (yellow color).

The Monterey Formation has low permeability; therefore, changes in storage are typically smaller on an annual basis than the overlying Santa Margarita aquifer. The Monterey Formation groundwater in storage decreased slightly overall in WY2025 (Figure 19). When viewed spatially, there are areas where groundwater levels increased in the center of the Basin (yellow color) where shallow wells are installed in the Santa Margarita aquifer instead of the low-yielding Monterey Formation. The areas where groundwater in storage decreased (orange and red colors) are found around the perimeter of the Basin where the Santa Margarita Aquifer is thin or absent, and the Monterey Formation is used for water supply.

The mostly confined Lompico and Butano aquifers are less subject to storage changes in response to climate than the Santa Margarita aquifer and Monterey Formation due to their limited exposure at the surface, which restricts direct recharge. Instead, annual fluctuations in groundwater in storage are influenced mainly by groundwater extraction. The areas where

Basin Model simulations typically show the most change in storage between water years is where these units are exposed in narrow strips along the northern and western boundary of the Basin.

Most of the Lompico and Butano aquifers demonstrate either a slight increase (yellow colors) or a slight decrease in storage in WY2025 (orange colors) on Figure 20 and on Figure 21. Relatively stable groundwater level trends are observed in most areas with confined aquifer supply wells, which is consistent with the simulated storage change estimates. One well, SLVWD Pasatiempo #8 was pumped less than the prior year, reflecting a small area with larger storage increase (blue and green colors). Larger magnitude decreases in storage (red colors) were most significant around the fringes of the Basin where the aquifer is exposed at the land surface. These areas received below average natural recharge due to drier than average conditions in WY2025. The Lompico and Butano aquifers are also used as sources for private domestic pumping in the northern part of the Basin where storage decrease is noted in WY2025.

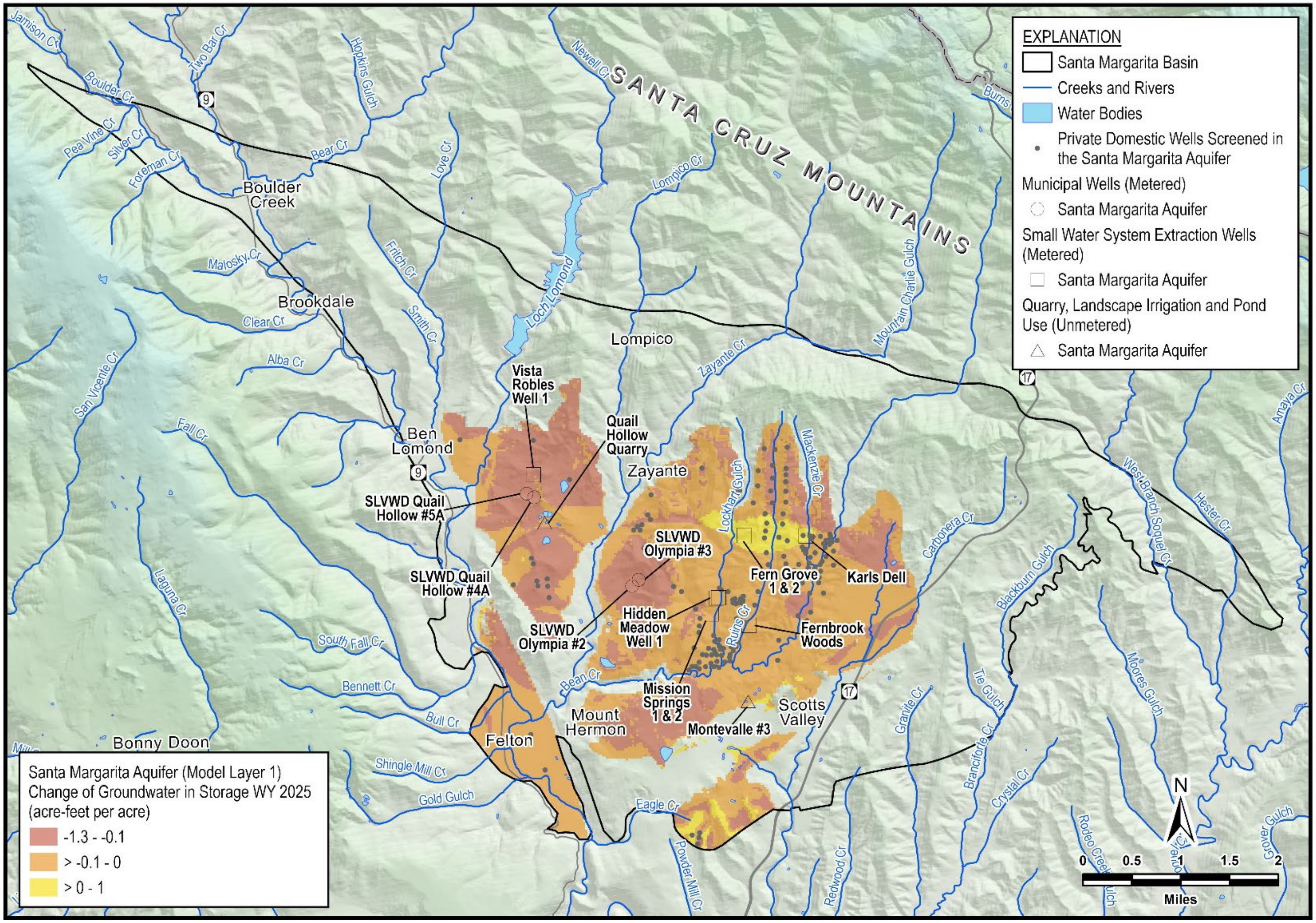


Figure 18. Change of Groundwater in Storage in Santa Margarita Aquifer, WY2025

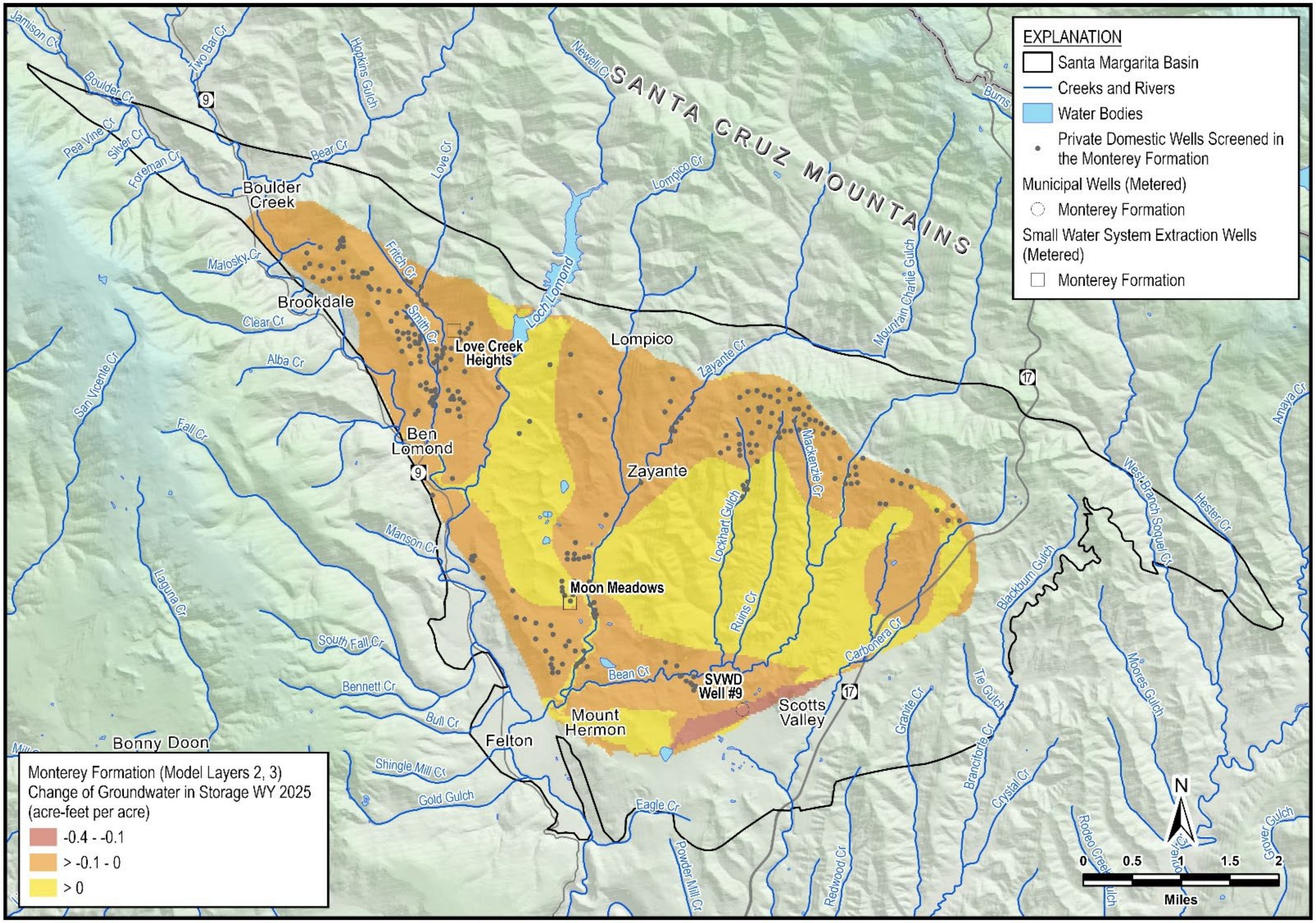


Figure 19. Change of Groundwater in Storage in Monterey Formation, WY2025

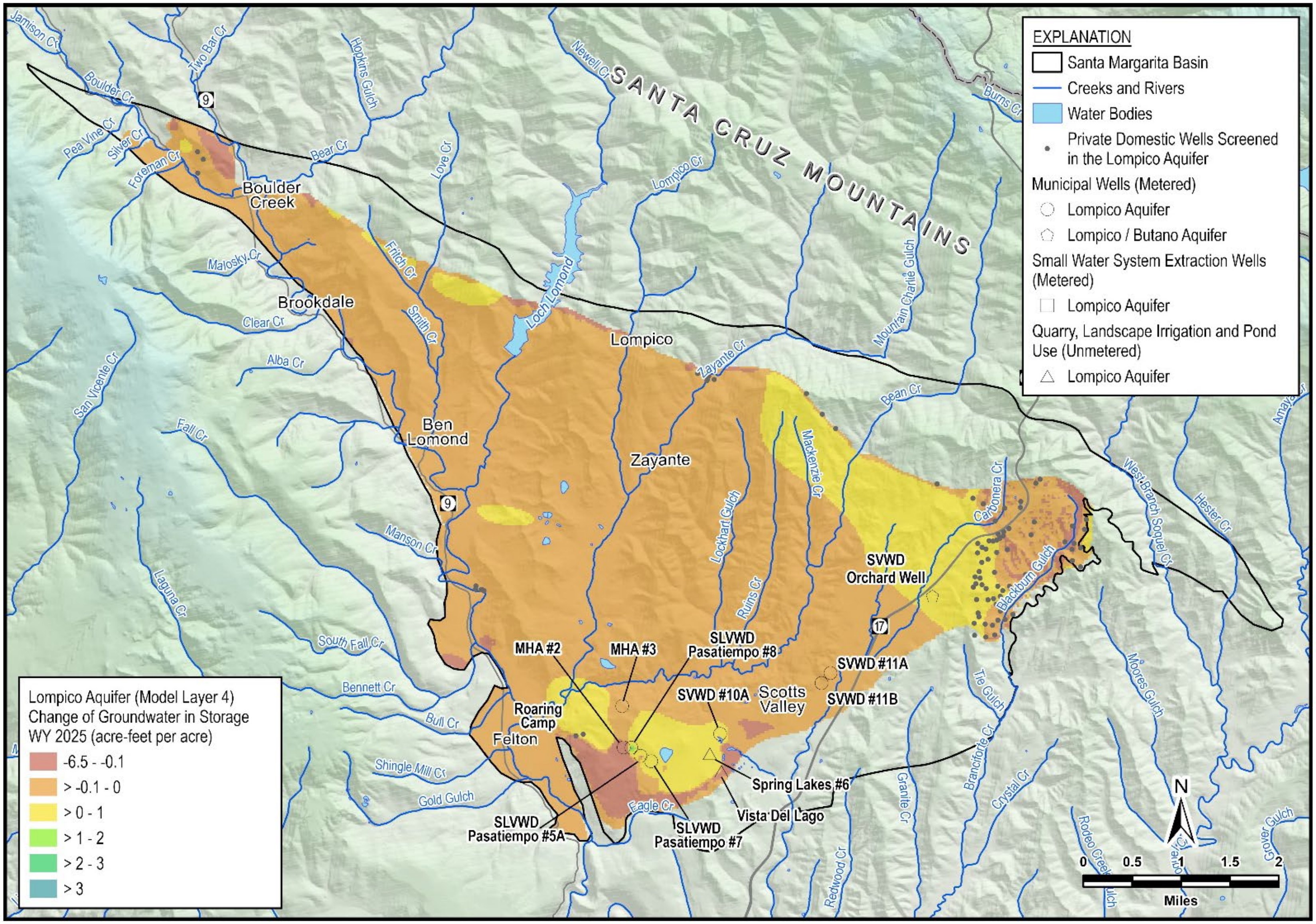


Figure 20. Change of Groundwater in Storage in Lompico Aquifer, WY2025

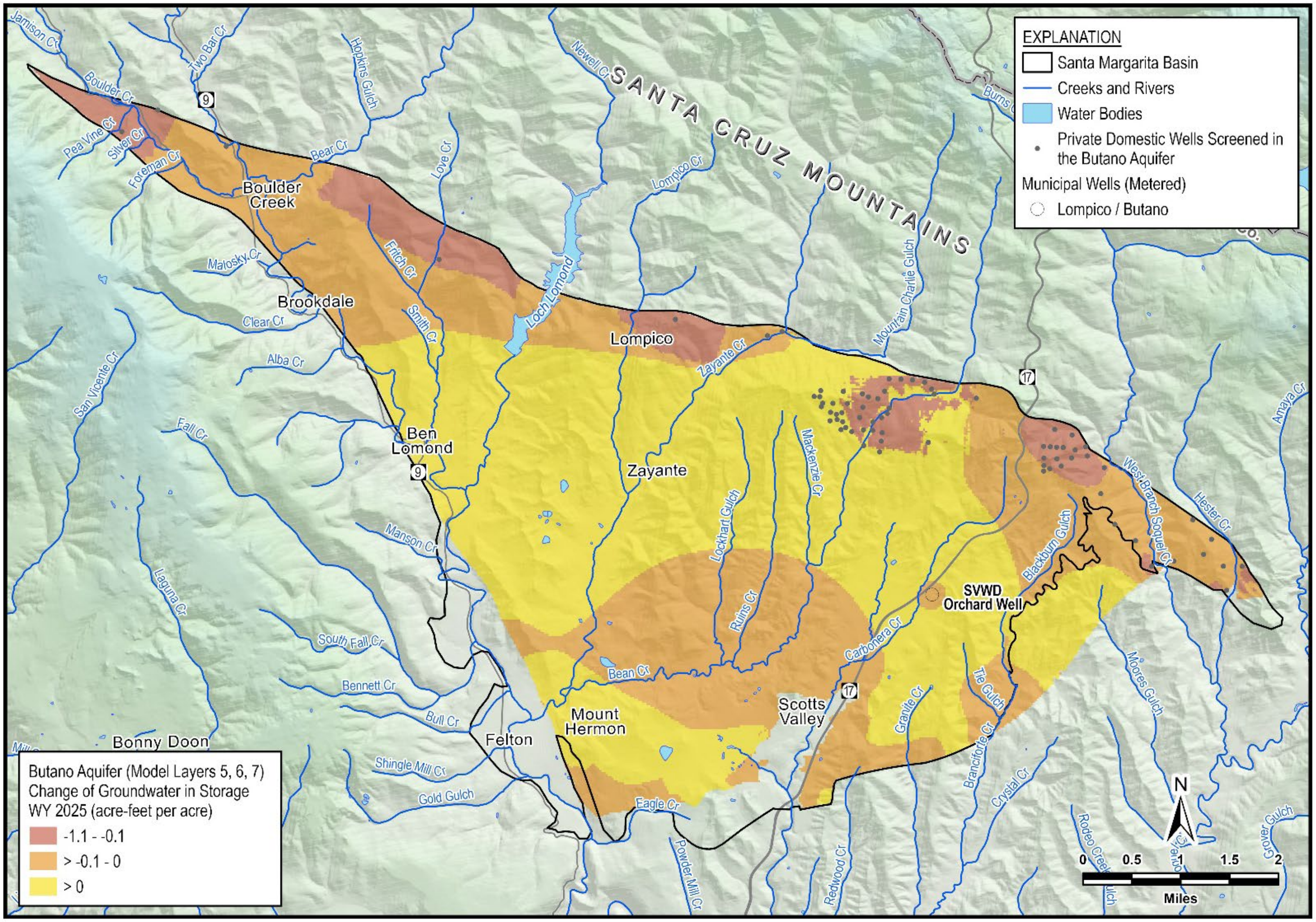


Figure 21. Change of Groundwater in Storage in Butano Aquifer, WY2025

3 PROGRESS TOWARD IMPLEMENTING THE GSP

This section provides an update on the progress made in WY2025 on GSP implementation activities. The following sections summarize: (1) highlights of progress on projects and management actions as the primary activities for long-term sustainability in the Basin; and (2) the status of addressing corrective actions from the DWR GSP approval determination.

3.1 Projects and Management Actions Overview

The Basin GSP identified 3 groups of projects and management actions based on the following classifications:

- Group 1 – projects and management actions that were being implemented prior to adoption of the GSP
- Group 2 – projects and management actions that have not been implemented yet, but are the most likely options to be pursued during GSP implementation. Group 2 projects are further classified into the following tiers:
  - Tier 1: projects that rely on existing water sources from within the Basin
  - Tier 2: projects that rely on existing sources from outside the Basin
  - Tier 3: projects that rely on purified wastewater
- Group 3 – additional conceptual projects and management actions that may be evaluated in the future if Group 1 and 2 projects are not feasible or do not achieve sustainability.

Implementation of Group 1 and Group 2, Tier 1 projects are expected to result in meeting Basin SMC based on modeled simulations during GSP development. Group 3 will be evaluated as necessary and discussed in future annual reports or the 5-year GSP periodic evaluation, but they are not discussed further in this WY2025 Annual Report. The status of Group 1 and Group 2 projects and management actions are further described below.

3.1.1 Existing Projects and Management Actions (Group 1)

This section summarizes the existing projects and management actions already being implemented in the Basin.

3.1.1.1 Water Use Efficiency

While Water Use Efficiency is characterized as a Group 1 and a Group 2, Tier 1 project in the Basin GSP, its discussion is combined into a single update for the Annual Report. SLVWD and SVWD continued to implement water efficiency programs focused on outreach, education, customer rebates, and water system improvements.

Both SLVWD and SVWD maintain an active social media outreach campaign for customers by posting seasonally appropriate water efficiency tips on a nearly weekly basis on Facebook, Instagram, and Nextdoor. SLVWD also uses the X (twitter.com) platform. Both agencies also provide an opportunity for customers to better educate themselves about their water use. SVWD provides the WaterSmart platform and SLVWD offers the Eye on Water platform for customers to get detailed information about their water use; SVWD has 3,141 current customers signed up and SLVWD has 1,115 customers signed up.

SLVWD and SVWD continued to offer rebates to encourage customer improvements to increase water use efficiency. In WY2025, SLVWD issued 9 clothes washer rebates, 16 toilet rebates, and 2 irrigation controllers, resulting in an estimated savings of 0.64 AF/yr (or 208,545 GPY). SVWD issued 8 rebates for turf replacement resulting in an estimated 0.42 AF/yr (137,054 GPY) savings, and additional 9 rebates for toilet and smart irrigation controller replacements saving an additional 0.02 AF/yr (7,118 GPY) for a total of 0.44 AF/yr (144,172 GPY). The volume of savings will continue to accrue throughout WY2026.

While outreach, education, and rebate programs increase awareness and efficiency on the customer side, SLVWD and SVWD also focus on improving efficiency within their respective distribution systems through upgrades to metering infrastructure, reduction of non-revenue water, and evaluation of system pressure. New metering infrastructure allows for increased accuracy, leak detection, and improved customer accountability. In 2016, SLVWD began deploying a multi-year, system-wide meter change-out program that has upgraded 50% of meters through WY2025. SLVWD received a grant in 2024 to upgrade an additional 440 of its meters in 2026.

3.1.1.2 SVWD Low Impact Development (LID) Projects

SVWD monitors 3 LID facilities that were constructed prior to the passage of SGMA. Stormwater captured in WY2025 at the 3 LID facilities measured 23.8 AF. In addition to the existing LID facilities, SVWD completed an expansion of the Transit Center LID project that is expected to contribute approximately 7 AF/yr of additional stormwater recharge to the Santa Margarita aquifer. The expansion project was supported by a 2022 Urban Community Drought Relief grant from DWR.

3.1.1.3 SVWD Recycled Water Program

The SVWD Recycled Water Program is a cooperative effort between SVWD and the City of Scotts Valley. Recycled water is produced at the City of Scotts Valley Tertiary Wastewater Treatment Plant, where it undergoes nitrate removal, ultra-violet disinfection, and chlorination. Recycled water is then distributed by SVWD to customers through a dedicated system. Recycled water is used mostly for landscape irrigation and to a lesser extent for dust control. SVWD continues to explore options to maximize the beneficial use of recycled water.

Figure 22 shows recycled water use since it was made available to SVWD customers in 2002. SVWD distributed 168.6 AF of recycled water in WY2025, which was consistent with recycled water use in other normal years. In total, 3,500 AF of recycled water has been used in-lieu of groundwater pumping since the program started.

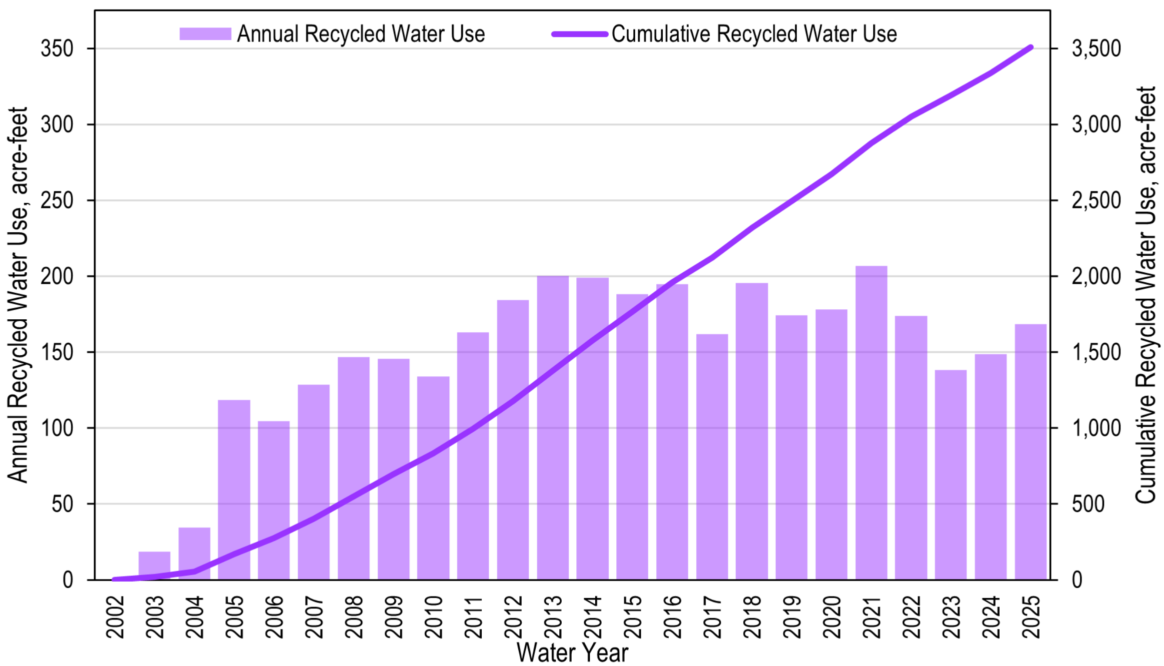


Figure 22. Recycled Water Use by SVWD Customers, WY2002-2025

3.1.1.4 SLVWD Conjunctive Use

The SLVWD owns, operates, and maintains 2 water systems that supply different water sources to distinct areas in the Basin: the San Lorenzo Valley System, comprised of the connected North and South distribution systems; and the Felton System, which serves the community of Felton and surrounding areas in the southern portion of the Basin (Figure 23). The North System conjunctively uses surface water and groundwater from the Quail Hollow and Olympia wellfields, the South System uses groundwater extracted from wells in the

Pasatiempo area, and the Felton System only uses surface water. The Felton System is connected to the San Lorenzo Valley System by an intertie that is only for emergency use. The intertie has been in use intermittently since 2020 due to the emergency conditions created by the extensive damage to the North System surface water infrastructure in the CZU wildfire.

A successful conjunctive use program has been implemented by SLVWD in their North System for decades. In the North System, the SLVWD optimizes the use of surface water and groundwater by using stream flows while they are high and groundwater when stream flows are low. The conjunctive use of these sources has met annual water demands since 1984, without a substantial decline in groundwater levels. On average, the North System obtains 55% of its water supply from stream diversions and 45% from groundwater extraction. In WY2025, SLVWD once again implemented its ongoing conjunctive use program in the North System, and emergency conjunctive use of the Felton System instituted after the 2020 CZU fire. For the period, SLVWD used 58% surface water and 42% groundwater in the North System. As discussed in Section 2.4.1, this represents a conservative estimated benefit of conjunctive use in WY2025 of 29 AF of in-lieu groundwater recharge in the North System. In WY2025, 254 AF of surface water was transferred from the Felton system to the San Lorenzo Valley system. This surface water displaced an equivalent volume of water that would otherwise have been extracted from wells in the SLVWD system.

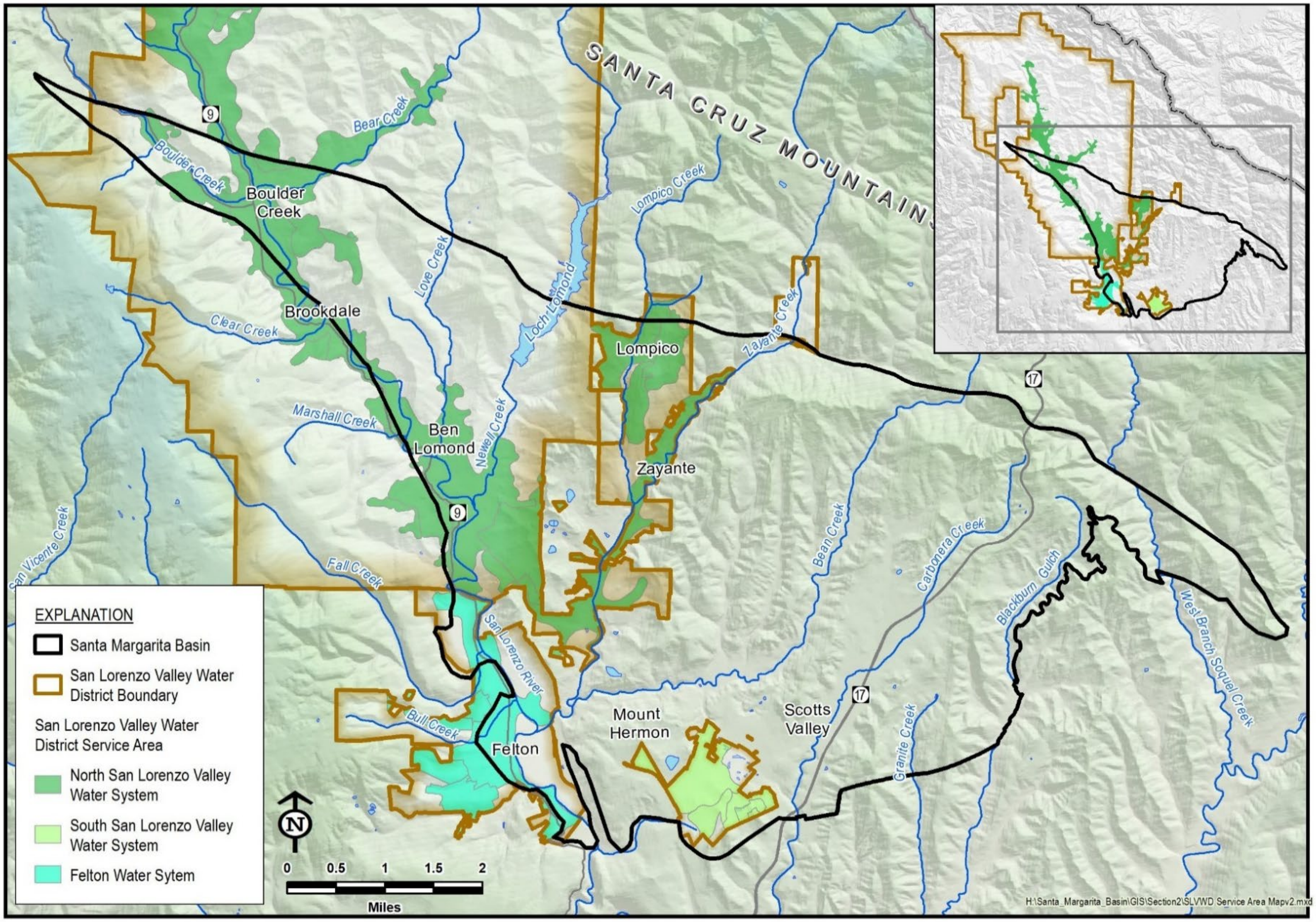


Figure 23. San Lorenzo Valley Water District Systems

3.1.2 Projects and Management Actions Using Existing Water Sources Within the Basin (Group 2, Tier 1)

Group 2, Tier 1 projects and management actions identified in the GSP focus on expansion of conjunctive use in the Basin using existing water sources within the Basin. The amount of surface water available for expanded conjunctive use is a function of factors such as annual precipitation, required minimum bypass flows for fish, the capacity of drinking water treatment facilities, and water rights restrictions on place-of-use.

Expanding SLVWD conjunctive use will involve 2 phases with different sources, conveyance infrastructure, and regulatory frameworks:

Phase 1 of Expanded Conjunctive Use: Surface water from existing diversion points in SLVWD's Felton and North Systems is available for expanded conjunctive use in the South System and can be conveyed with minimal modifications to existing infrastructure to other areas of the Basin where surface water is not currently used.

There is on average an estimated 227 AF/yr of additional surface water from SLVWD's North and Felton Systems available for expanded conjunctive use in the South System or other parts of the Basin. This estimated additional surface water amount would be refined with future analysis.

Phase 2 of Expanded Conjunctive Use: SLVWD's contractual allocation of 313 AF/yr of raw water from Loch Lomond reservoir is currently unused. This water could be available for conjunctive use in the Basin with improvements to water treatment and conveyance infrastructure, subject to completion of environmental compliance permitting and any necessary agreements with SCWD.

Expanded conjunctive use of water sources in the Basin requires modifications to SLVWD's water rights regarding place-of-use to allow SLVWD to use surface water from the Felton System throughout its service area, and to convey water to SVWD on a non-emergency basis. Work associated with Phase 1 and Phase 2 expansion continued in WY2025 and will continue into WY2026.

3.1.3 Projects and Management Actions Using Surface Water Sources Outside the Basin (Group 2, Tier 2)

Group 2, Tier 2 projects rely on water sources from outside the Basin. While not specifically identified as needed to meet the Basin's SMC, they can help reduce uncertainty associated with unknown future climate conditions or can supplement Group 2, Tier 1 projects if they are not fully implemented as envisioned. One current alternative in the planning stage is the use of treated surface water provided by SCWD from its San Lorenzo River and North Coast sources when additional surface water is available.

As an example, SVWD was awarded a 2021 Urban and Multibenefit Drought Relief grant for $9.5 million to implement a Regional Drought Resiliency Project. The project, anticipated to be completed by early 2026, includes the design and construction of 2 critical pieces of infrastructure to improve drought resiliency for SVWD and SCWD:

- A 12-inch-diameter, bi-directional, 1 million gallon per day intertie pipeline and pump station between the SCWD and SVWD distribution systems to facilitate transfers of water in droughts or other emergencies
- A new extraction well in SVWD (Grace Way) to replace aging wells, increase extraction capacity, strengthen SVWD's ability to provide redundancy and meet potential increased demand, and to supply water to neighboring agencies in drought conditions

Together, the 2 new infrastructure elements create an opportunity to increase groundwater stored in the Basin for beneficial use. In WY2024, design was completed and an agreement with a contractor was approved for the construction of the pipeline component. In WY2025, intertie was completed and the associated pump station for the intertie and the well will be completed in WY2026. SVWD and SCWD are also working on an Operational Agreement for the project.

3.2 GSP Recommended Corrective Actions

On April 27, 2023, DWR issued an approval determination for the Basin GSP. The approval included 4 recommended corrective actions. The recommended corrective actions, the GSA initial approach to addressing them, and a timeline for completion are shown in Table 5. In general, SMGWA believes that recommendations to modify SMC will require a GSP amendment with the required periodic evaluation due by January 3, 2027. SMGWA will meet with DWR in early 2026 to discuss approaches for addressing the recommended corrective actions.

Table 5. DWR Recommended Corrective Actions

DWR Recommended Corrective Action Number and Topic	DWR Recommended Corrective Action	GSA Initial Approach for Addressing Recommended Corrective Action	Timeline to Complete or Evaluate
1 – Evaluate impacts to domestic and Groundwater Dependent Ecosystems (GDEs) in Monterey Formation	Evaluate beneficial use and users of the Monterey Formation and consider how changes in groundwater levels in the Monterey Formation may affect domestic well users and GDEs.	Review locations and extent of beneficial users relative to groundwater level minimum threshold and measurable objectives	Address during Periodic Evaluation in 2026
2 – Revise undesirable results definition for chronic lowering of groundwater levels	Revise the definition of undesirable results to remove the drought year condition or discuss how extractions and recharge will be managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods within the sustainable management criteria (SMC) for chronic lowering of groundwater levels.	Evaluate alternative undesirable result definitions as part of the periodic evaluation	Address during Periodic Evaluation in 2026
3 – Revise SMC for degraded groundwater quality	Revise SMC for degraded groundwater quality: • Revise the definition of undesirable results for degraded groundwater quality so that exceedances of minimum thresholds caused by groundwater extraction—whether or not the GSA has implemented pumping regulations—are considered in the assessment of undesirable results in the Basin. • Revise the sustainable management criteria for degraded water quality to include undesirable results for constituents of concern in the basin identified in the GSP.	Evaluate alternative undesirable result definitions as part of the periodic evaluation	Address during Periodic Evaluation in 2026
4 – Evaluate interconnected surface water sustainable management criteria	Address the following items by the first periodic evaluation: • Revise sustainable management criteria with the removal of the exemption for undesirable results in drought years. • Consider using the interconnected surface water guidance as appropriate when issued by DWR to establish quantifiable minimum thresholds, measurable objectives, and management actions. • Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to manage depletions of interconnected surface water and define segments of interconnectivity and timing. • Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping-induced surface-water depletion within the GSA's jurisdictional area.	Establish sustainable management criteria for applicable new wells installed in 2023 and consider utilizing upcoming DWR guidance to revise approach as part of the periodic evaluation	Partially addressed with 2023 well installations; remainder will be Addressed during Periodic Evaluation in 2026

4 SUSTAINABLE MANAGEMENT CRITERIA EVALUATION

SGMA requires the use of SMC as a means of demonstrating that a groundwater basin is being sustainably managed. This section presents the SMC definitions developed for the Basin GSP followed by an assessment of the status of each of the 4 applicable sustainability indicators. The WY2025 SMC evaluation indicates that the Basin continues to make progress on its path toward long-term sustainability.

The SMC start with a locally defined sustainability goal, which for this Basin includes the following:

- Implement the SGMA, which requires the management and use of groundwater in the Basin in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.
- Provide a safe and reliable groundwater supply that meets the current and future needs of beneficial users.
- Support groundwater sustainability measures and projects that enhance a sustainable and reliable groundwater supply in the Basin, using integrated water management principles by:
    - Safeguarding water supply availability for public health and welfare
    - Maintaining and enhancing groundwater availability for municipal, private, and industrial users and uses
    - Maintaining and enhancing groundwater contributions to streamflow, where beneficial users are dependent upon such contributions (fish, frogs, salamanders, dragonflies, etc.)
    - Maintaining and enhancing groundwater levels that support GDEs
    - Maintaining and enhancing groundwater quality for existing and future beneficial uses
- Provide for operational flexibility within the Basin by supporting a drought supply reserve that takes into account future climate change.
- Plan and implement projects and activities to achieve sustainability that are cost effective and do not place undue financial hardship on the SMGWA, its cooperating agencies, or basin stakeholders. A cost-benefit analysis—taking into consideration financial, social, environmental—and adverse consequences, may be conducted to evaluate whether a project or activity results in undue financial hardship.

To demonstrate that the sustainability goal is being met, SGMA requires a set of locally defined sustainability indicators to be used as metrics to determine if the Basin is experiencing undesirable results. The applicable Basin GSP sustainability indicators and definitions of undesirable results are shown in Table 6. Each sustainability indicator, and its status through WY2025, is discussed further below.

Table 6. Undesireable Result Definitions for Sustainability Indicators in the Basin

Sustainability Indicator	Undesirable Result Definition
Chronic lowering of groundwater levels	Groundwater elevation in any RMP falls below the minimum threshold in 2 or more consecutive non-drought years. If an RMP groundwater elevation below its minimum threshold is caused by emergency operational issues or extended droughts, it is not considered an undesirable result.
Reduction of groundwater in storage	Groundwater extraction volumes that exceed the reduction in groundwater storage minimum thresholds in 1 or multiple principal aquifers
Degraded water quality	Degraded groundwater quality minimum thresholds are exceeded at RMPs where: • Minimum thresholds have not been exceeded prior to SMGWA approved project(s) or management action(s) • An immediate resampling confirms the exceedance • The exceedance is caused by SMGWA approved project(s) or management action(s)
Depletion of interconnected surface water	Groundwater level in any RMP falls below the minimum threshold in 2 or more consecutive non-drought years. If an RMP groundwater level below its minimum threshold is caused by emergency operational issues or extended droughts, it is not considered an undesirable result.

4.1 Chronic Lowering of Groundwater Levels

Annual groundwater elevations are reviewed in this section to assess whether they remain within the target operational range between the MT and MO, and if they are on track to meet the 2027 interim milestone. There are 12 RMPs used to evaluate chronic lowering of groundwater levels relative to SMC. Table 7 shows the annual minimum groundwater elevation at each RMP since WY2020, relative to the RMP's MT, MO, and the 2027 interim milestone. Hydrographs in Appendix A show historical data collected at RMPs relative to MTs and MOs.

Groundwater elevations were stable or increasing in 9 of 12 RMPs and decreasing in 3 of 12 RMPs as compared to fall measurements from fall in WY2024; 11 of 12 RMPs are at or above their respective MTs. In addition, the 2027 interim milestone is met for 8 RMPs (green and yellow colors in Table 7), 7 of which also meet MOs (green color in Table 7), indicating groundwater levels are already sustainable in many areas. One well that slightly exceeded its MT is SVWD #15. However, this is not an undesirable result in the Basin as an MT exceedance must occur in 2 consecutive years (Table 6). SMGWA will continue to monitor this condition in WY2026 and will consider this in its Basin GSP Periodic Evaluation.

4.1.1 Santa Margarita Aquifer

There are 4 Santa Margarita aquifer RMPs:

- Quail Hollow area: SLVWD Quail MW-B
- Olympia and Mission Springs area: SLVWD Olympia #3
- Mount Hermon/Pasatiempo/South Scotts Valley area: SLVWD Pasatiempo MW-2
- North Scotts Valley: SVWD TW-18

In WY2025, groundwater elevations remained relatively stable compared to the prior water year, and are within the target operational range (Table 7):

- One Santa Margarita aquifer RMP is below 2027 interim milestone: SLVWD Quail MW-B
- Three Santa Margarita aquifer RMPs are above MOs: SLVWD Olympia #3, SLVWD Pasatiempo MW-2, and SVWD TW-18

Groundwater elevations in parts of the Santa Margarita aquifer were relatively low in fall WY2022 after 3 consecutive dry years but have since rebounded with wetter conditions in WY2023 and generally remained stable through WY2025 (Appendix A, figures A-1 through A-3). Groundwater elevations in the North Scotts Valley area at SVWD TW-18 have been stable and close to or above the MO since 2000 (Appendix A, figure A-4).

4.1.2 Monterey Formation

The only Monterey Formation RMP is SVWD Well #9 in the South Scotts Valley area. This well has a long-term increasing groundwater elevation trend (Appendix A, figure A-5). In WY2024, groundwater elevations increased above the MO and continued to rise in WY2025 (Table 7).

4.1.3 Lompico Aquifer

There are 4 Lompico aquifer RMPs:

- Mount Hermon / Pasatiempo area: SLVWD Pasatiempo MW-1
- South Scotts Valley: SVWD Well #10
- Central Scotts Valley: SVWD Well #11A
- North Scotts Valley: SVWD TW-19

Groundwater elevations increased or remained stable in Lompico aquifer RMPs in WY2025 relative to the prior water year and are within the target operational range (Table 7). There are no MT exceedances in the Lompico aquifer RMPs. The aspirational 2027 interim milestone and MO values were chosen based on the modeled benefits of a hypothetical 540 AF/yr conjunctive use project that has yet to be defined and implemented. Even so, due to continued conservation and efficiency, 3 of the 4 RMPs already met their MOs in WY2023 (SVWD Well #10, SVWD Well #11A, and SVWD TW-19 as shown on Appendix A, figures A-7 through A-9). The only well that does not currently meet the MO, SLVWD Pasatiempo MW-1, met the 2027 interim milestone and has an increasing groundwater elevation trend since WY2023 with a notable rise of more than 17 feet between the lowest levels in WY2024 and WY2025 (Appendix A, figure A-6).

4.1.4 Lompico/Butano Aquifer

SVWD #15 monitoring well in the Northern Scotts Valley area is the only RMP screened in both the Lompico and Butano aquifers. This well is located near the Lompico/Butano SVWD Orchard supply well. Groundwater elevations in SVWD #15 fluctuate seasonally, with spring levels frequently higher than the MO and fall levels below the 2027 interim milestone (Appendix A, figure A-10). Groundwater level data collected by the transducer is highly influenced by extraction at nearby SVWD Orchard. Because of almost year-round pumping at SVWD Orchard, only hand measurements at SVWD #15 can be collected when SVWD Orchard is not pumping. These limited static levels are used to compare to the SMC. The minimum static groundwater elevation at SVWD #15 in WY2025 was approximately 290.6 feet above mean sea level (amsl), which was just below the 291 feet amsl MT and is below the 2027 interim milestone. Like Lompico aquifer wells, the chosen 2027 interim milestone and MO are aspirational, based on the modeled effects of a hypothetical 540 AF/yr conjunctive use project.

4.1.5 Butano Aquifer

Two Butano aquifer RMPs, SVWD Stonewood and SVWD Canham, are located in the Northern Scotts Valley area upgradient of the Orchard well. There is a slight increasing groundwater elevation trend at SVWD Stonewood and a slight decreasing trend at SVWD Canham in recent years (Appendix A, figures A-11 and A-12). In WY2025, groundwater elevations are within the target operational range for both wells (Table 7). SVWD Stonewood is above the 2027 interim milestone and MO and SVWD Canham is below the 2027 interim milestone and MO. The 2027 interim milestone and MO are aspirational goals based on a hypothetical conjunctive use project that has yet to be implemented and are higher than any groundwater elevations measured in the Canham well since monitoring began in 2011.

MONTGOMERY & ASSOCIATES

Table 7. Groundwater Elevations Compared to Chronic Lowering of Groundwater Levels Sustainable Management Criteria, WY2021-2025

Aquifer	Well Name	Minimum Threshold	Interim Milestone #1 (2027)	Measurable Objective	Annual Minimum Groundwater Elevation (feet amsl)				
					WY2021*	WY2022	WY2023	WY2024	WY2025
Water Year Type					**Critically Dry**	**Normal**	**Wet**	**Normal**	**Normal**
Santa Margarita	SLVWD Quail MW-B	449	472	472	455.8	451.8	451.0	458.4	458.6
	SLVWD Olympia #3	302	307	307	335.9	330.1	327.3	354.5	359.7
	SLVWD Pasatiempo MW-2	498	514	514	512.7	516.3	516.2	528.1	523.6
	SVWD TW-18	462	471	471	471.8	470.9	470.4	470.1	471.2
Monterey	SVWD #9	301	340	358	351.0	354.0	356.0	360.6	365.1
Lompico	SLVWD Pasatiempo MW-1	334	339	372	340.4	335.4	337.0	343.9	361.5
	SVWD #10	286	302	322	330.3	338.1	338.7	337.2	342.0
	SVWD #11A	288	299	317	308.0	312.6	320.2	324.7	333.7
	SVWD TW-19	314	357	376	370.4	370.0	378.4	378.1	389.3
Lompico/Butano	SVWD #15 Monitoring Well	291	310	333	307.1	307.9	306.5	307.2	290.6
Butano	SVWD Stonewood Well	836	844	844	845.0	845.8	847.6	847.7	847.4
	SVWD Canham Well	427	447	467	441.7	441.2	440.7	441.0	440.4

* Damage to SLVWD surface water intakes caused by the August 2020 CZU Wildfire caused groundwater extraction to increase and groundwater levels to decline in some areas of the Basin.
amsl – above mean sea level

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

4.2 Reduction of Groundwater in Storage

The reduction of groundwater in storage SMC are annual groundwater extraction volumes for the principal aquifers and Monterey Formation. Groundwater sustainable yield estimates are developed using a groundwater model baseline projection that includes climate change. The MTs are related to groundwater extraction volumes predicted without implementation of additional projects or management actions, and the MOs are related to groundwater extraction volumes calculated assuming implementation of a hypothetical 540 AF/year conjunctive use project. The 2027 interim milestones are equal to the MT through 2027 and thereafter are equal to the MO through 2042. Table 8 summarizes WY2025 groundwater extraction from each aquifer relative to MTs and MOs.

WY2025 groundwater extraction is within the operational range between the MT and MO in for the total Basin. The total extraction from each aquifer and formation is less than the MT, except for the Lompico aquifer, where extraction was 46 AF greater than the MT. By definition in the GSP, this indicates that the Basin experienced an undesirable result in WY2025. However, this condition is not expected to continue as the new SVWD Sucinto and Grace Way wells come on-line in WY2026. These wells will draw water from both the Lompico and Butano aquifers. This will effectively reduce Lompico aquifer extraction to less than its MT and increase extraction from the Butano aquifer. Note in Table 8 below that there is sufficient capacity on the Butano aquifer for this operational change.

Table 8. Groundwater Extractions Compared to Reduction in Groundwater in Storage Sustainable Management Criteria, WY2025

Aquifer	Groundwater Extraction, AF/year		
	Minimum Threshold*	Measurable Objective	WY2025
Santa Margarita	850	615	578
Monterey	140	130	91
Lompico**	1,290	1,000	1,336
Butano**	540	380	347
TOTAL	**2,820**	**2,125**	**2,352**

*The first interim milestone in 2027 is equal to the minimum threshold.
**In WY2025, SVWD had 2 wells that extracted groundwater exclusively from the Lompico aquifer and 1 well that extracted from both the Lompico and Butano aquifers. For the SVWD extraction well screened in both aquifers, it is estimated that 40% of the water is from the Lompico aquifer and 60% is from the Butano aquifer.

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

4.3 Degraded Water Quality

Groundwater in the Basin is generally of good quality and meets primary drinking water standards. However, both naturally occurring and anthropogenic groundwater quality constituents of concern are present in some aquifers and areas. Iron and manganese are the only naturally occurring groundwater quality constituents in the Basin that routinely exceed drinking water standards; arsenic and total dissolved solids (TDS) occasionally approach or slightly exceed drinking water standards in a few wells. Anthropogenic groundwater quality constituents that are occasionally detected, though at concentrations less than drinking water standards, are nitrate from septic system leaching and organic point-source contaminants originating from several former industrial sites.

The MTs for degraded water quality are the California drinking water standards for each constituent, except for nitrate, which is set to half the maximum contaminant level (MCL) drinking water standard. The MOs are set to the average concentrations measured for each well between January 2010 and December 2019. This means that for some wells the MOs are at greater concentrations than the MTs for the naturally occurring constituents iron and manganese. The SMC for this sustainability indicator are met when concentrations are at or below the criteria.

All water quality RMP were sampled in WY2025 except for inactive RMP well SVWD Well #9 in the Monterey Formation and SVWD #3B, which was destroyed in WY2024. Going forward, SVWD #3B will likely be replaced by SVWD Sucinto when that new supply well is integrated into SVWD’s system. The MTs and WY2025 maximum concentrations for degraded water quality RMPs are summarized in Table 9. All water quality data for constituents with SMC collected from public supply wells in WY2025 are summarized in tabular format in Appendix D. Chemographs showing water quality data over time for constituents that have increasing trends are shown in Appendix E.

Consistent with past results, the only constituents found in WY2025 at concentrations higher than the MTs are iron and manganese. Iron and manganese are naturally elevated in the Lompico aquifer and in parts of the Santa Margarita aquifer, such as the Olympia wellfield (Table 9). Because iron and manganese concentrations greater than the MTs are naturally occurring and are not being caused by groundwater use, they do not constitute undesirable results. SLVWD and SVWD routinely treat or blend raw groundwater to meet state drinking water standards for iron and manganese.

Table 10 lists the WY2025 maximum concentrations relative to MOs for iron and manganese in wells that exceed MTs. In WY2025, iron concentrations meet the MOs in 4 of 5 wells, with the exception of SLVWD Pasatiempo #7. Two wells meet the MO for manganese and 3 wells—SLVWD Pasatiempo #7, SVWD #10A, and SVWD #11A—do not.

TDS, chloride, nitrate, and chlorobenzene do not meet MOs in some wells in WY2025 (Table 9). Given that the MOs are based on long-term average concentrations for each well, and for chlorobenzene, the laboratory reporting limit, it is expected that some wells will not meet their MOs by a small amount in a typical year.

Arsenic is naturally occurring at or near the MCL and MT in some areas of the Basin. SVWD and SLVWD blend the water extracted from wells with higher arsenic concentrations with water from sources with lower arsenic content to ensure that drinking water quality standards are met. SVWD #11B is the only RMP that regularly approaches the arsenic MCL and MT of 10 micrograms per Liter (µg/L) and in WY2025 nearly exceeded the MT/MCL with a reported concentration of 9.8 µg/L. The arsenic concentration in this well has increased for 3 consecutive years since WY2023, perhaps related to the increasing extraction volume discussed in Section 2.3 (Appendix E, figure E-2). Arsenic was detected in 3 other RMPs in WY2024 (SLVWD Quail Hollow #5A and SVWD #11A), but concentrations were much close to or below the MOs. Samples collected from SLVWD Pasatiempo #8 in recent years are routinely around the MCL for arsenic and reached 9.8 µg/L in WY2025 (Appendix E, figure E-1). This well was installed in December 2018 and was not made an RMP during development of the GSP because there was insufficient water quality data to make informed decisions on SMC. This will be addressed during the Basin GSP Periodic Evaluation in 2026.

TDS and chloride concentrations are well below their respective MTs (Table 9), but do not meet the MO in 5 of 7 sampled wells. This reflects long-term trends in several wells in which TDS concentrations are slowly rising, such that MOs for more than half the RMPs are not met. Chemographs for wells with increasing TDS concentration trends are included in Appendix E. These include SLVWD Olympia #3 in the Santa Margarita aquifer, SLVWD Pasatiempo #7 and SVWD #10A in the Lompico aquifer, and SVWD Orchard well in the Lompico/Butano aquifer (Appendix E, figures E-3 through E-6 and E-8 through E-11).

Nitrate was detected in WY2025 only at SLVWD Quail Hollow #5A. Quail Hollow #5A is typically the only RMP with elevated nitrate between 1 and 3.5 milligrams per liter (mg/L), which is below the MT of 5 mg/L (Appendix E, figure E-7).

Occasionally chlorobenzene is detected at trace concentrations near the reporting limit at SVWD #11A, including in WY2025. The MO for chlorobenzene is the laboratory reporting limit, so any detection indicates that the MO is not being met.

Table 9. Groundwater Quality Compared to Sustainable Management Criteria, WY2025

Aquifer	Well Name	Concentration milligrams per Liter (mg/L)										
		TDS	Chloride	Iron	Manganese	Arsenic	Nitrate (as Nitrogen)	Methyl-tert-butyl-ether	Chlorobenzene	Trichloroethylene	Tetrachloroethylene	1,2-Dichloroethylene
Minimum Threshold		***1,000***	***250***	***0.3***	***0.05***	***0.01***	***5***	***0.013***	***0.07***	***0.005***	***0.005***	***0.07***
Santa Margarita	SLVWD Quail Hollow #5A	110	8.5	ND	ND	0.0015	2.3	ND	ND	ND	ND	ND
	SLVWD Olympia #3	740	8.9	0.30	0.150	ND	ND	ND	ND	ND	ND	ND
Monterey	SVWD Well #9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lompico	SLVWD Pasatiempo #7	150	7.3	0.76	0.110	ND	ND	ND	ND	ND	ND	ND
	SVWD #10A	300	33	1.6	0.120	ND	ND	ND	NS	ND	ND	ND
	SVWD #11A	540	27	0.32	0.120	0.002	ND	ND	0.0009	ND	ND	ND
	SVWD #11B	360	21	0.59	0.065	0.0098	ND	ND	NS	ND	ND	ND
Lompico / Butano	SVWD Orchard Well	530	64	ND	0.0029	ND	ND	ND	NS	ND	ND	ND

Minimum threshold not met

Minimum threshold met, but measurable objective not met (see Appendix D for MO)

Minimum threshold and measurable objective met, or analyte not detected (ND)

NS – not sampled because well was not actively pumped for water supply

Table 10. Groundwater Quality Compared to Iron and Manganese Measurable Objectives, WY2025

Aquifer	Well Name	Iron Concentration (mg/L)		Manganese Concentration (mg/L)	
		Measurable Objective	WY2025 Maximum	Measurable Objective	WY2024 Maximum
Santa Margarita	SLVWD Olympia #3	0.502	0.30	0.157	0.15
Lompico	SLVWD Pasatiempo #7	0.539	0.76	0.099	0.11
	SVWD #10A	1.51	1.6	0.099	0.12
	SVWD #11A	0.459	0.32	0.112	0.12
	SVWD #11B	0.826	0.59	0.077	0.065

Measurable objective not met
Measurable objective met

4.4 Depletion of Interconnected Surface Water

Depletion of interconnected surface water is assessed at 2 RMPs using groundwater elevations as a proxy. The approach for evaluating sustainability is the same as the approach described for the chronic lowering of groundwater levels indicator in Section 4.1. Table 11 compares 5 years of annual minimum groundwater elevations for depletion of interconnected surface water RMPs with MTs and MOs. Hydrographs for depletion of interconnected surface water RMPs are shown in Appendix B, figures B-1 and B-2. WY2025 groundwater elevations in both RMPs were slightly lower when compared to measurements from fall in WY2024 but remained above their respective MTs, which means undesirable results did not occur for depletion of interconnected surface water.

Table 11. Groundwater Elevations Compared to Depletion of Interconnected Surface Water Sustainable Management Criteria, WY2021-2025

Aquifer	Well Name	Minimum Groundwater Elevation (feet amsl)						
		Minimum Threshold	Measurable Objective*	WY2021	WY2022	WY2023	WY2024	WY2025
Water Year Type				**Critically Dry**	**Normal**	**Wet**	**Normal**	**Normal**
Santa Margarita	SLVWD Quail MW-A	413	416	413.3	413.1	413.3	414.5	413.9
	SVWD SV4-MW	381	387	404.1	405.7	408.7	404.2	401.1

*2027 interim milestones are equal to the measurable objective

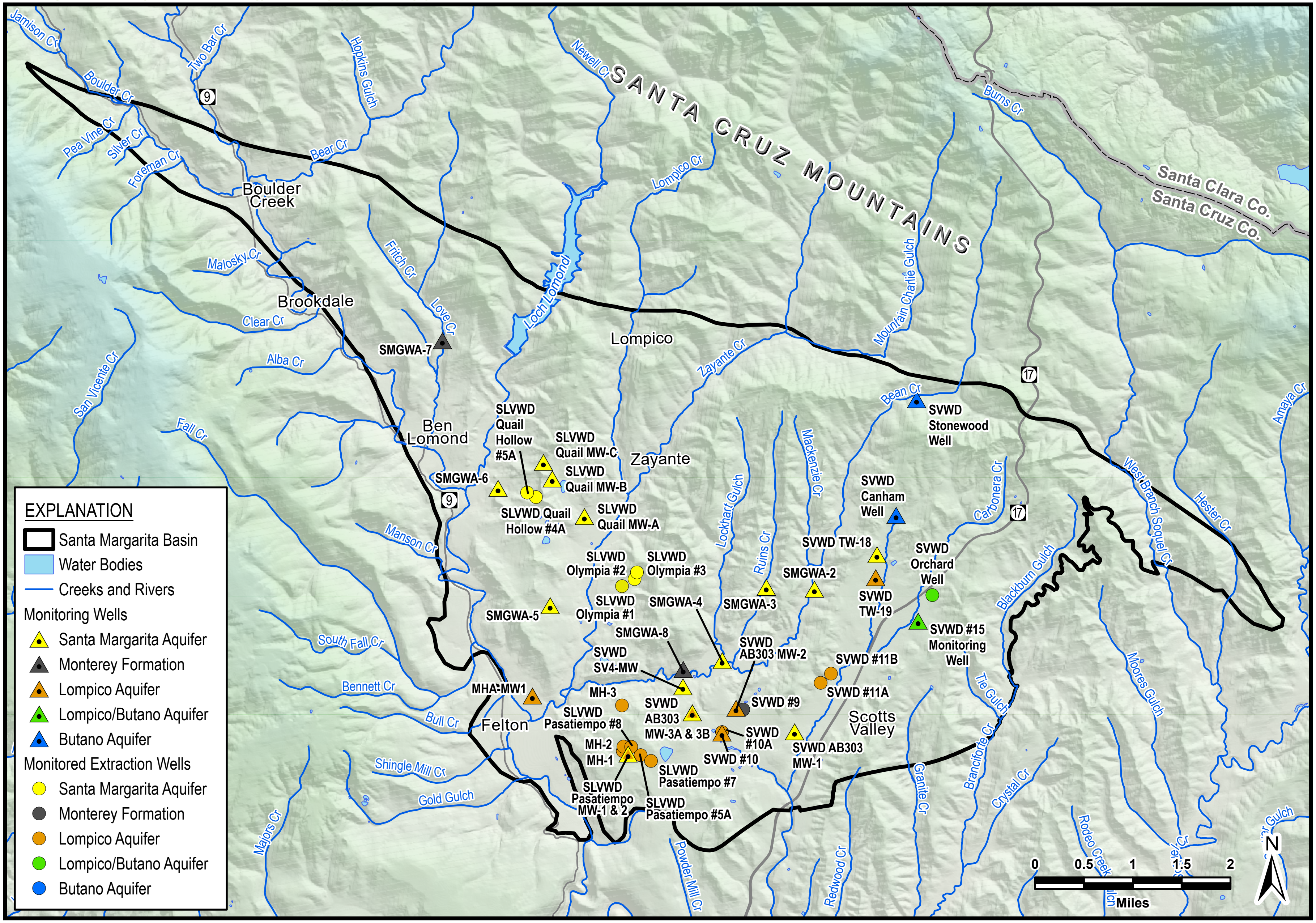
Minimum threshold not met
Minimum threshold met, but measurable objective not met
Measurable objective met

Appendix A

Chronic Lowering of Groundwater Levels Representative Monitoring Point Hydrographs with Sustainable Management Criteria

Well Locations and Screen Aquifer Shown on Map below

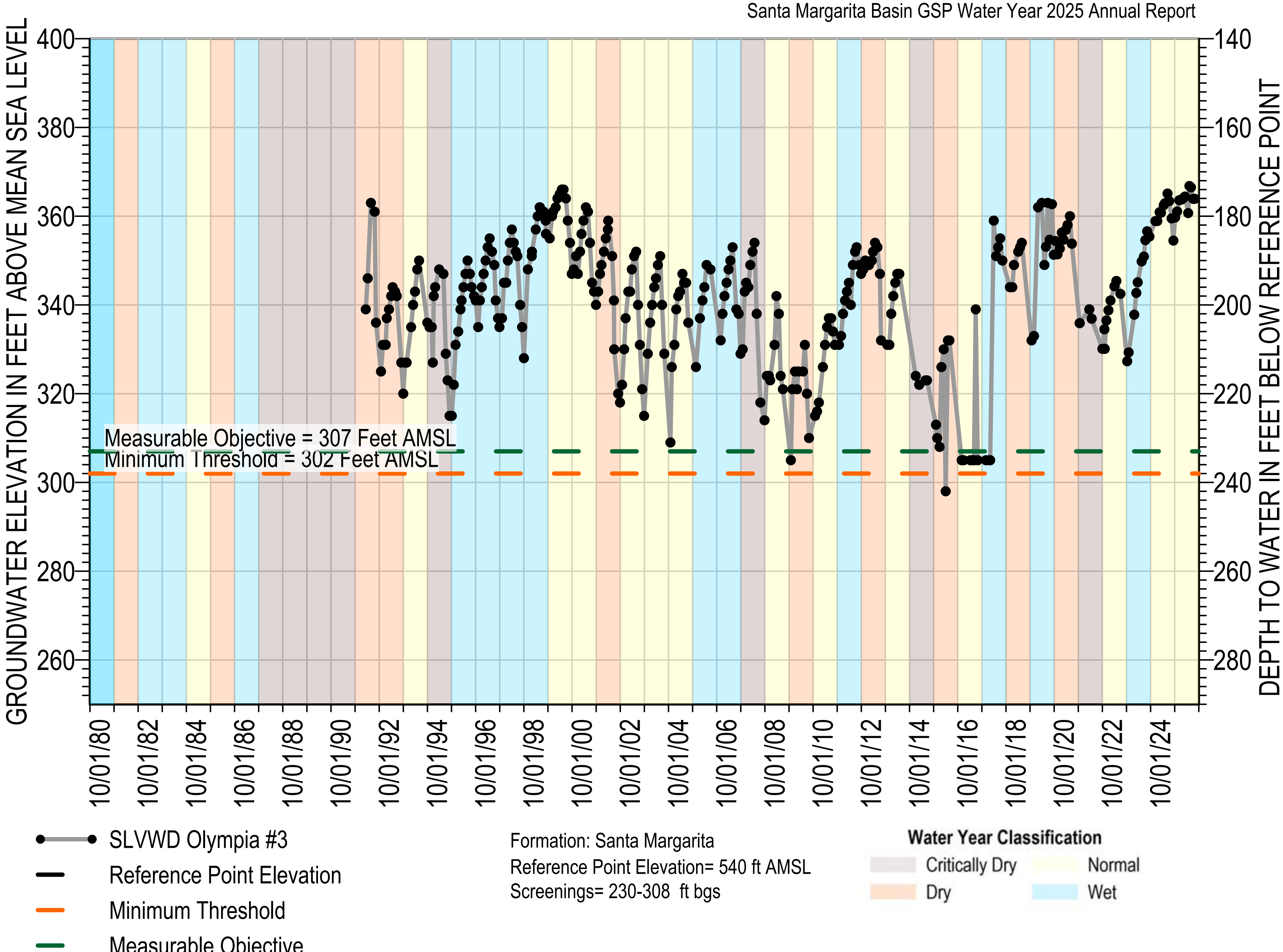
H:\Santa_Margarita_Basin\AnnualReports\WY 2024\GIS\ArcPro\Appendix_GWL_Map\Appendix_GWL_Map.aprx



Well Location Map

MONTGOMERY & ASSOCIATES

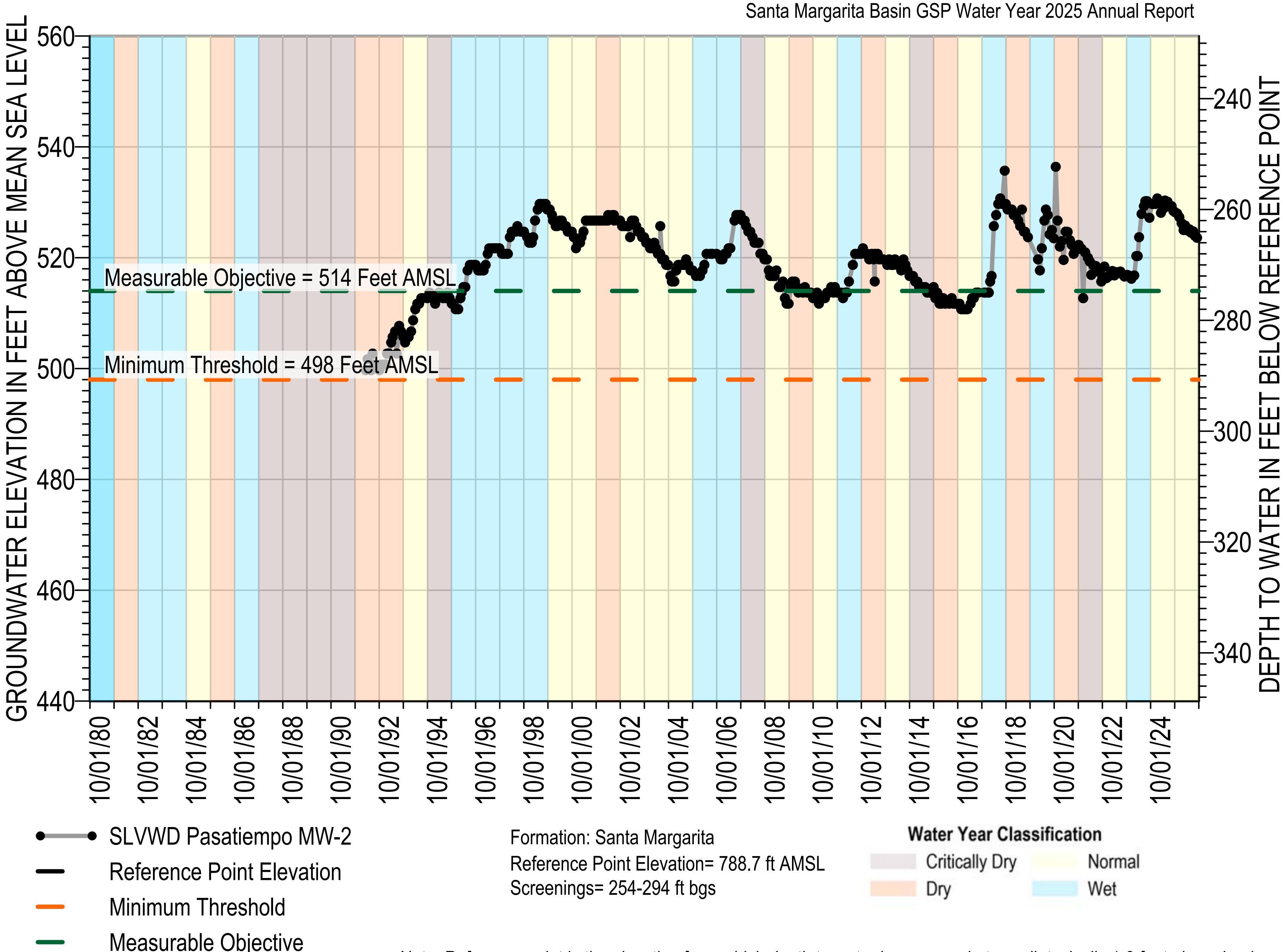
Santa Margarita Sandstone



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 A-1. Hydrograph of Station SLVWD Olympia #3

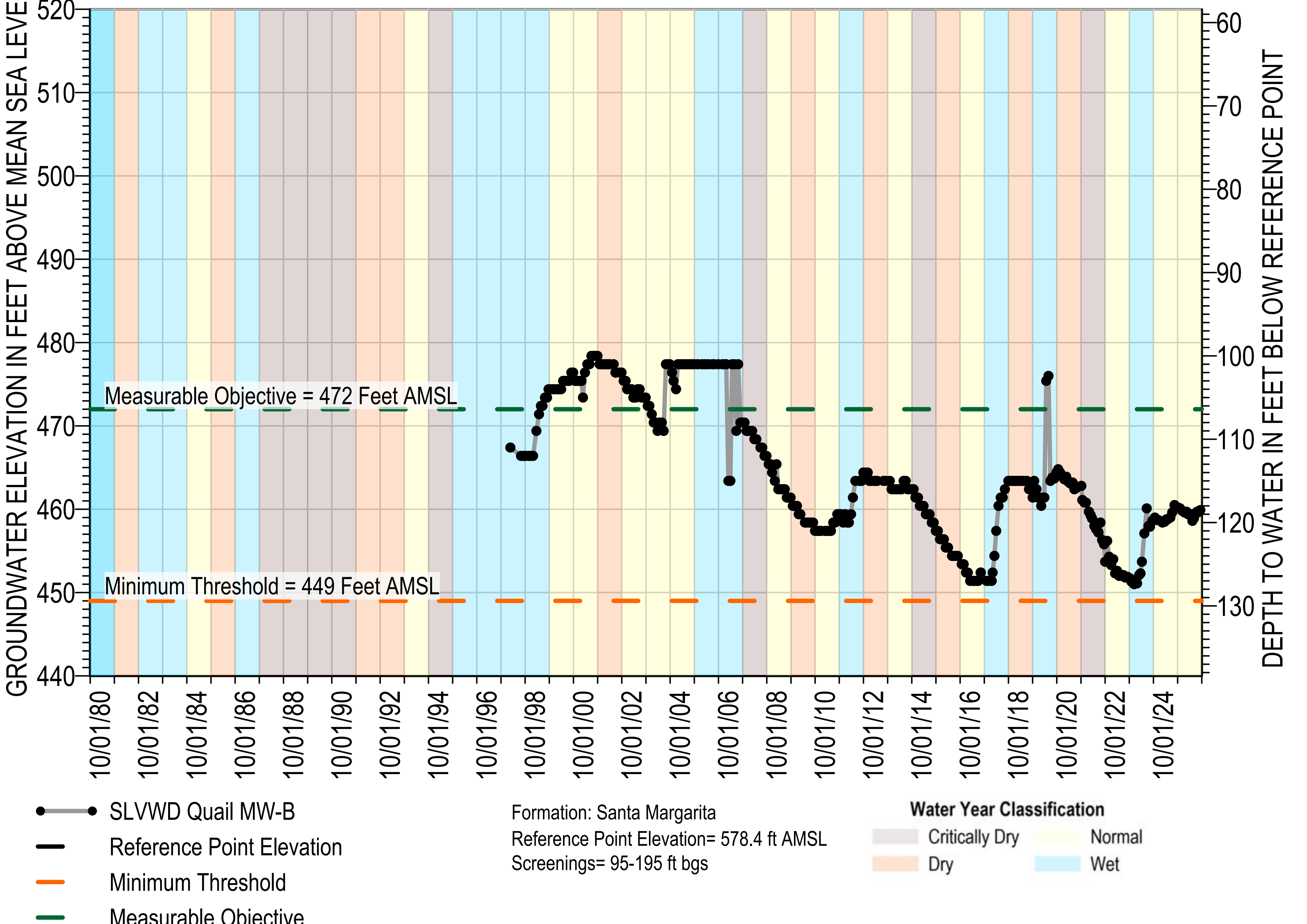
MONTGOMERY & ASSOCIATES



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 A-2. Hydrograph of Station SLVWD Pasatiempo MW-2

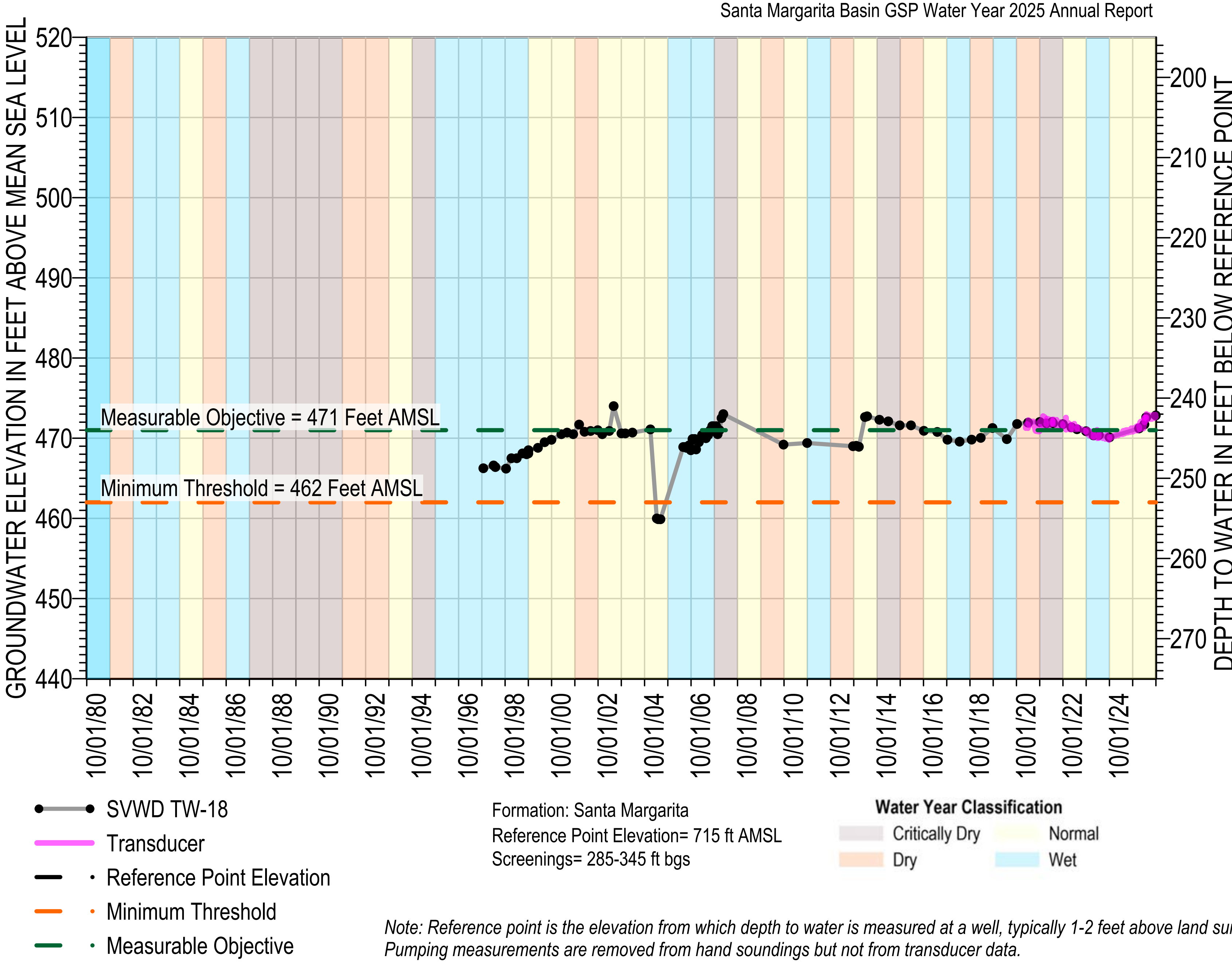
MONTGOMERY & ASSOCIATES



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 A-3. Hydrograph of Station SLVWD Quail MW-B

MONTGOMERY & ASSOCIATES

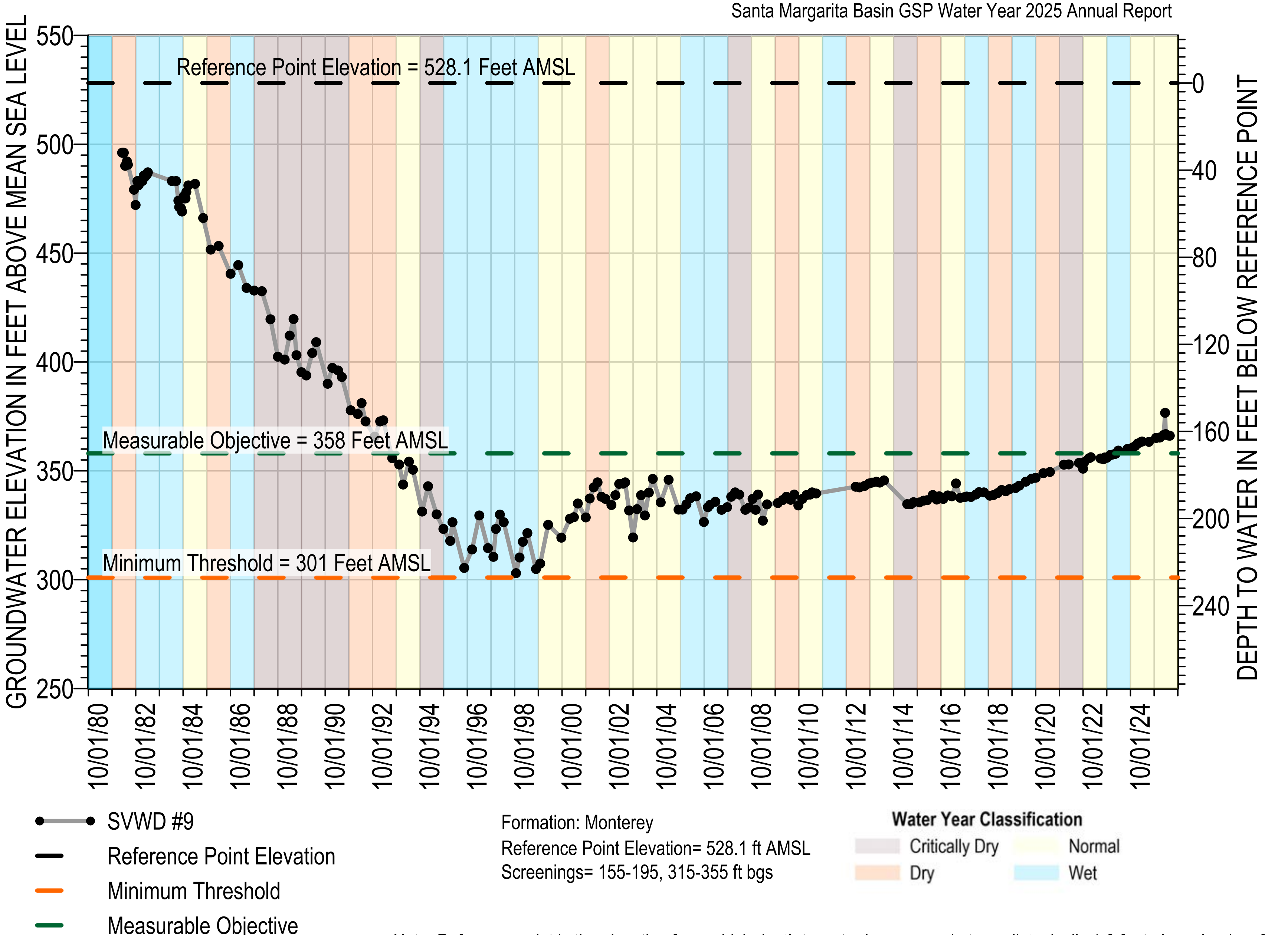


Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure A-4. Hydrograph of Station SVWD TW-18

MONTGOMERY
& ASSOCIATES

Monterey Formation



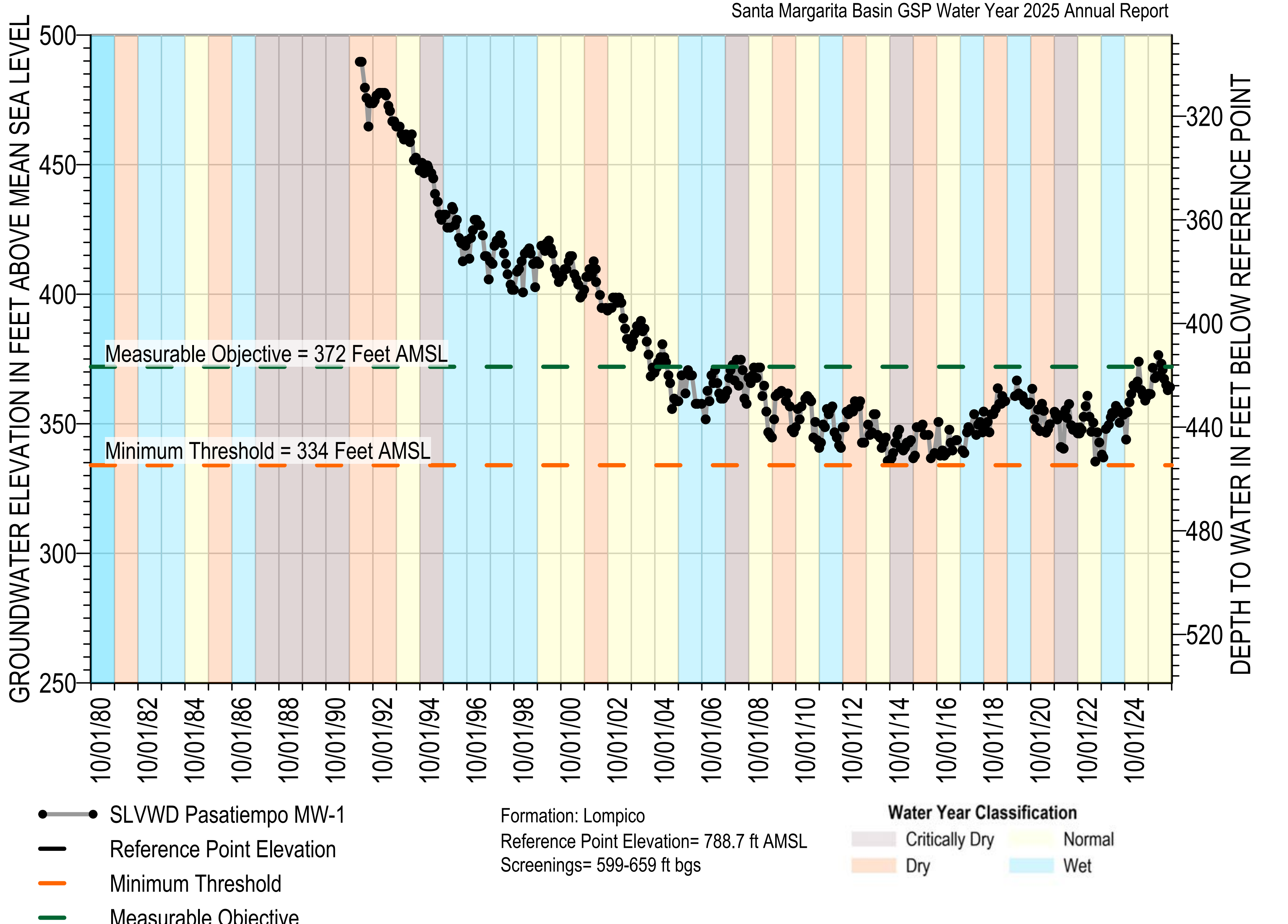
Formation: Monterey
Reference Point Elevation= 528.1 ft AMSL
Screenings= 155-195, 315-355 ft bgs

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 A-5. Hydrograph of Station SVWD #9

MONTGOMERY & ASSOCIATES

Lompico Sandstone



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 A-6. Hydrograph of Station SLVWD Pasatiempo MW-1

MONTGOMERY & ASSOCIATES

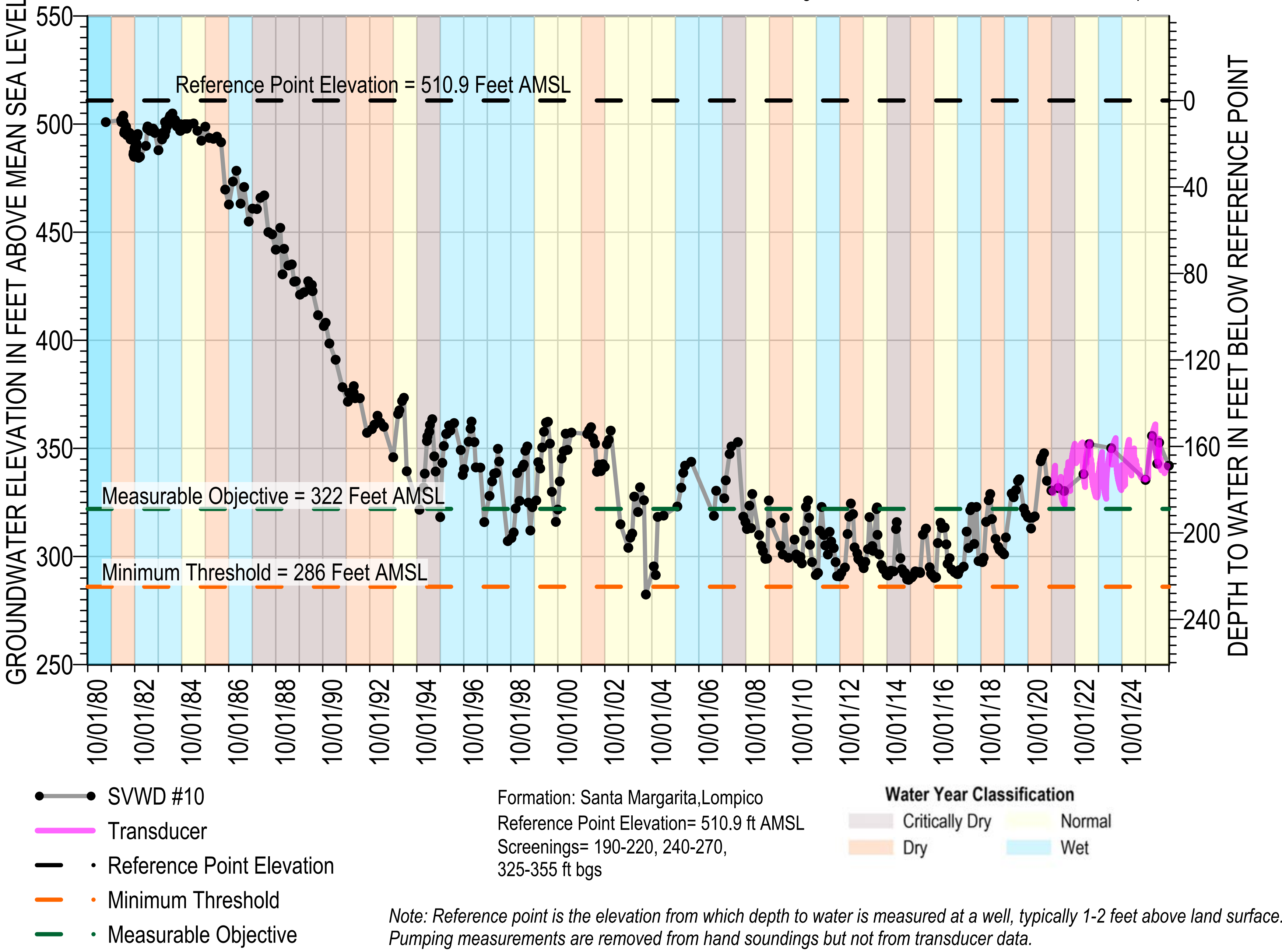


Figure A-7. Hydrograph of Station SVWD #10

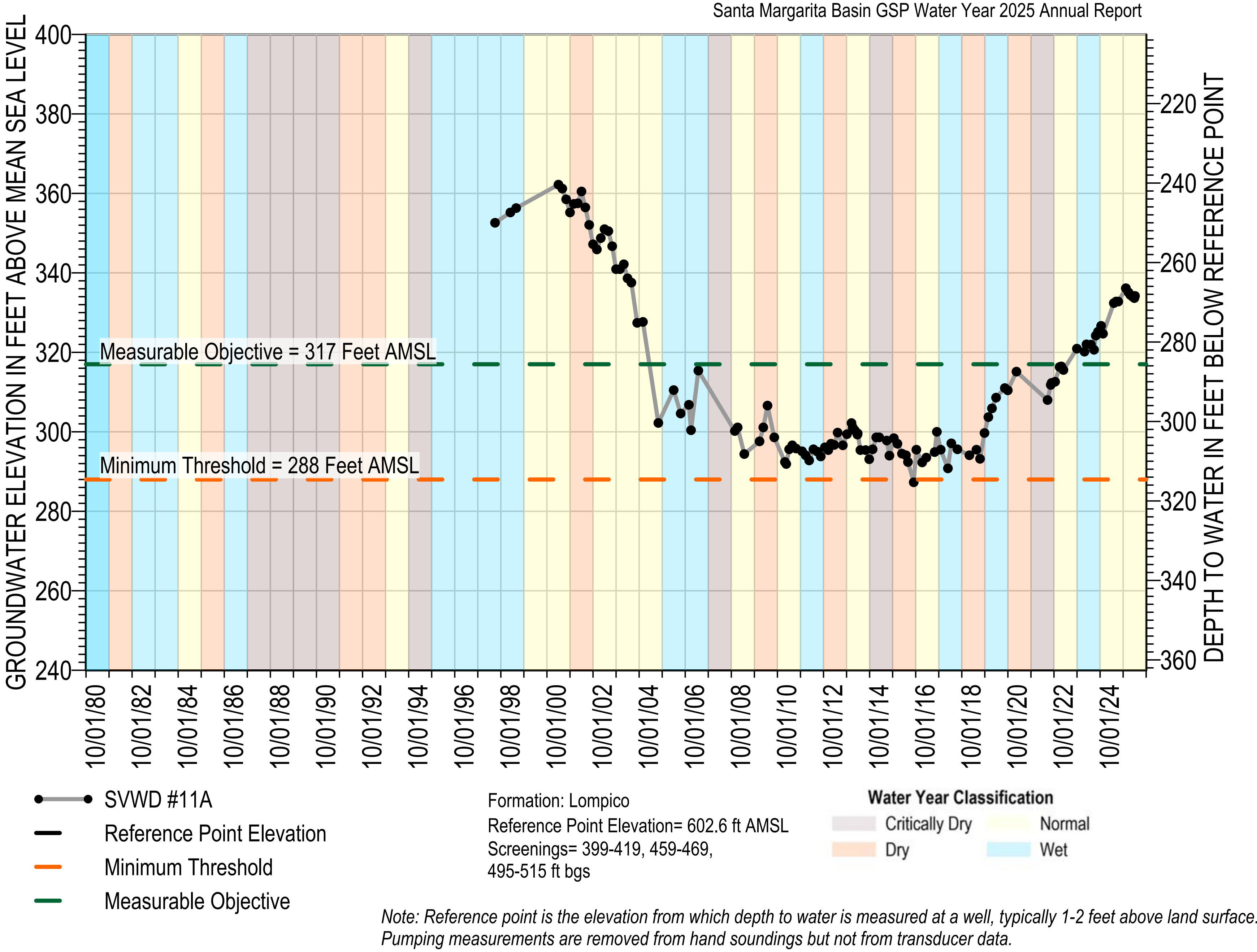
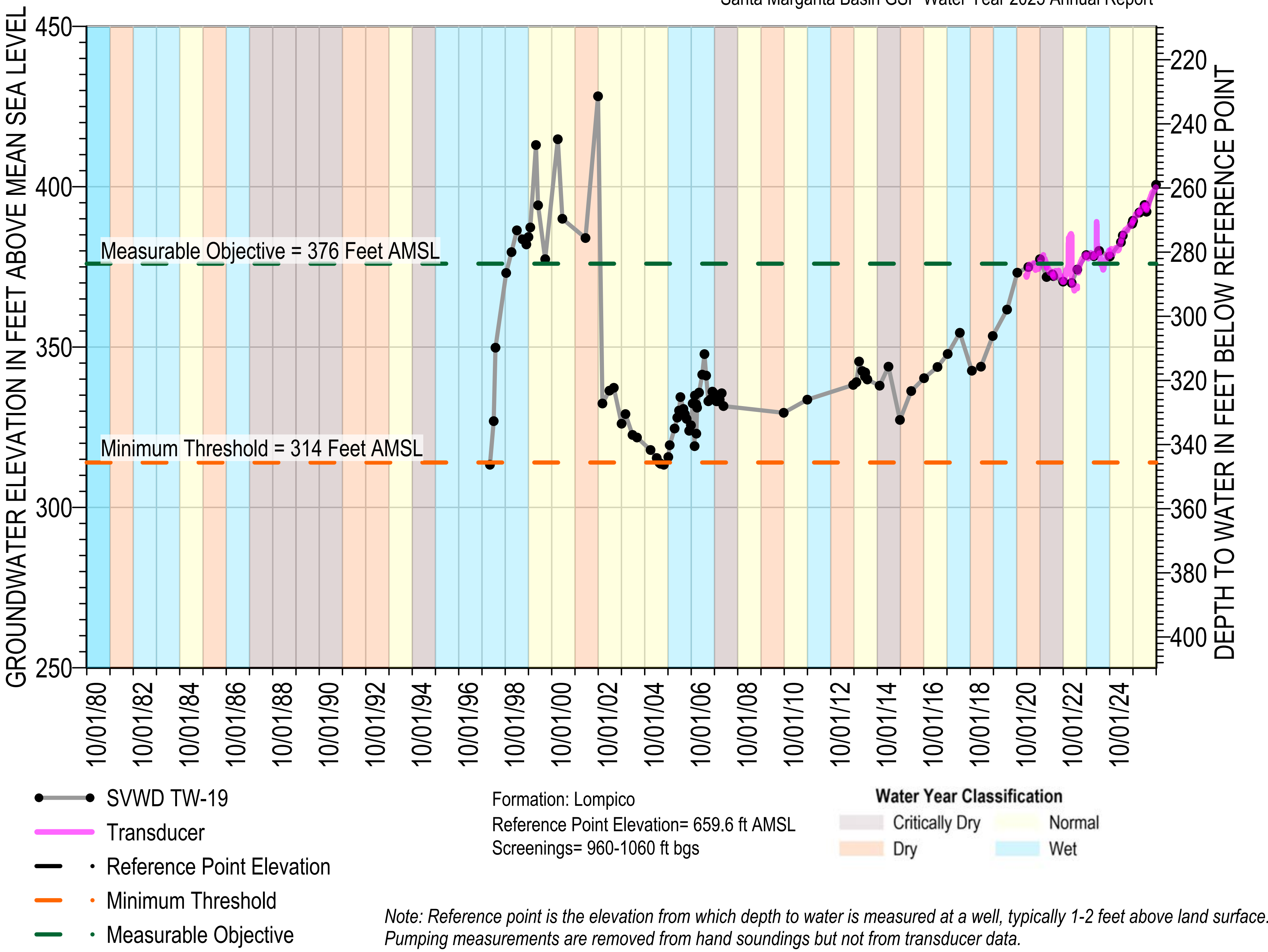


Figure A-8. Hydrograph of Station SVWD #11A

MONTGOMERY & ASSOCIATES



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 A-9. Hydrograph of Station SVWD TW-19

MONTGOMERY & ASSOCIATES

Lompico/Butano Sandstone

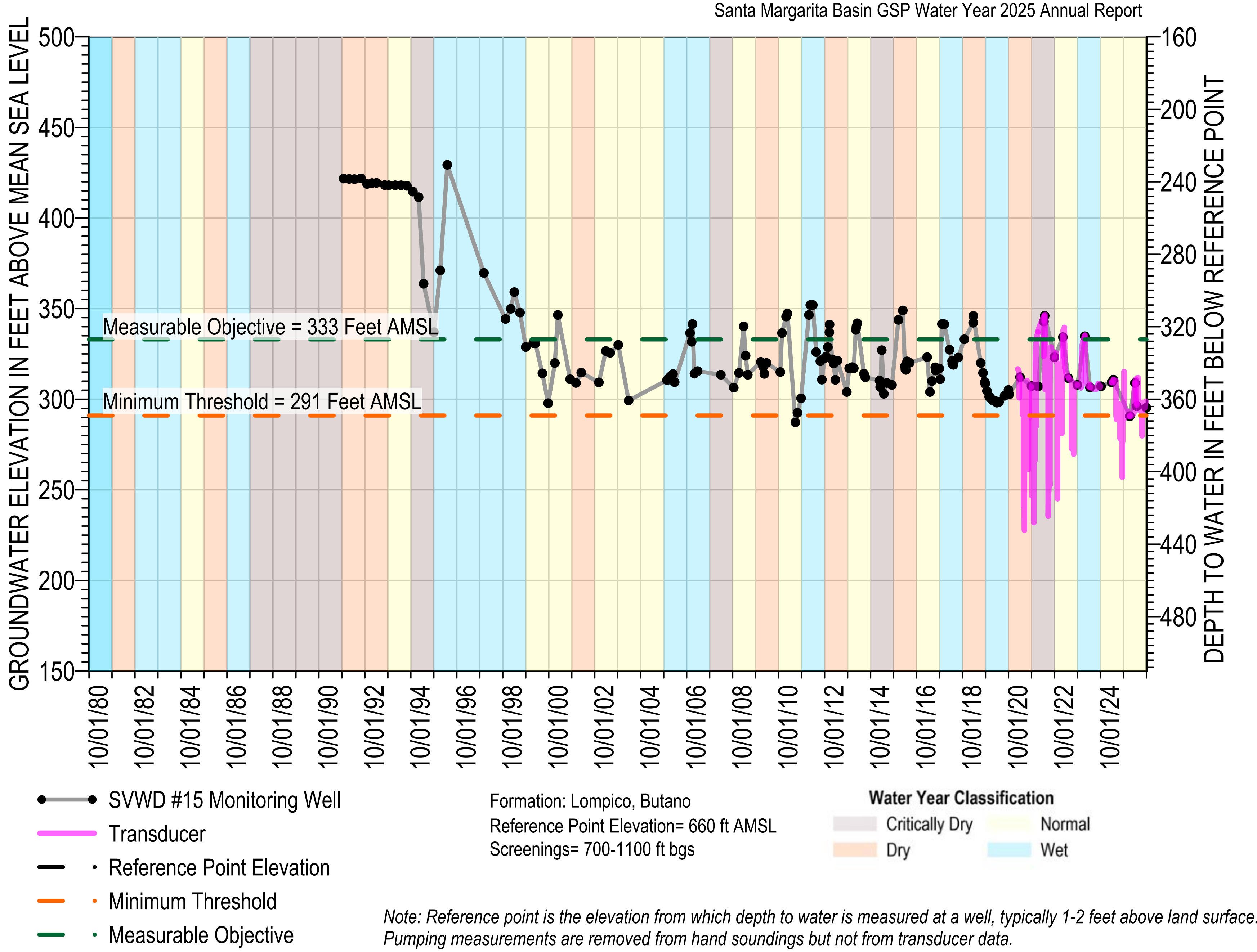
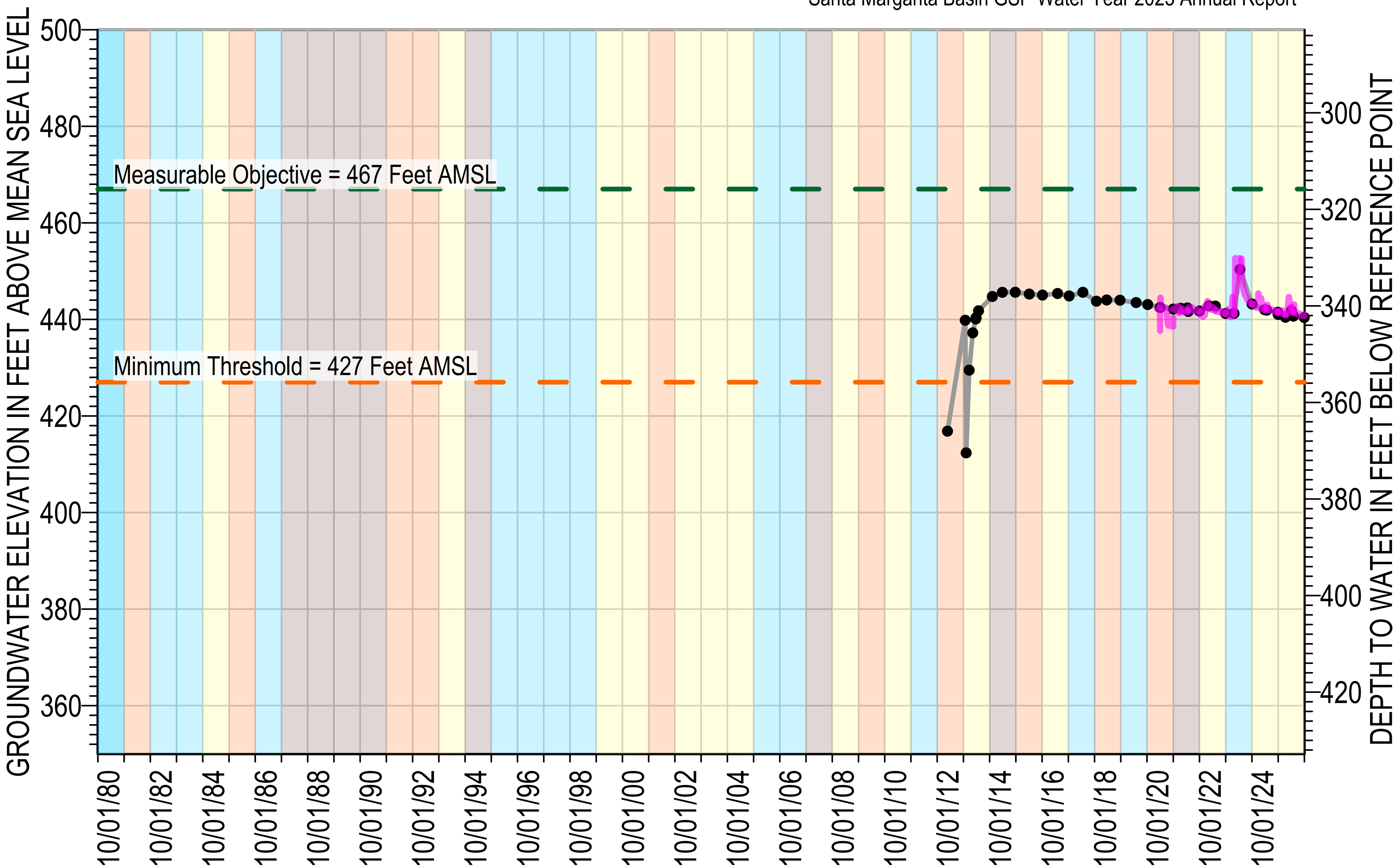


Figure A-10. Hydrograph of Station SVWD #15 Monitoring Well

Butano Sandstone



SVWD Canham Well
Transducer
Reference Point Elevation
Minimum Threshold
Measurable Objective

Formation: Butano
Reference Point Elevation= 782.8 ft AMSL
Screenings= 1,281-1,381 ft bgs

Water Year Classification
Critically Dry
Normal
Dry
Wet

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 A-11. Hydrograph of Station SVWD Canham Well

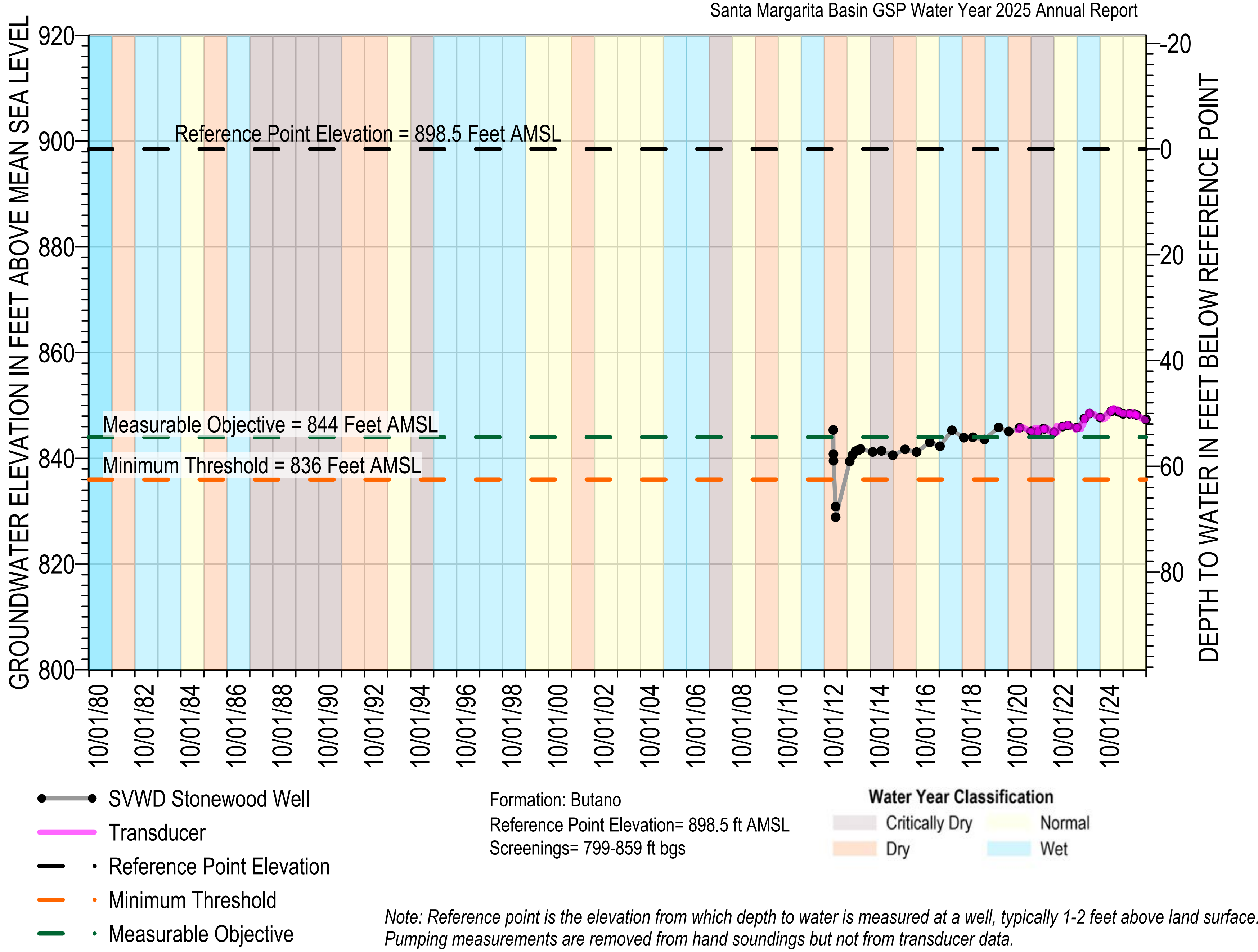
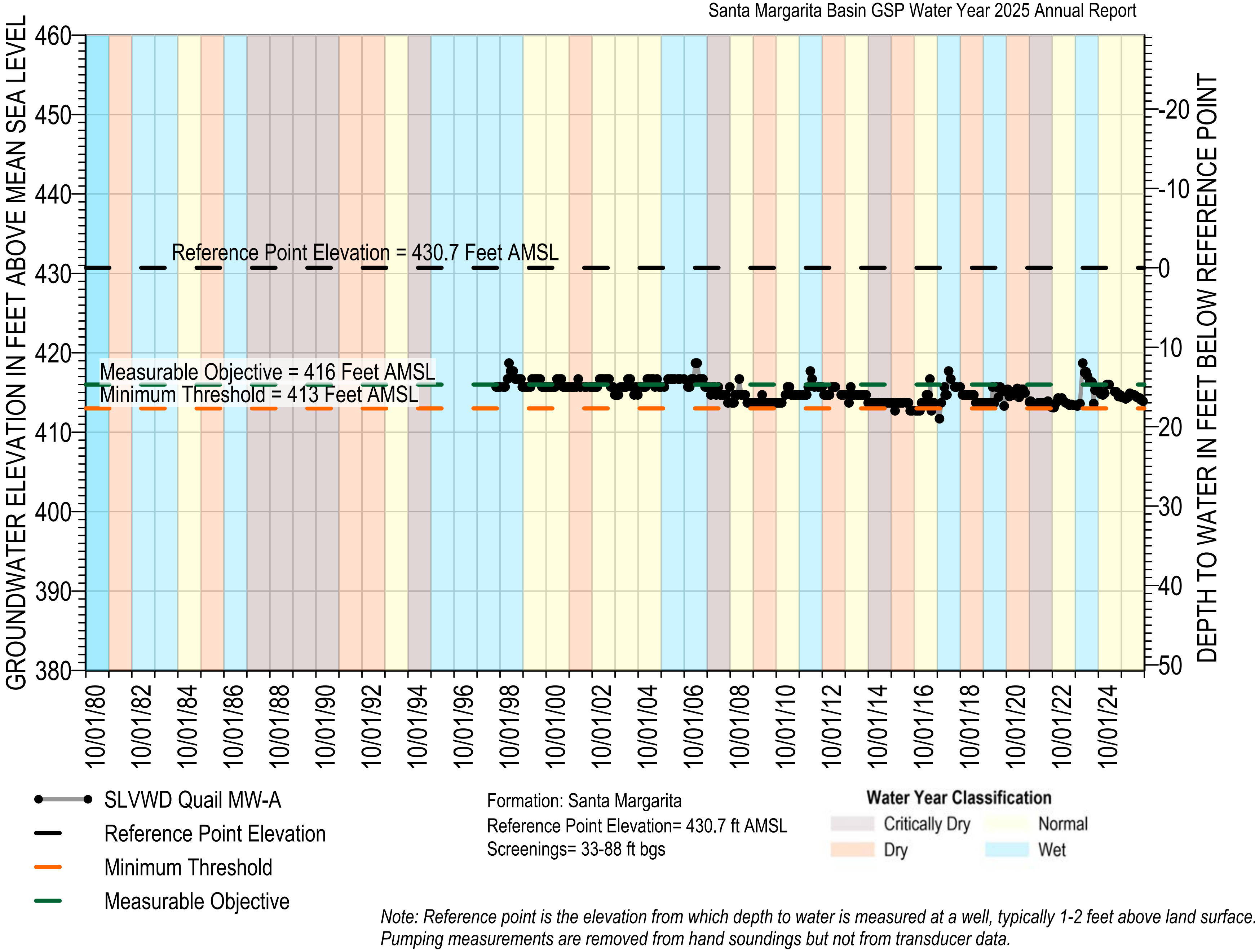


Figure A-12. Hydrograph of Station SVWD Stonewood Well

Appendix B

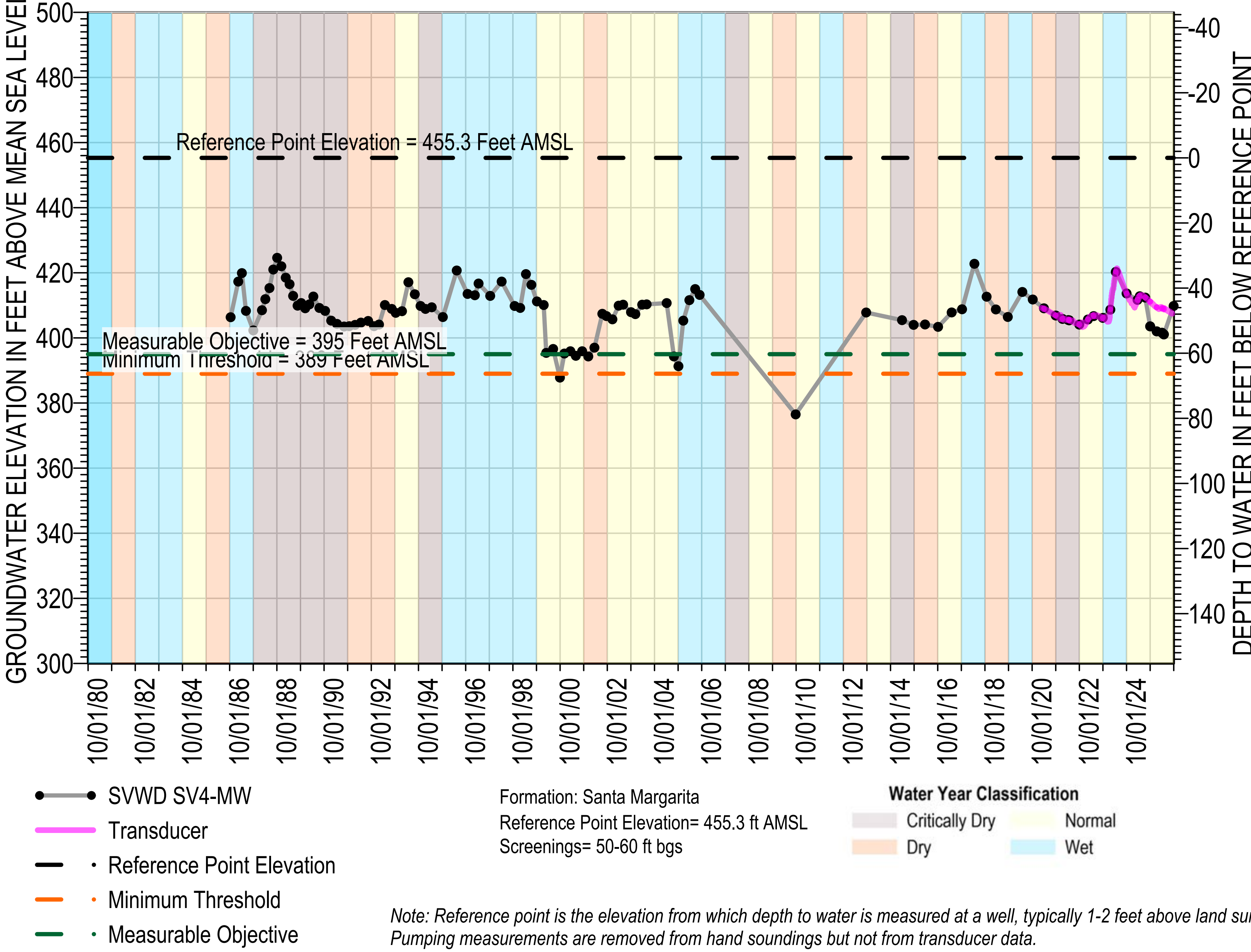
Depletion of Interconnected Surface Water Representative Monitoring Point Hydrographs with Sustainable Management Criteria



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 B-1. Hydrograph of Station SLVWD Quail MW-A

MONTGOMERY & ASSOCIATES



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 B-2. Hydrograph of Station SVWD SV4-MW

MONTGOMERY
& ASSOCIATES

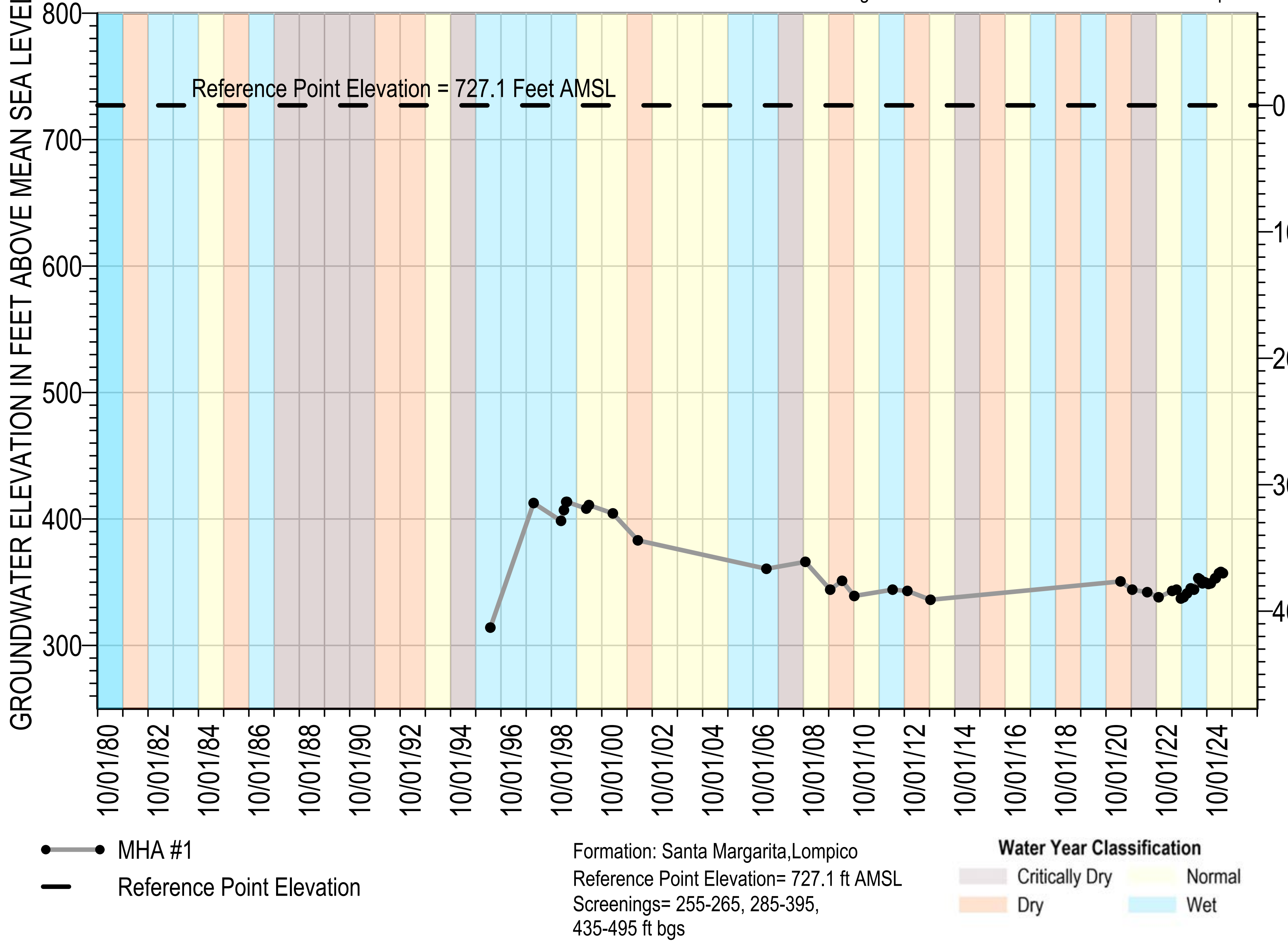
Appendix C

GSP Non-RMP Monitoring Network Hydrographs

MONTGOMERY & ASSOCIATES

Appendix C

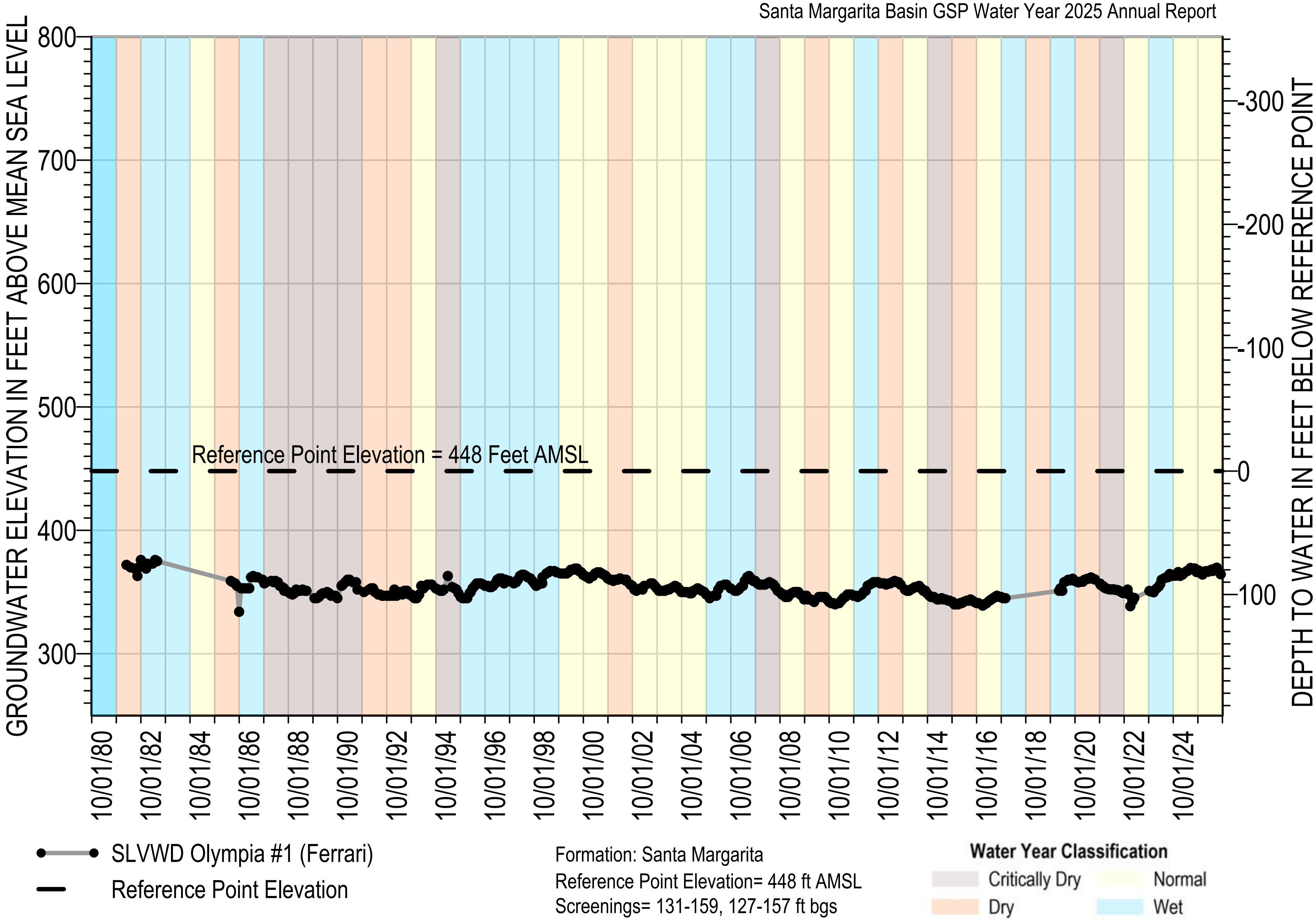
Santa Margarita Sandstone



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 C-1. Hydrograph of Station MHA #1

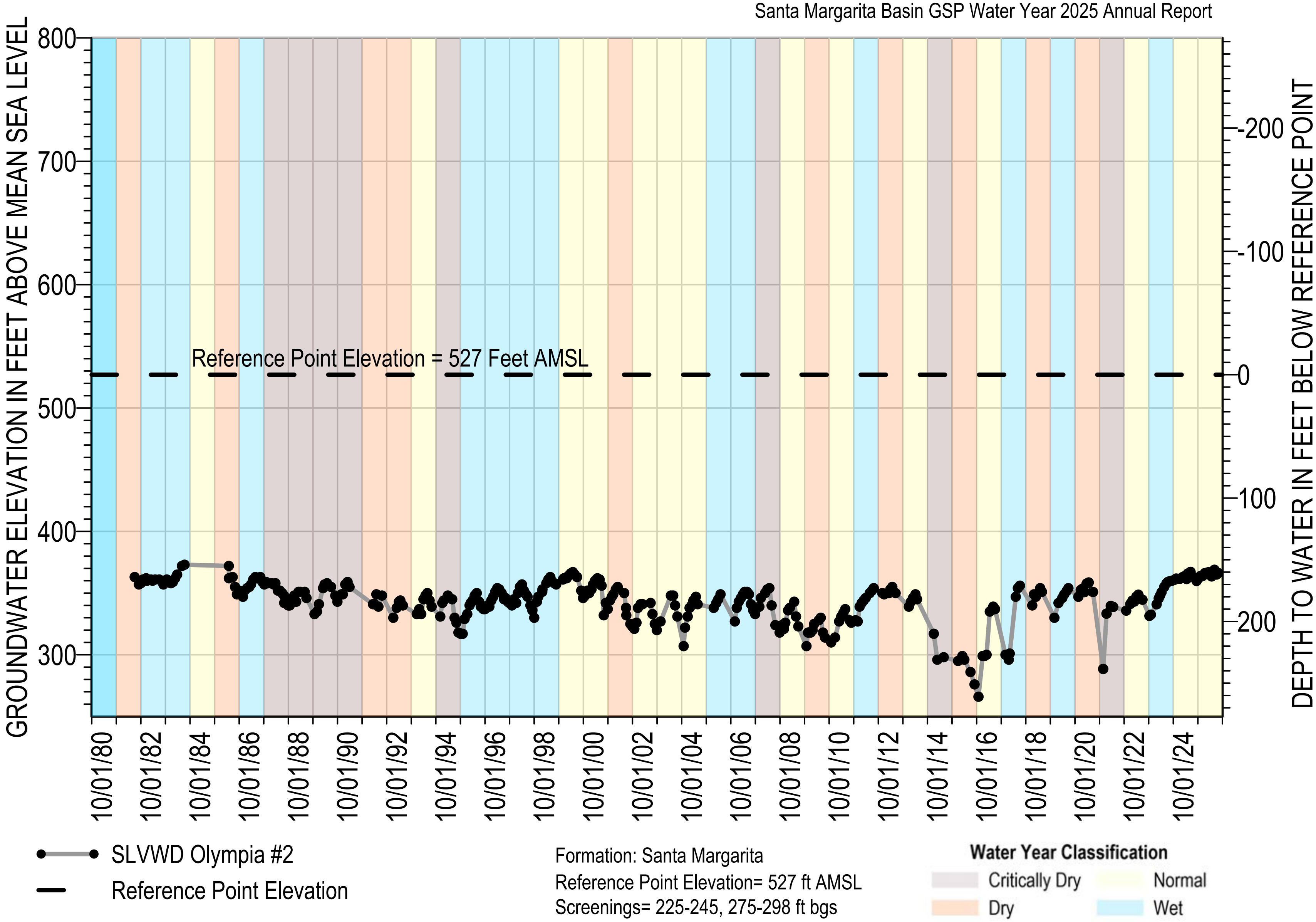
MONTGOMERY & ASSOCIATES



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 C-2. Hydrograph of Station SLVWD Olympia #1 (Ferrari)

MONTGOMERY & ASSOCIATES

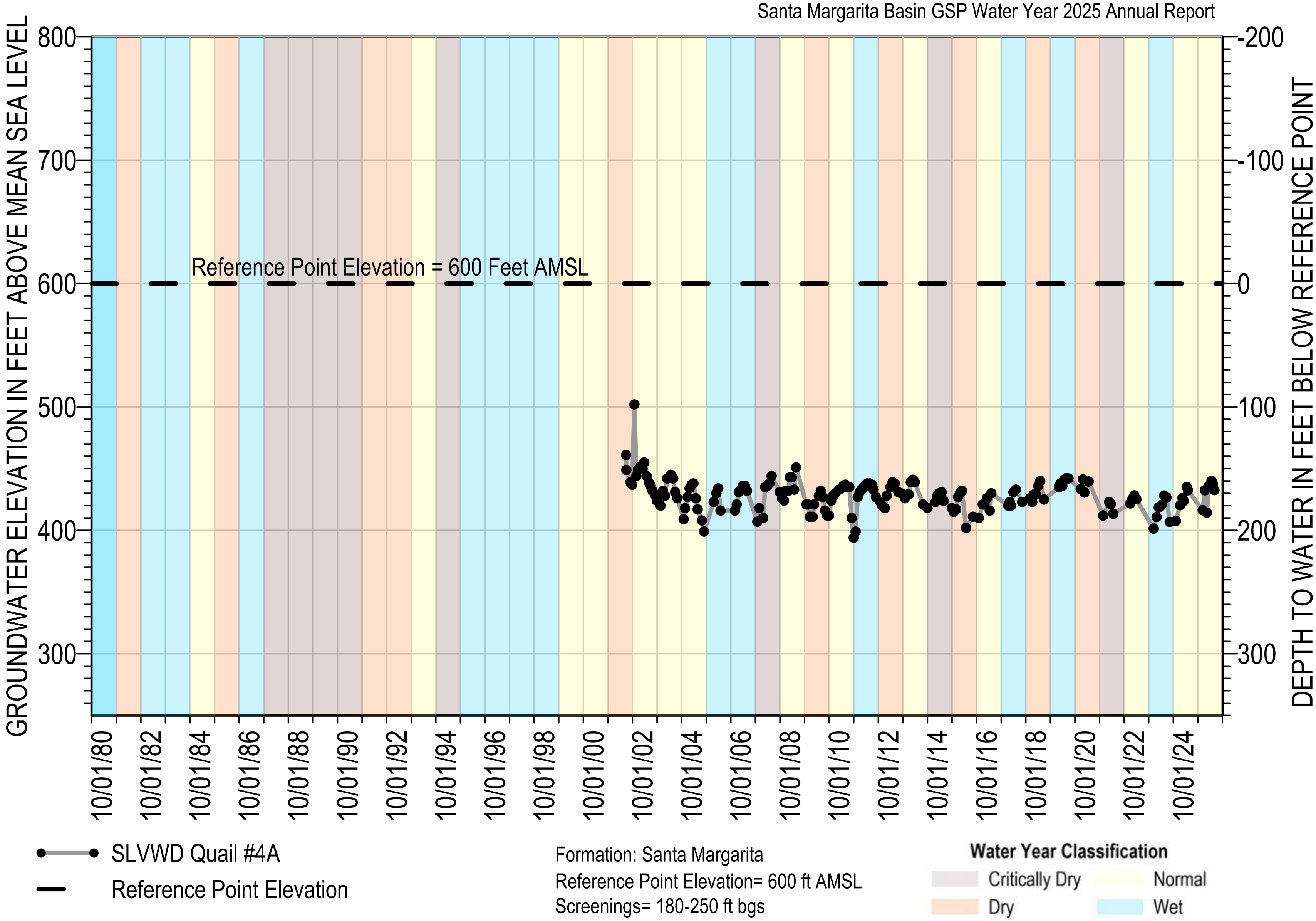


Formation: Santa Margarita
Reference Point Elevation= 527 ft AMSL
Screenings= 225-245, 275-298 ft bgs

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 C-3. Hydrograph of Station SLVWD Olympia #2

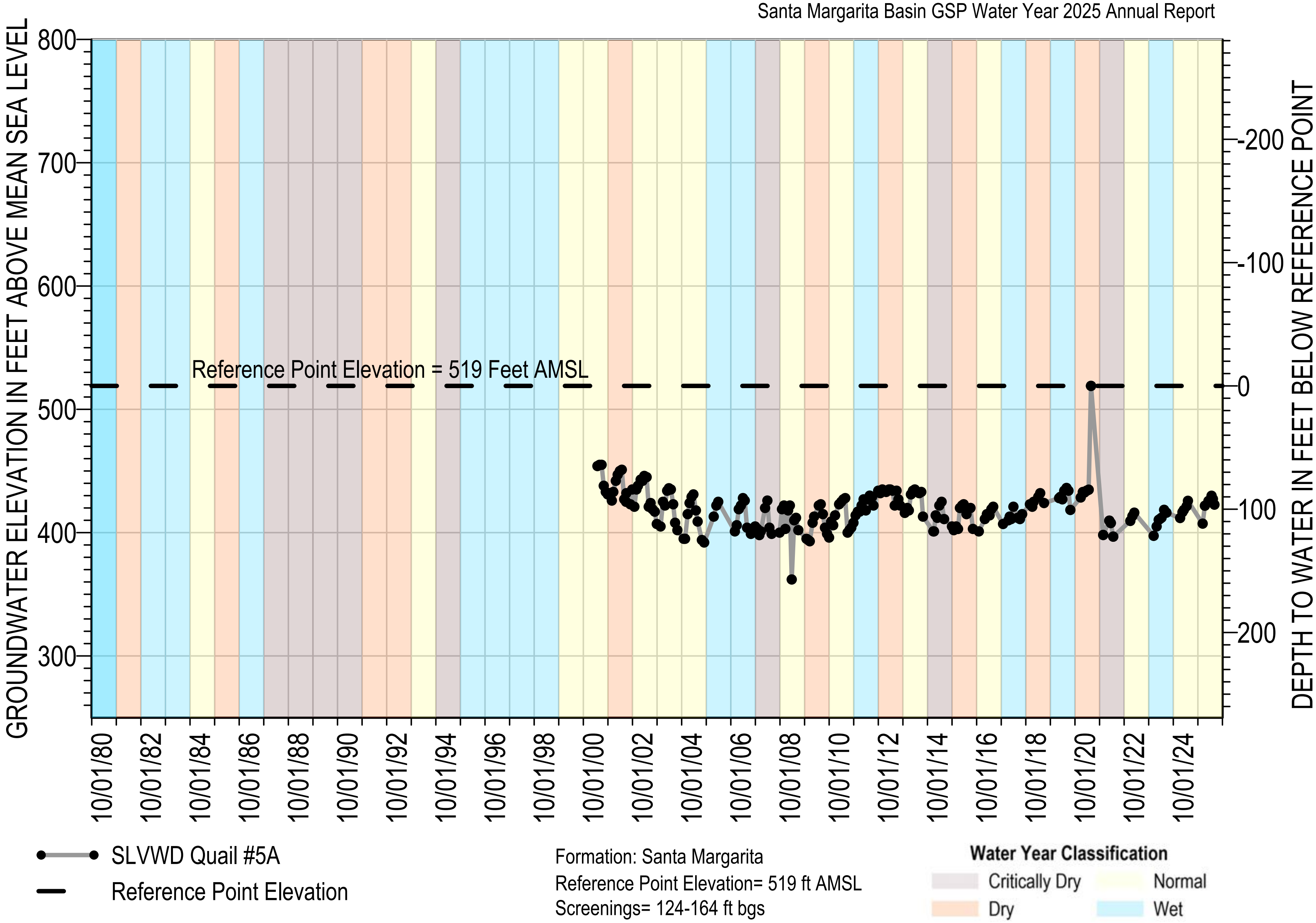
MONTGOMERY & ASSOCIATES



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.

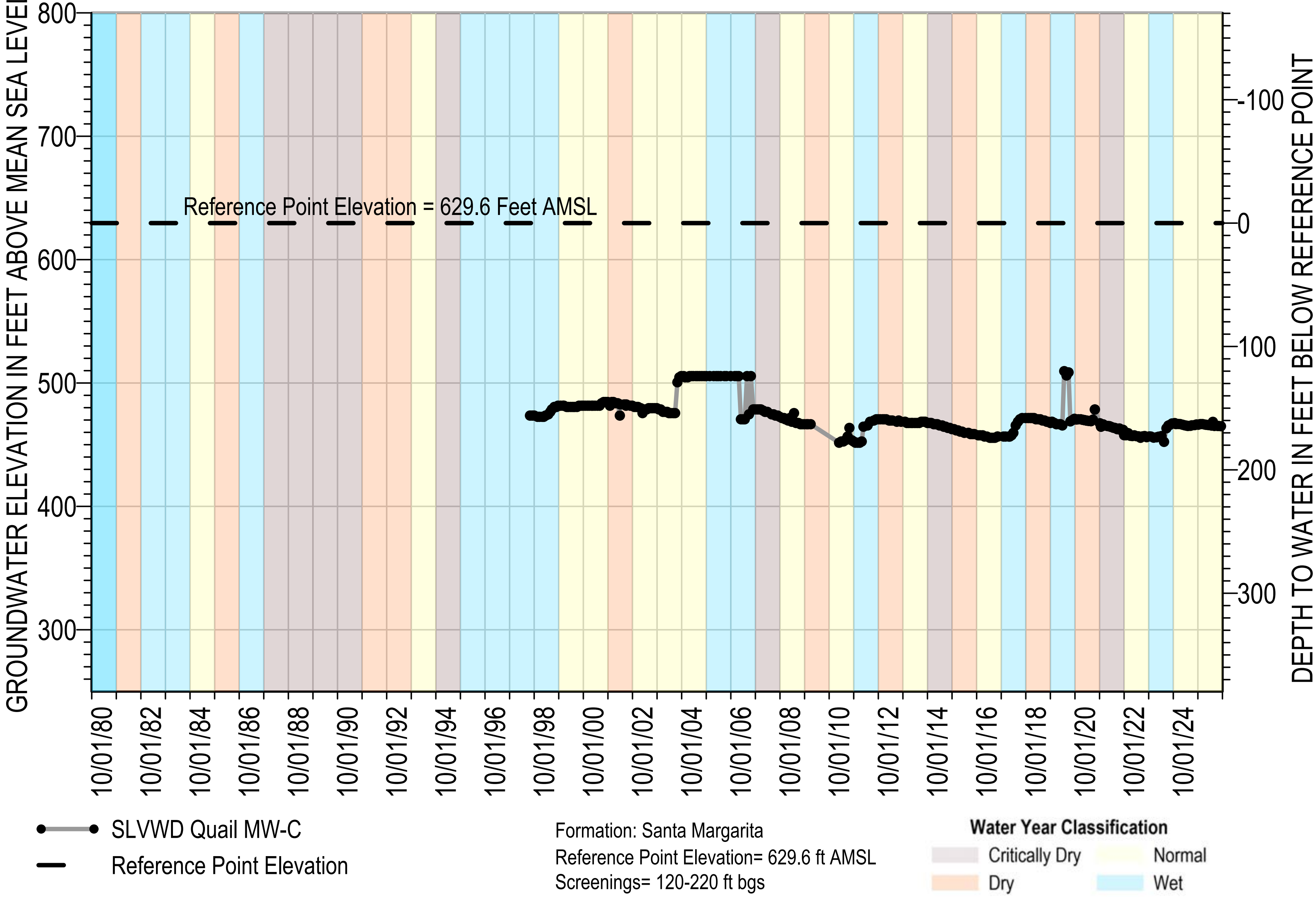
Figure C-4. Hydrograph of Station SLVWD Quail #4A

MONTGOMERY & ASSOCIATES



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.

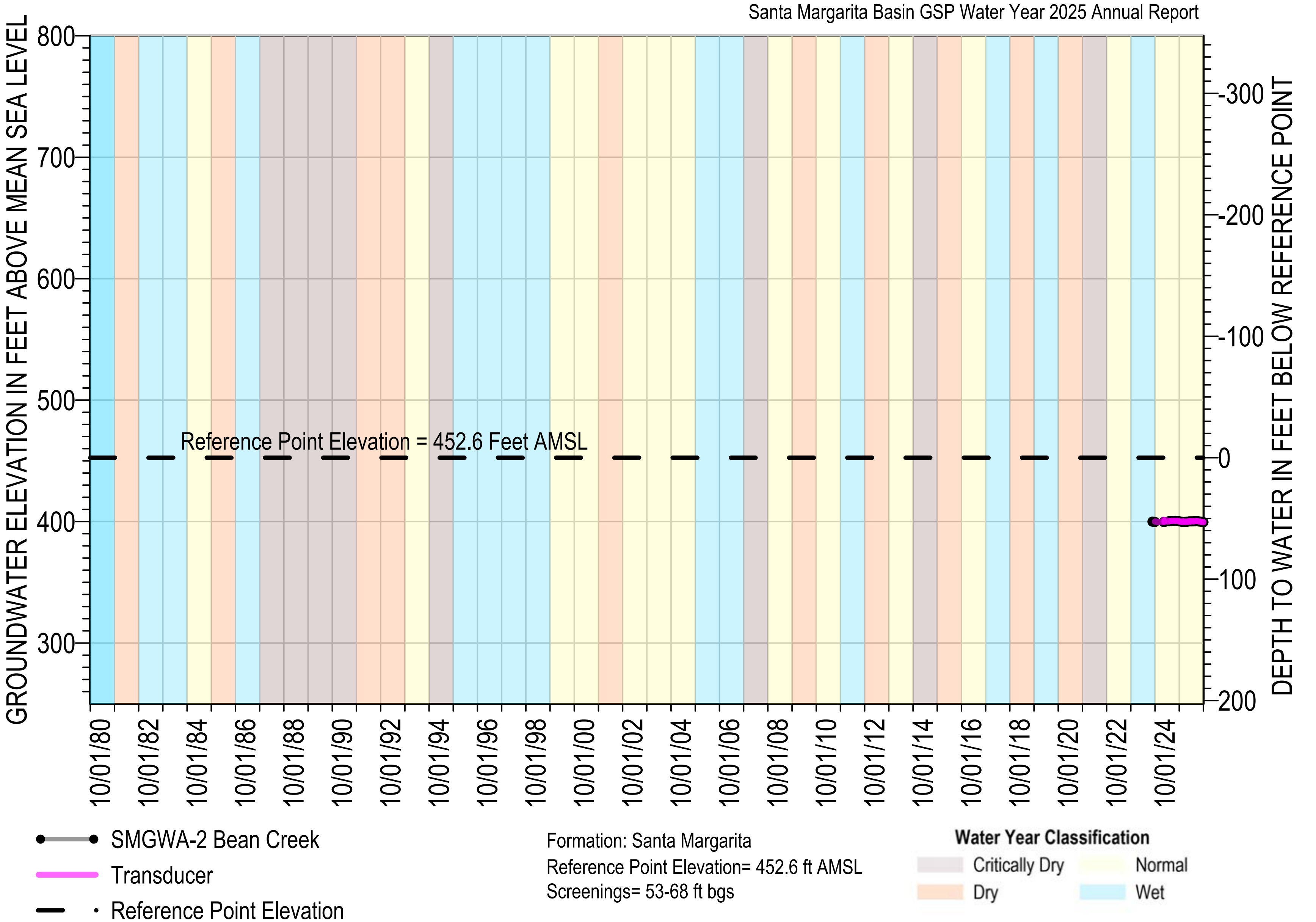
Figure C-5. Hydrograph of Station SLVWD Quail #5A



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 C-6. Hydrograph of Station SLVWD Quail MW-C

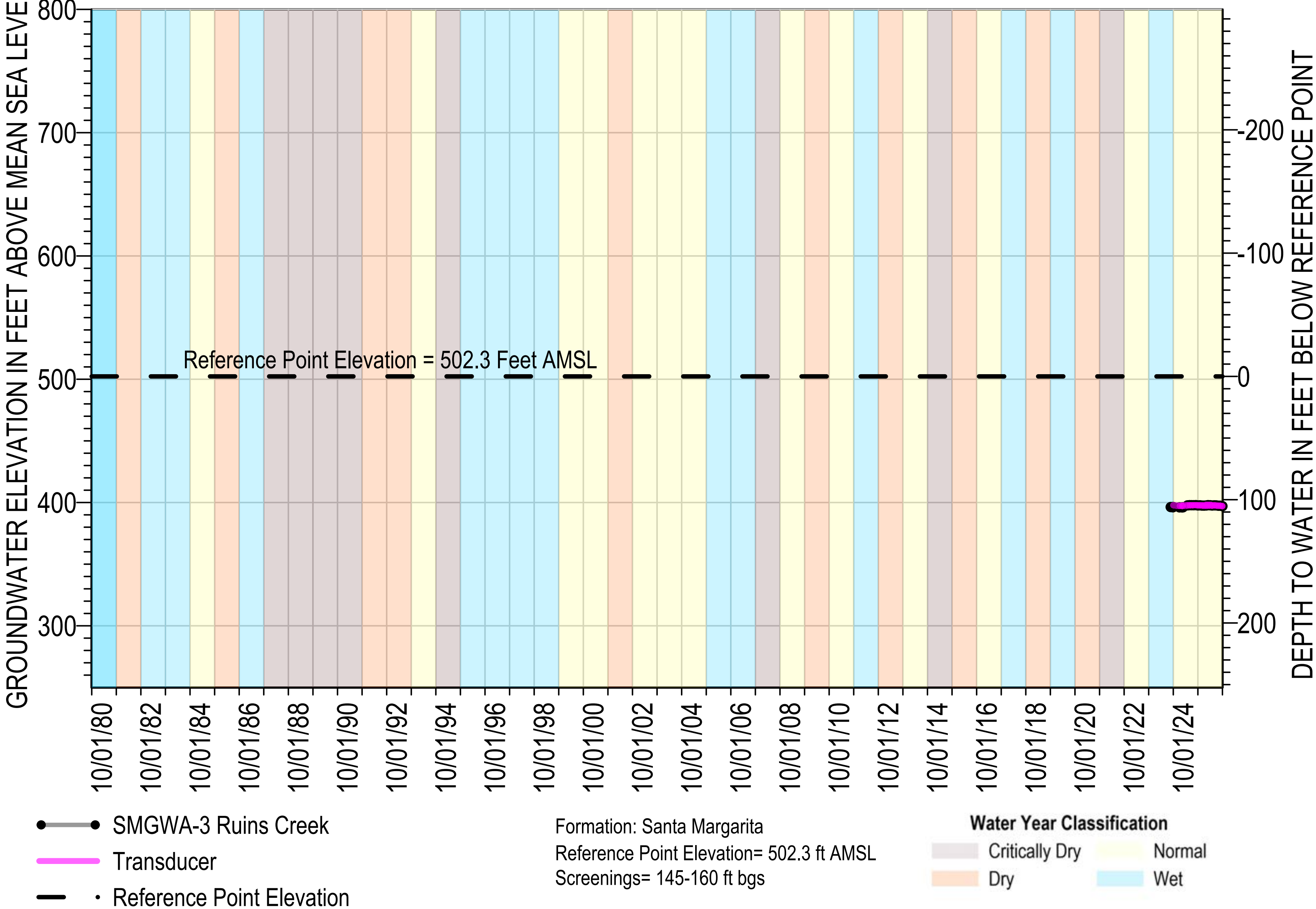
MONTGOMERY & ASSOCIATES



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.

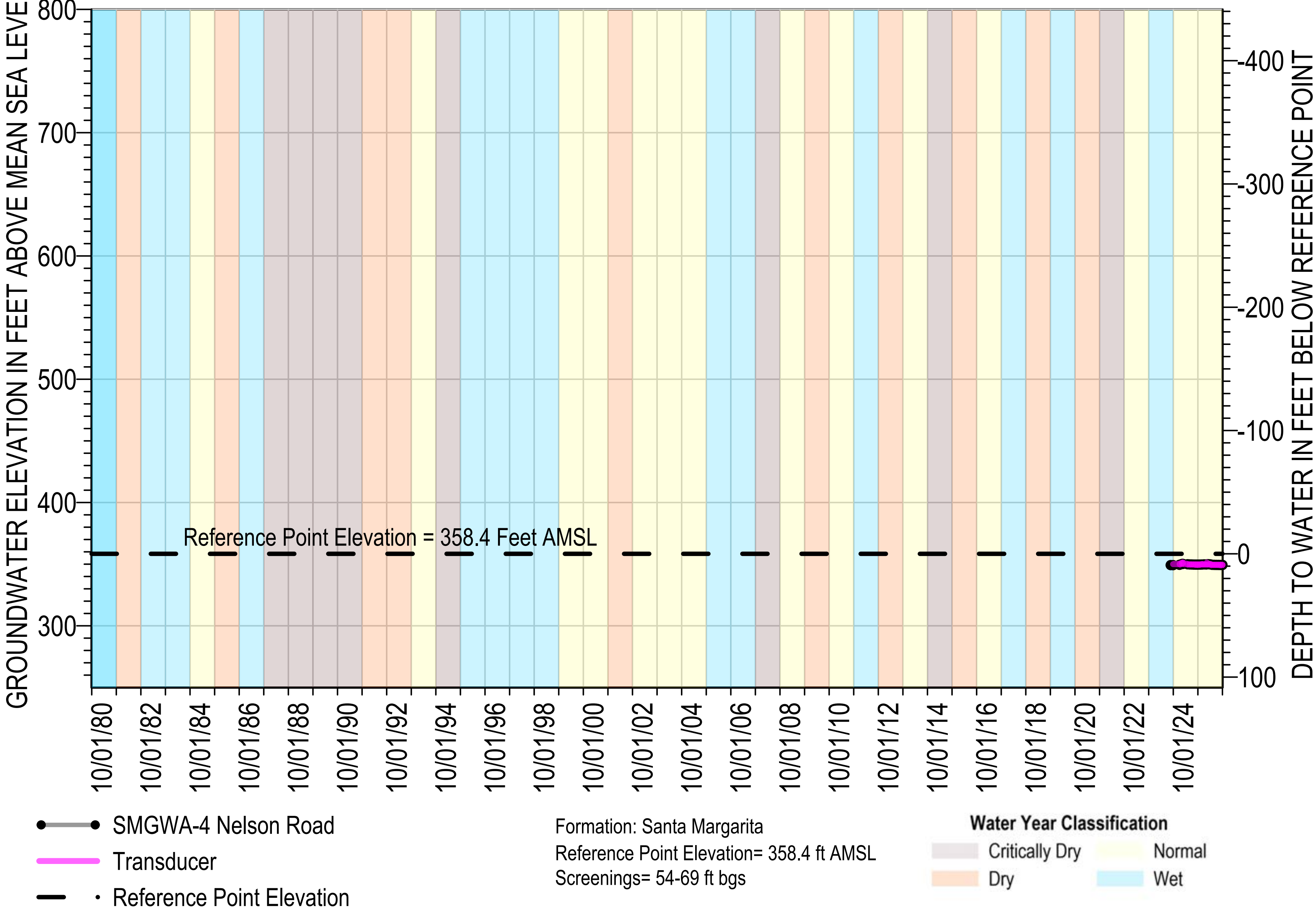
Figure C-7. Hydrograph of Station SMGWA-2 Bean Creek

MONTGOMERY & ASSOCIATES



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.

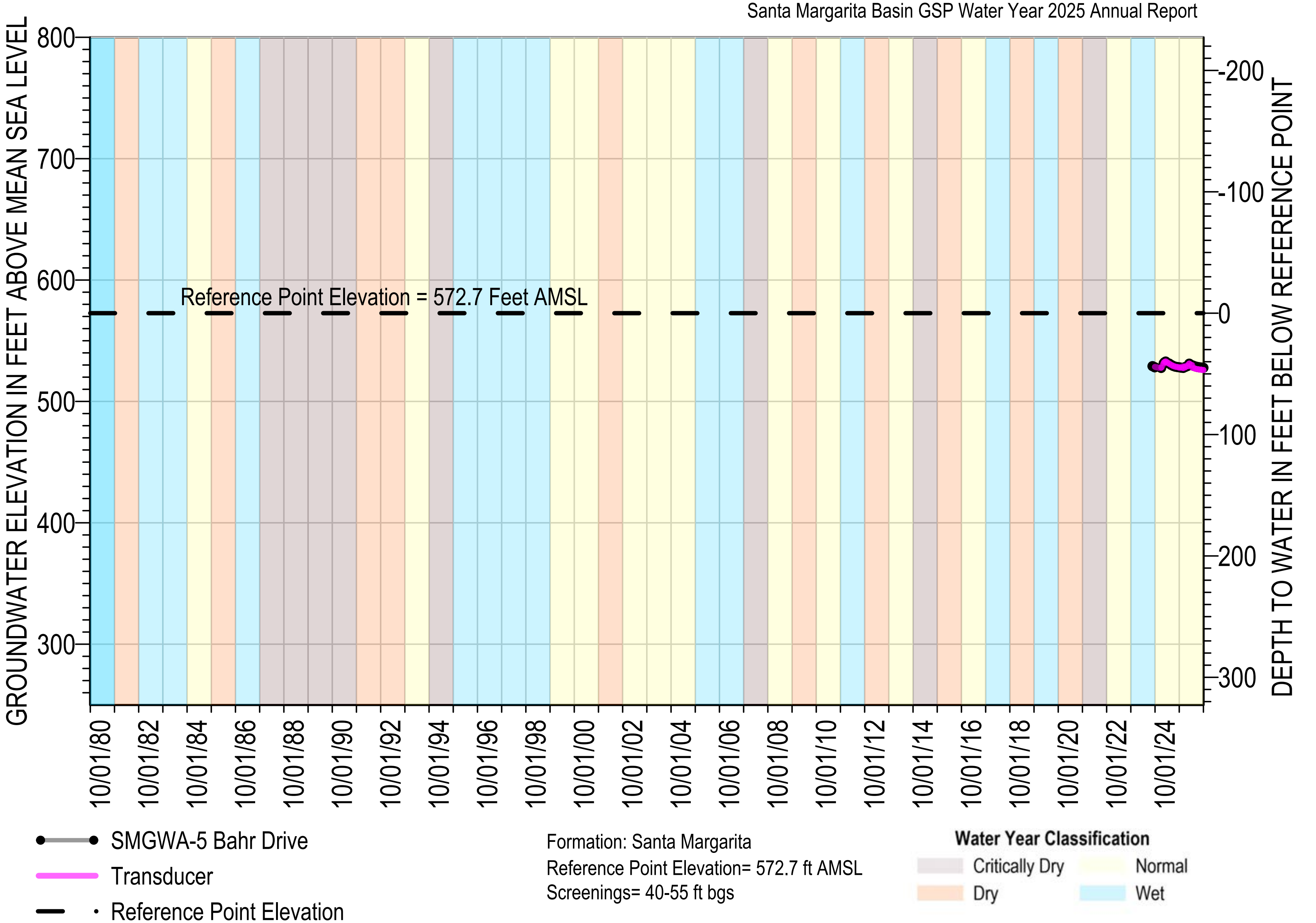
Figure C-8. Hydrograph of Station SMGWA-3 Ruins Creek



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.

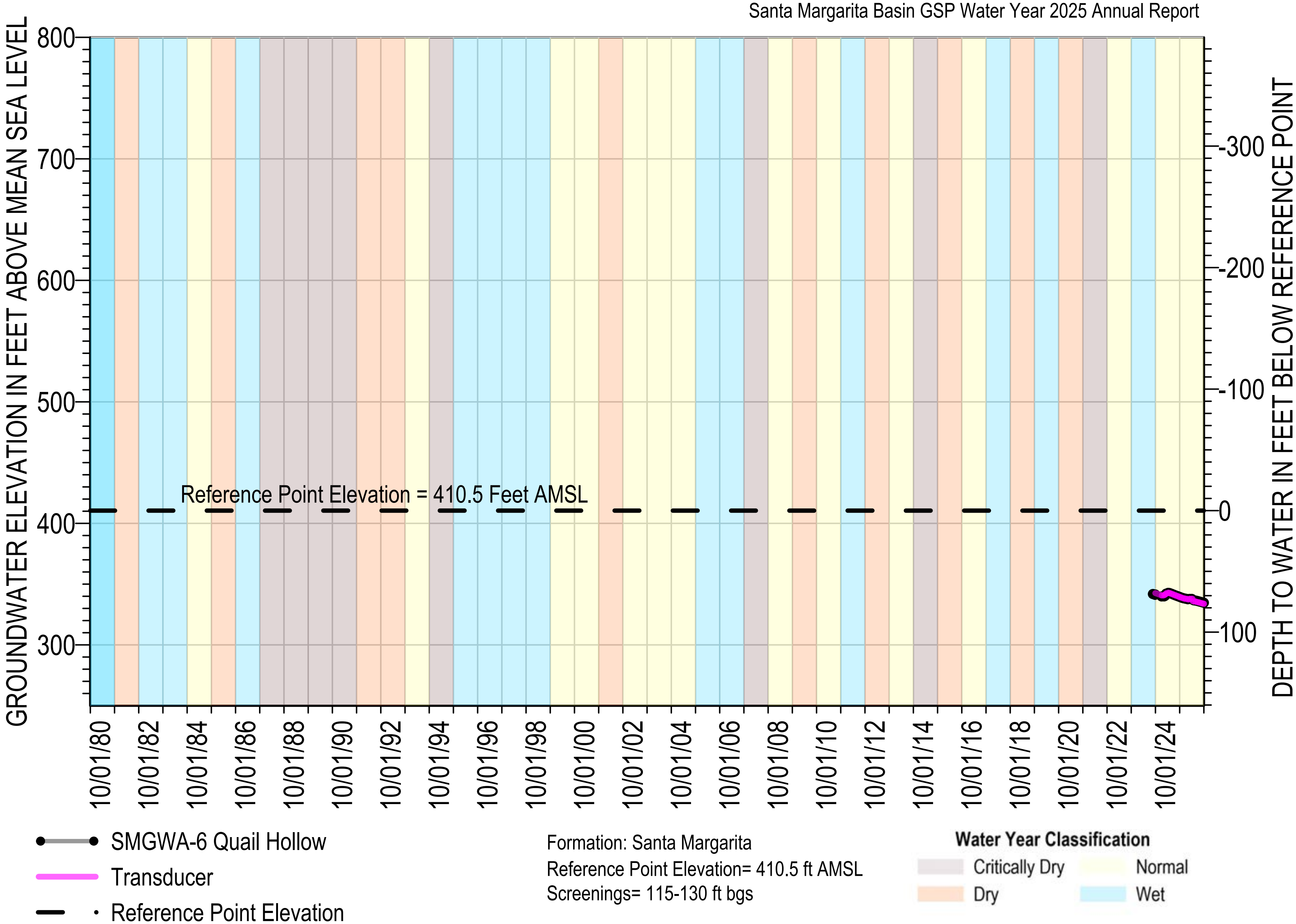
Figure C-9. Hydrograph of Station SMGWA-4 Nelson Road

MONTGOMERY & ASSOCIATES



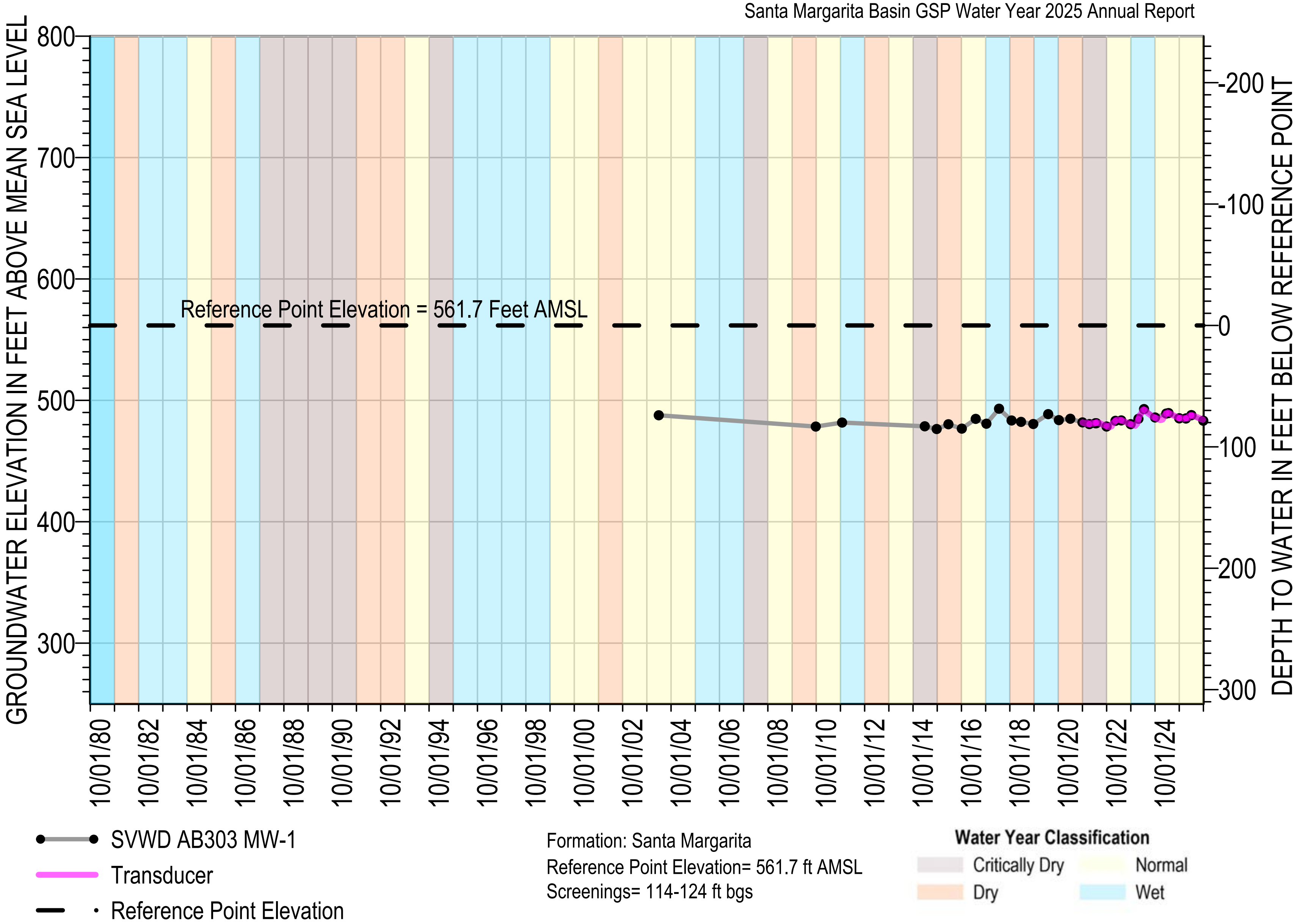
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure C-10. Hydrograph of Station SMGWA-5 Bahr Drive



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.

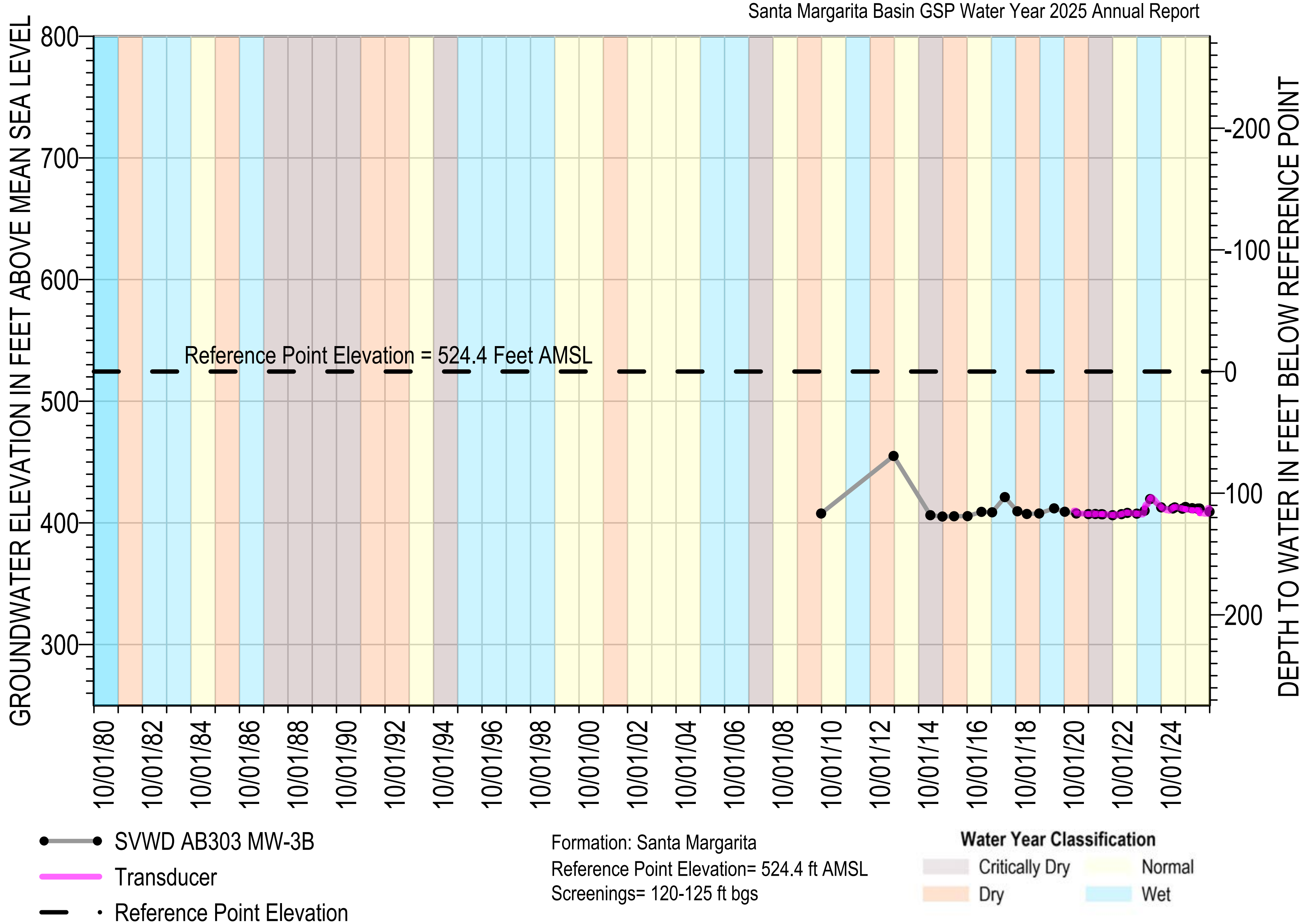
Figure C-11. Hydrograph of Station SMGWA-6 Quail Hollow



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 C-12. Hydrograph of Station SVWD AB303 MW-1

MONTGOMERY & ASSOCIATES



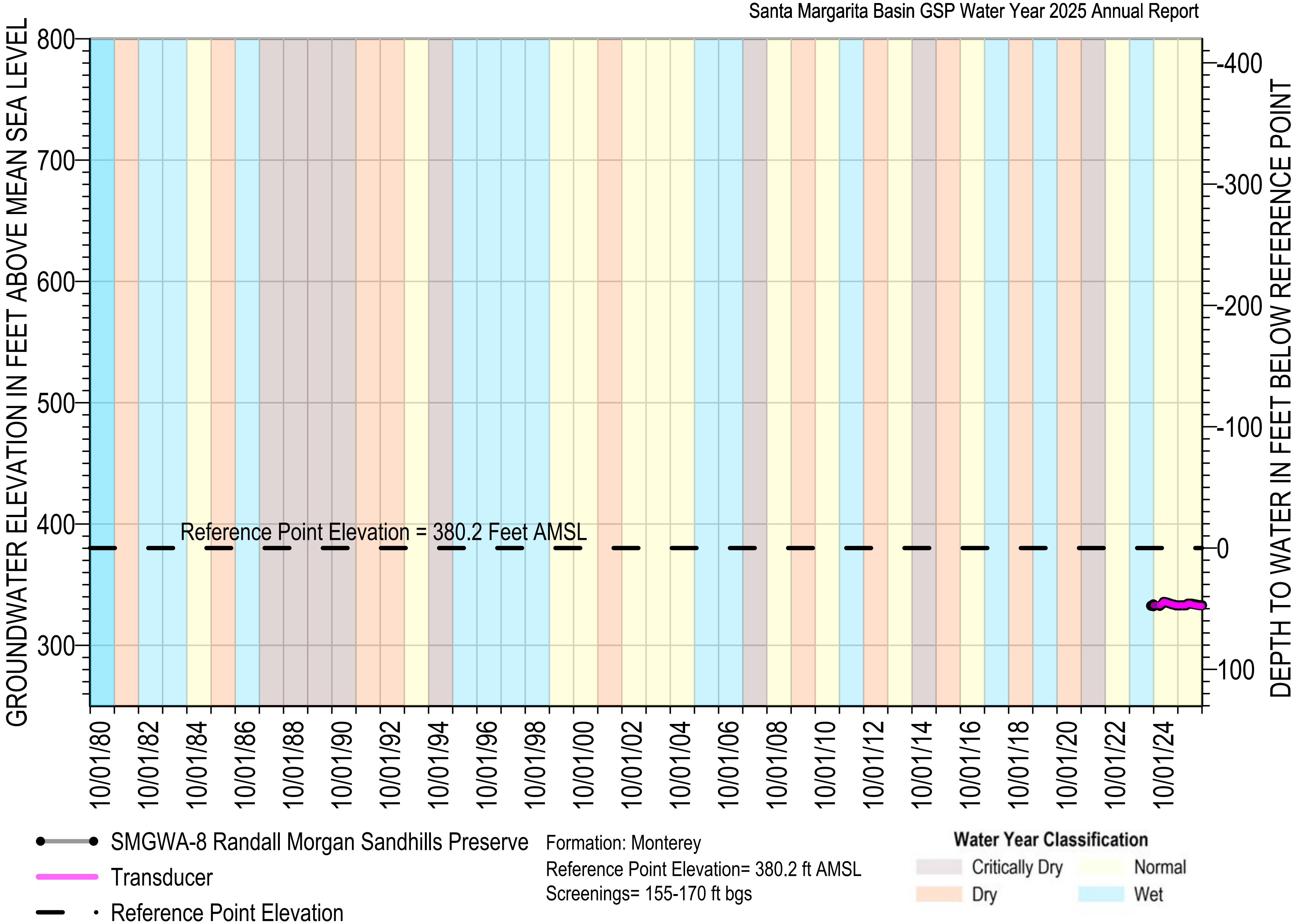
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure C-13. Hydrograph of Station SVWD AB303 MW-3B

MONTGOMERY
& ASSOCIATES

Appendix C

Monterey Formation



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.

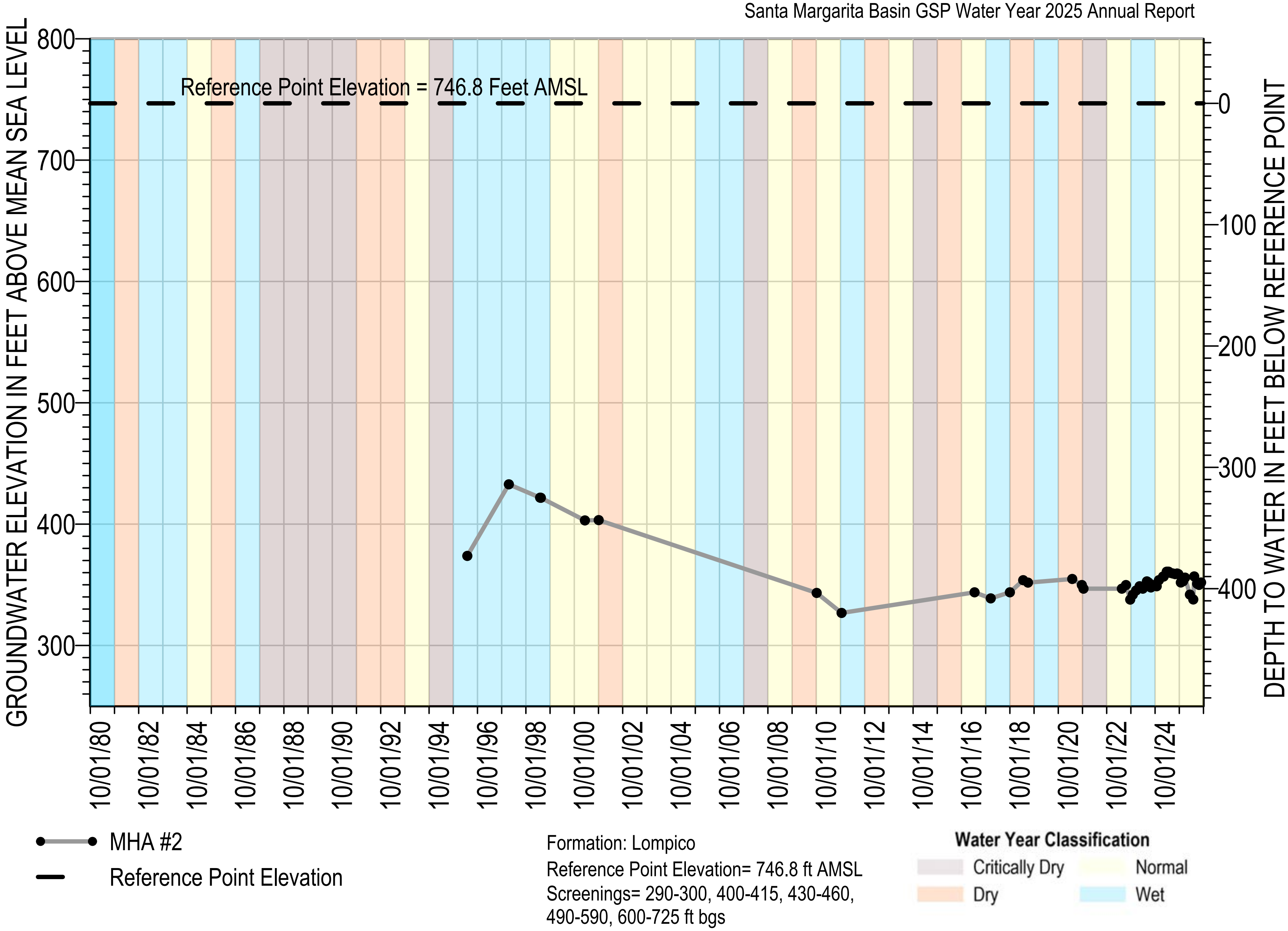
Figure C-14. Hydrograph of Station SMGWA-8 Randall Morgan Sandhill Preserve

MONTGOMERY & ASSOCIATES

MONTGOMERY
& ASSOCIATES

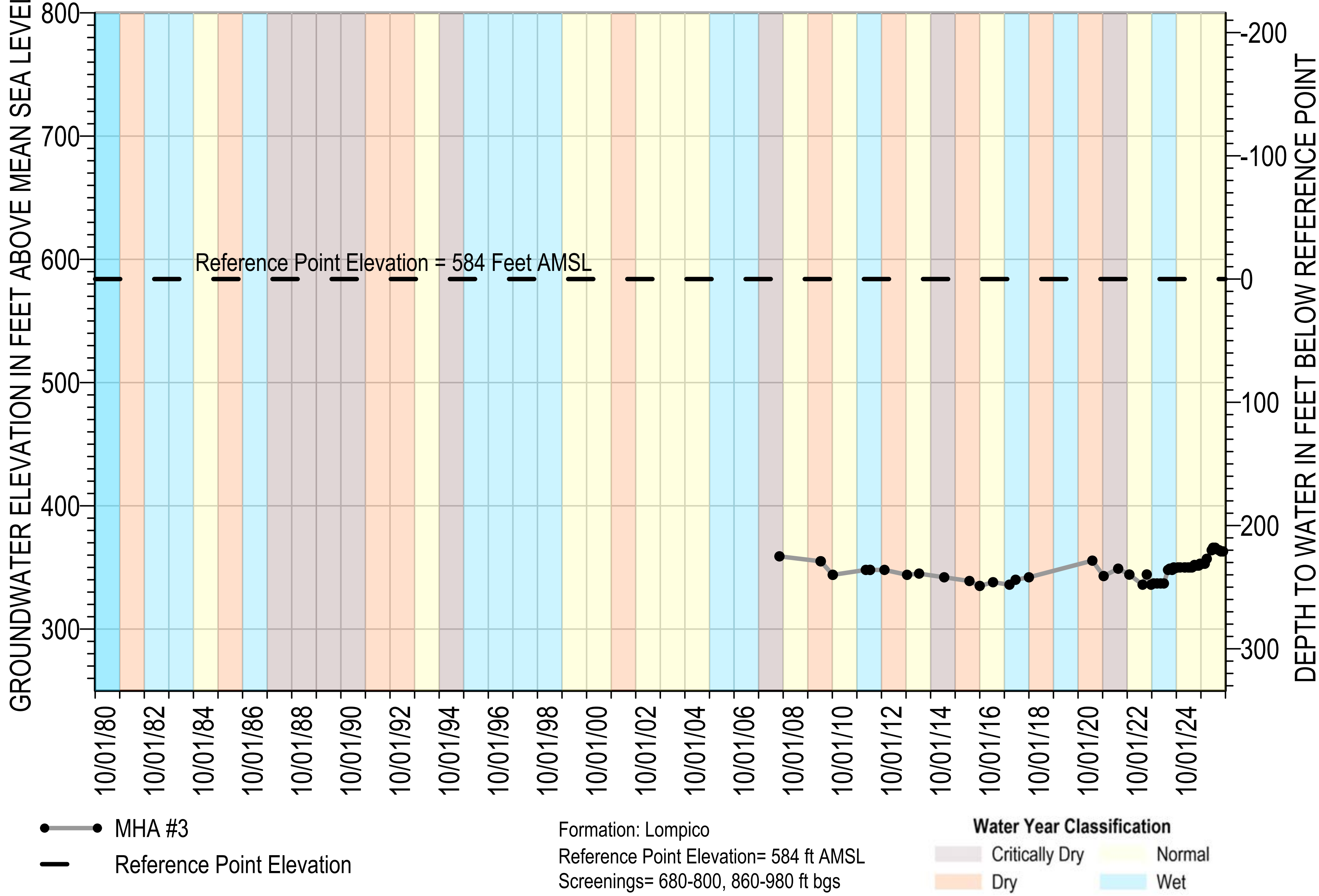
Appendix C

Lompico Sandstone



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.

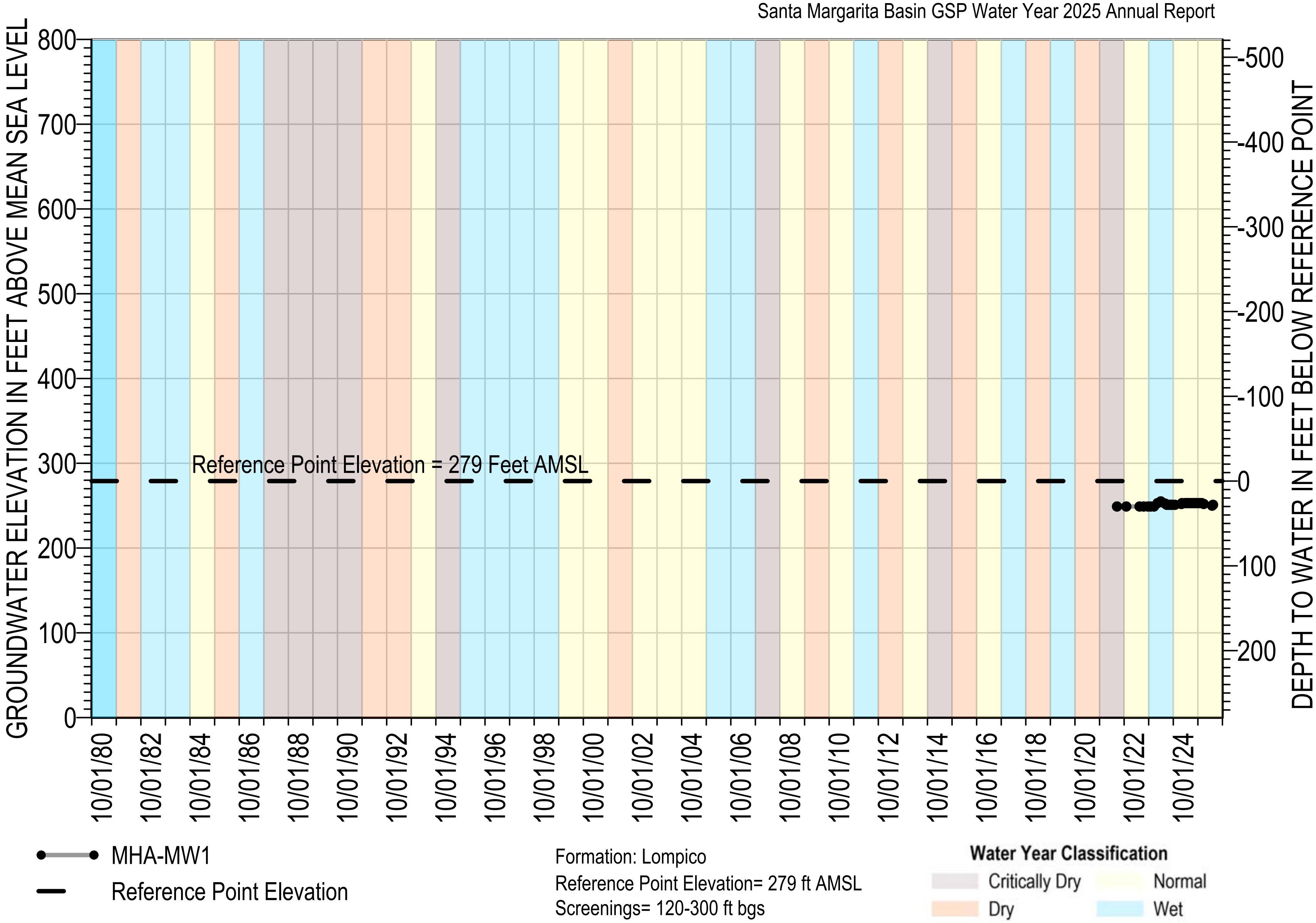
Figure C-15. Hydrograph of Station MHA #2



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 C-16. Hydrograph of Station MHA #3

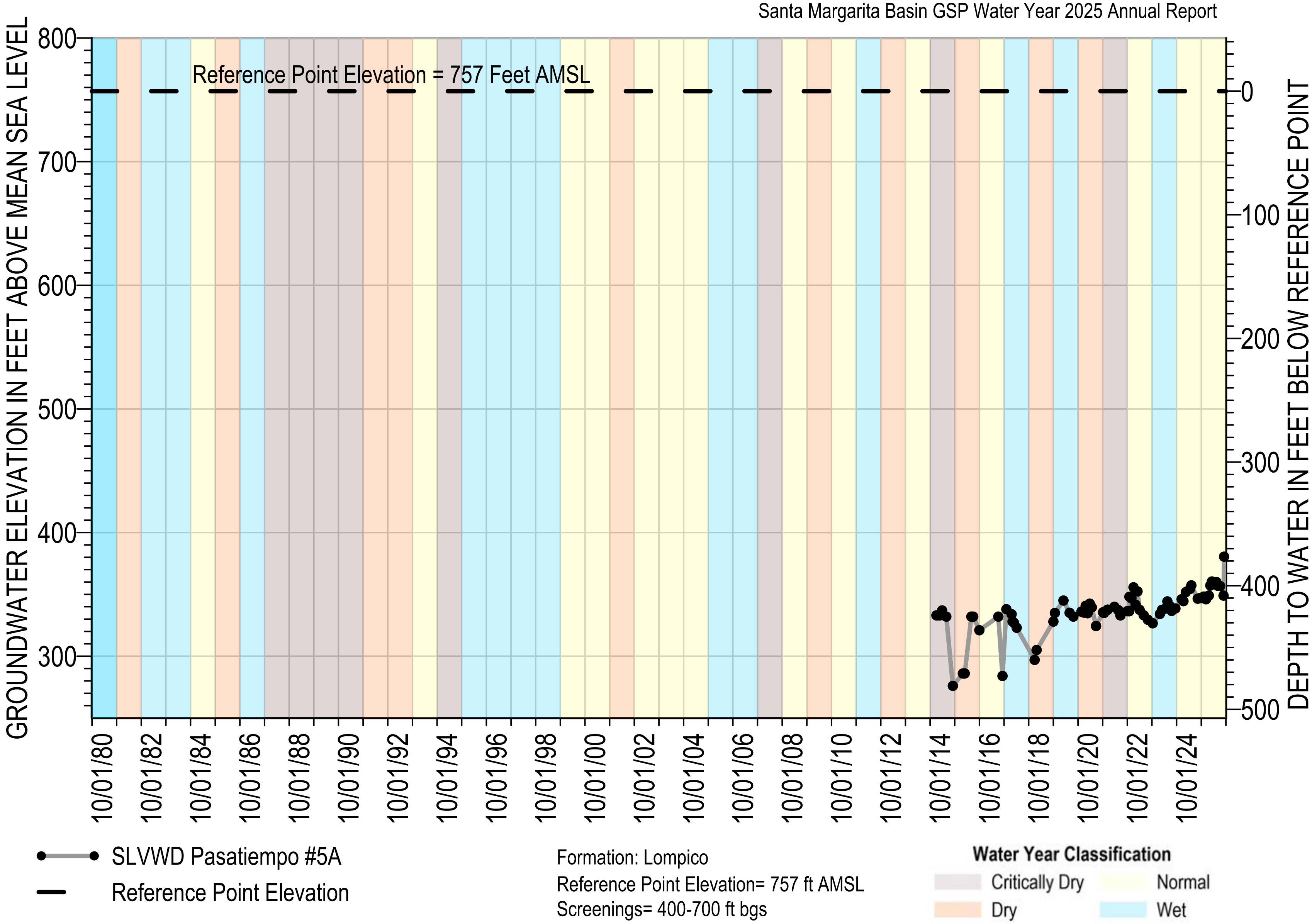
MONTGOMERY & ASSOCIATES



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.

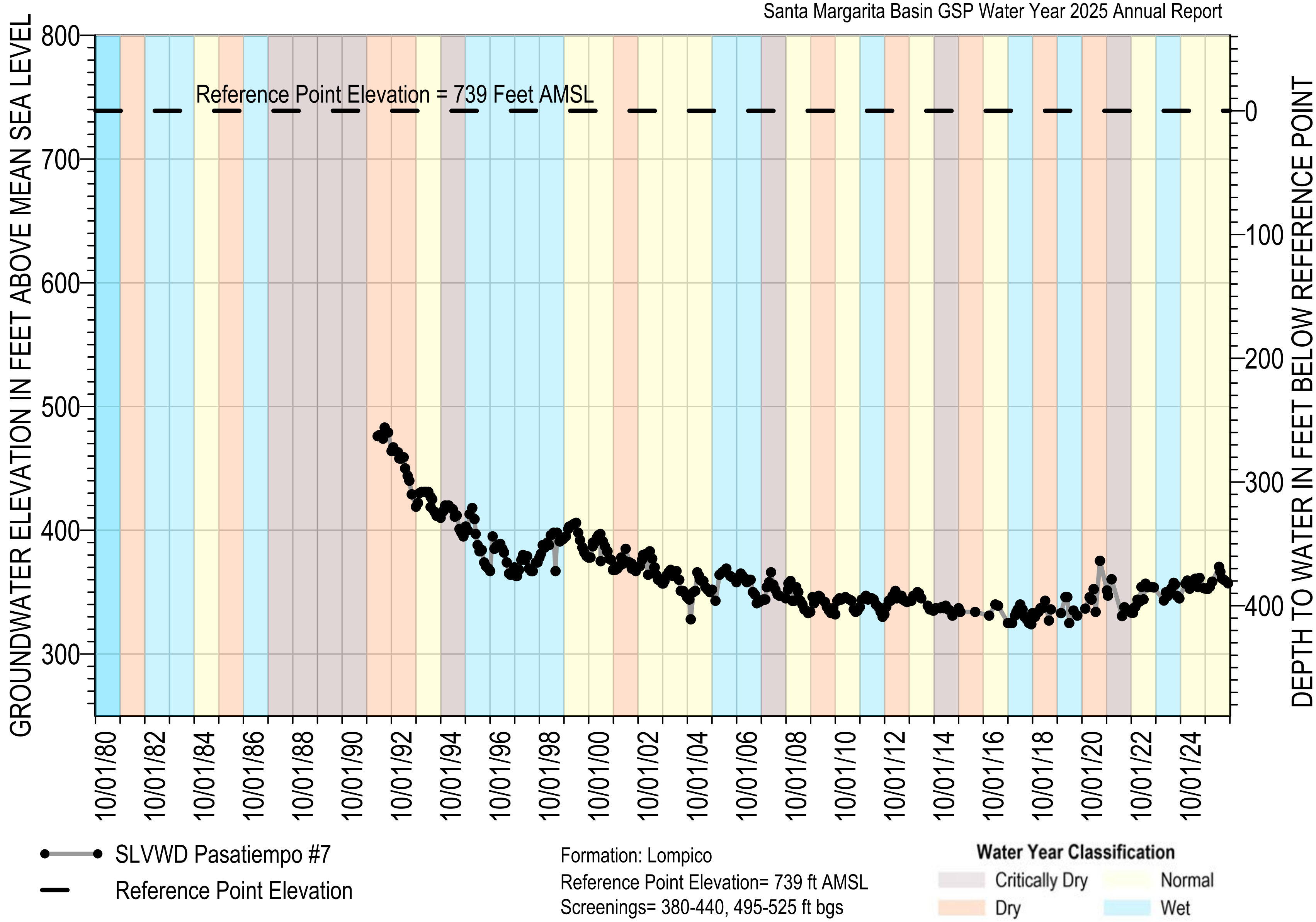
Figure C-17. Hydrograph of Station MHA-MW1

MONTGOMERY & ASSOCIATES



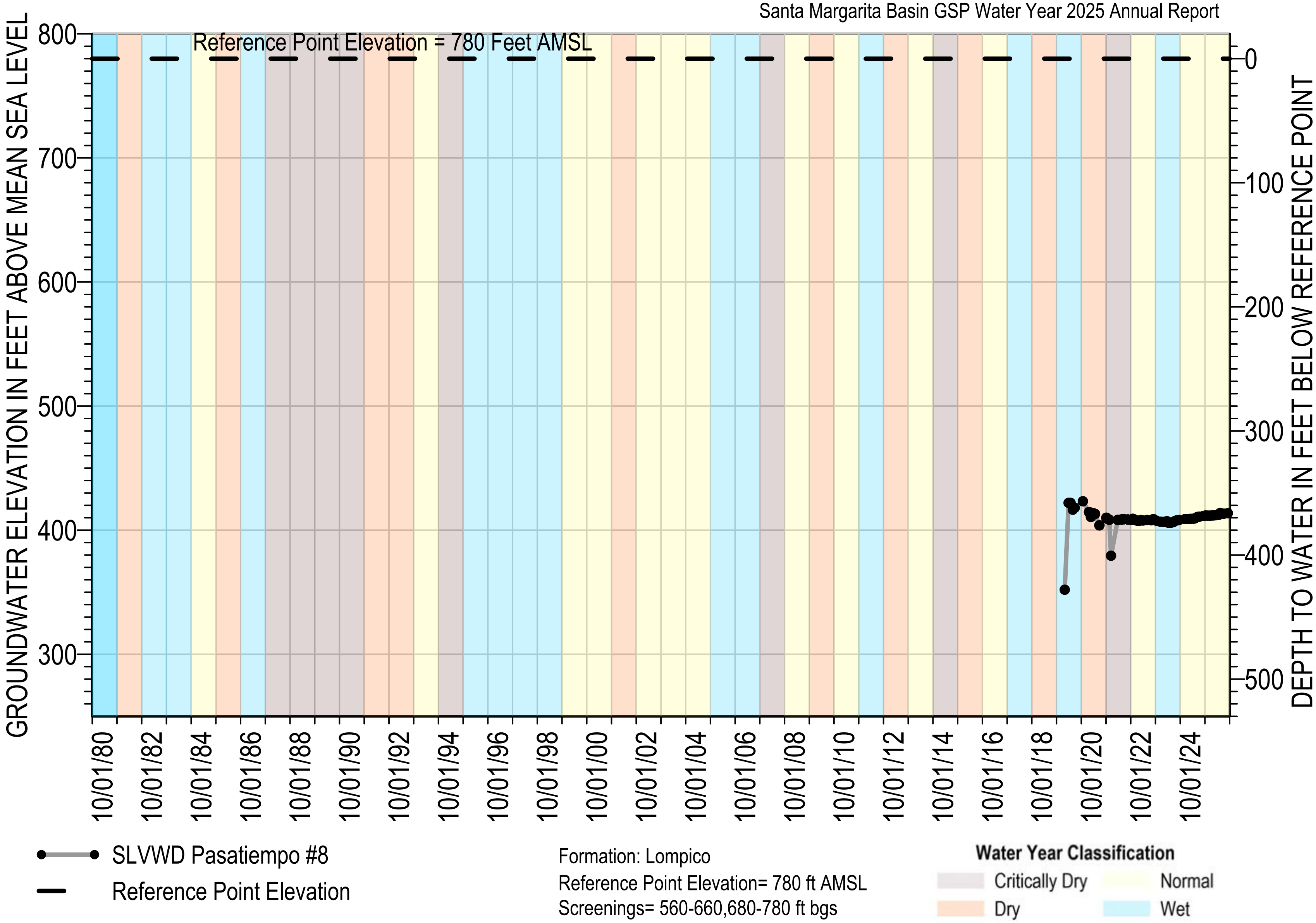
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure C-18. Hydrograph of Station SLVWD Pasatiempo #5A



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.

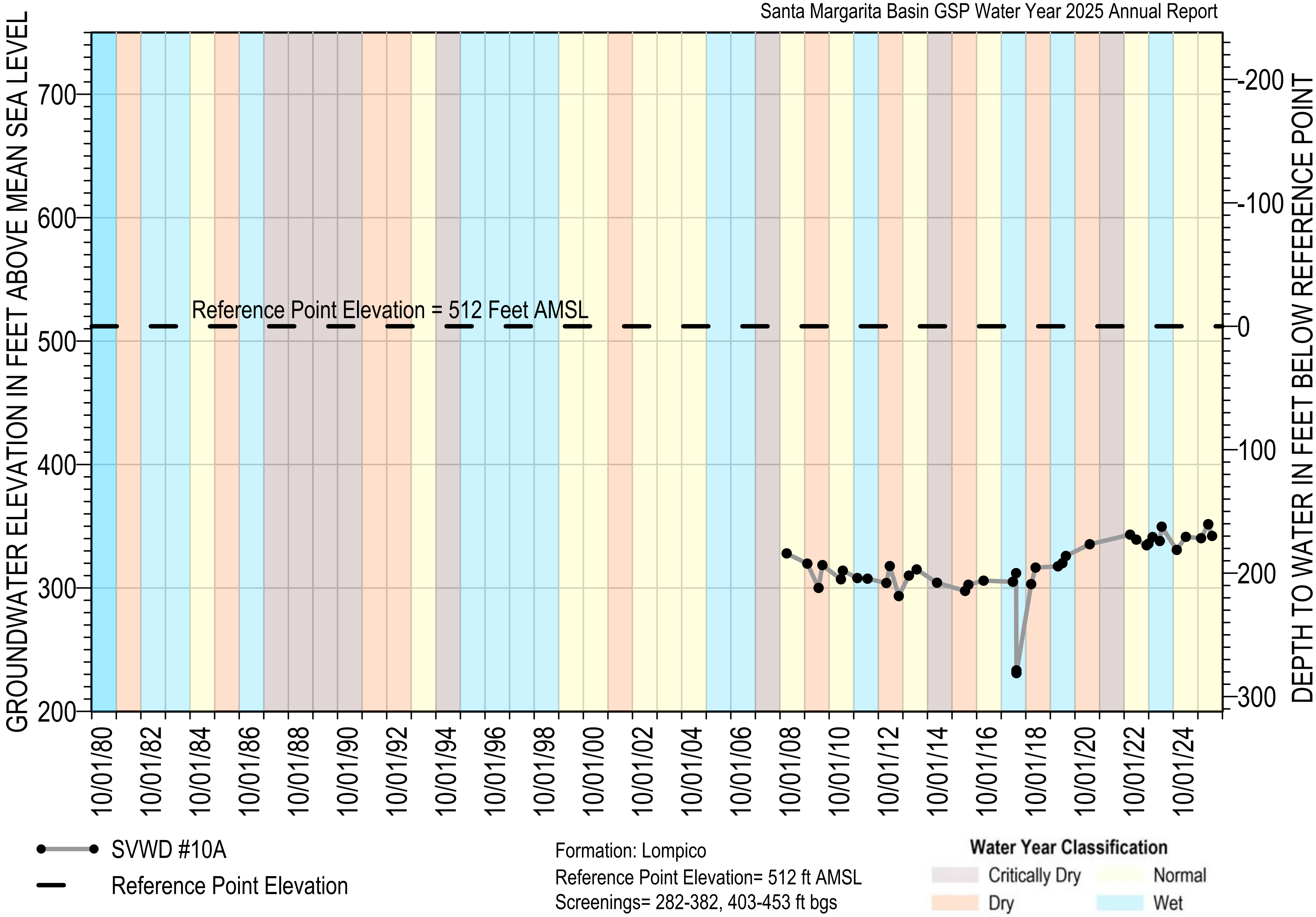
Figure C-19. Hydrograph of Station SLVWD Pasatiempo #7



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 C-20. Hydrograph of Station SLVWD Pasatiempo #8

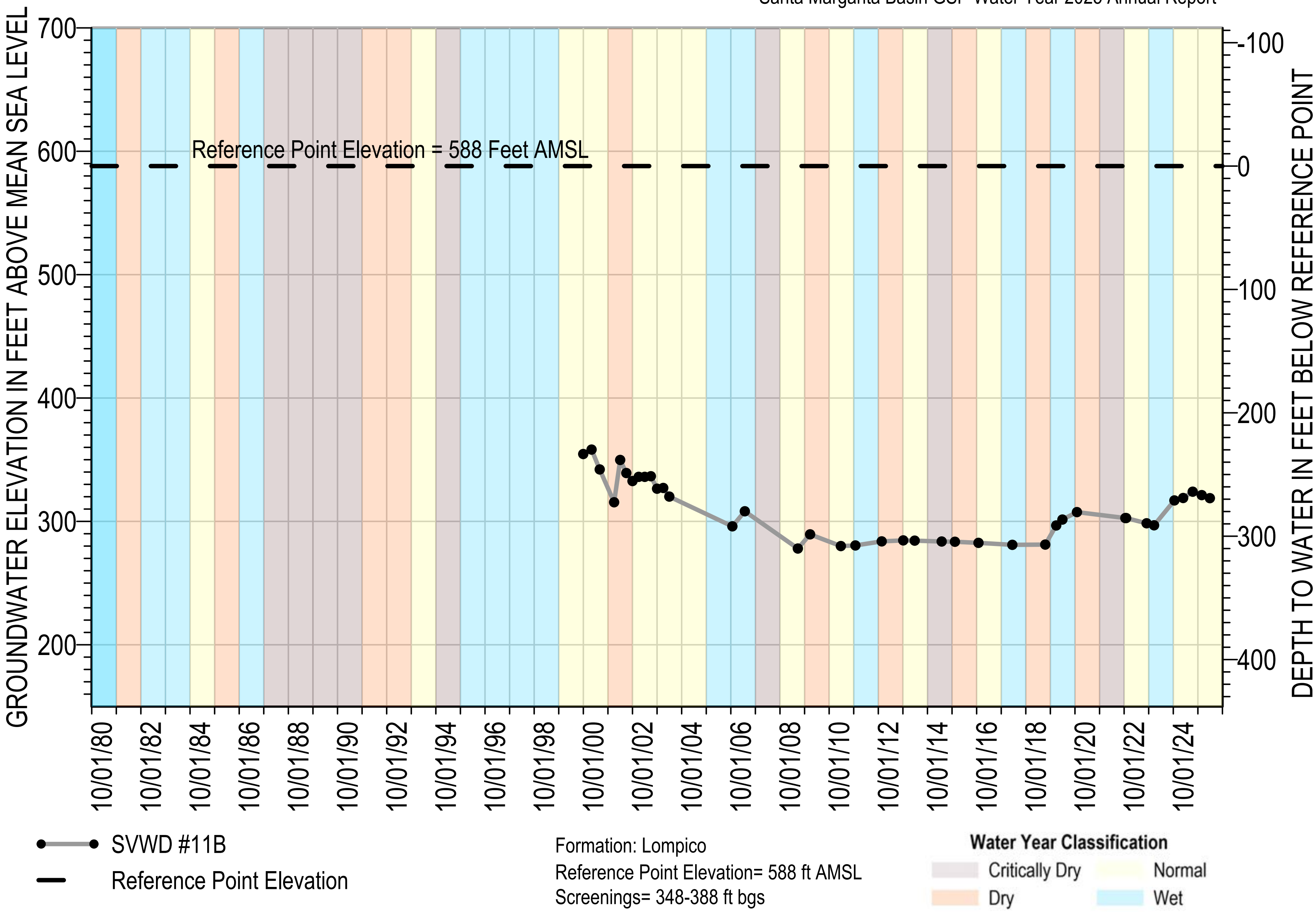
MONTGOMERY & ASSOCIATES



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 C-21. Hydrograph of Station SVWD #10A

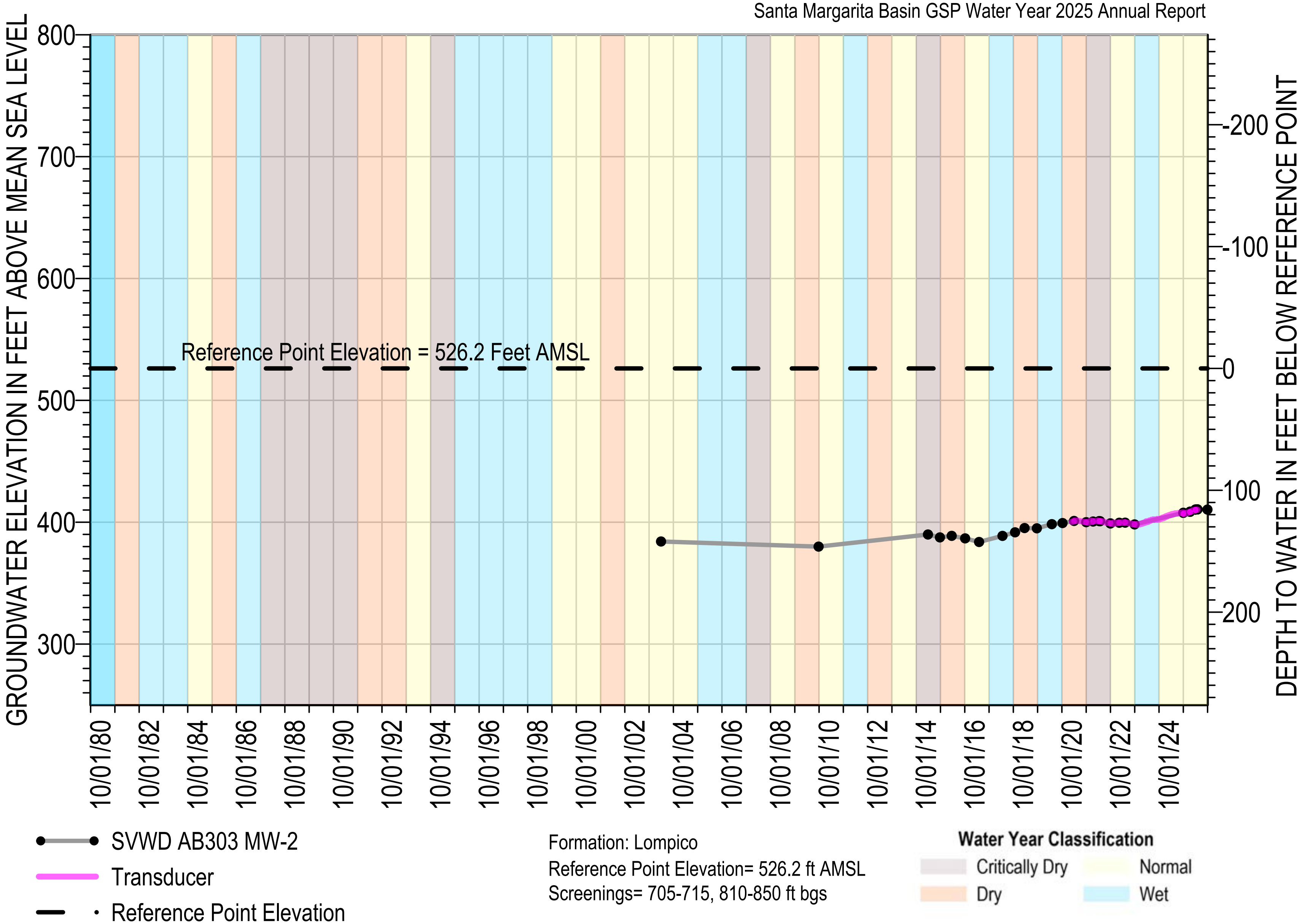
MONTGOMERY & ASSOCIATES



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 C-22. Hydrograph of Station SVWD #11B

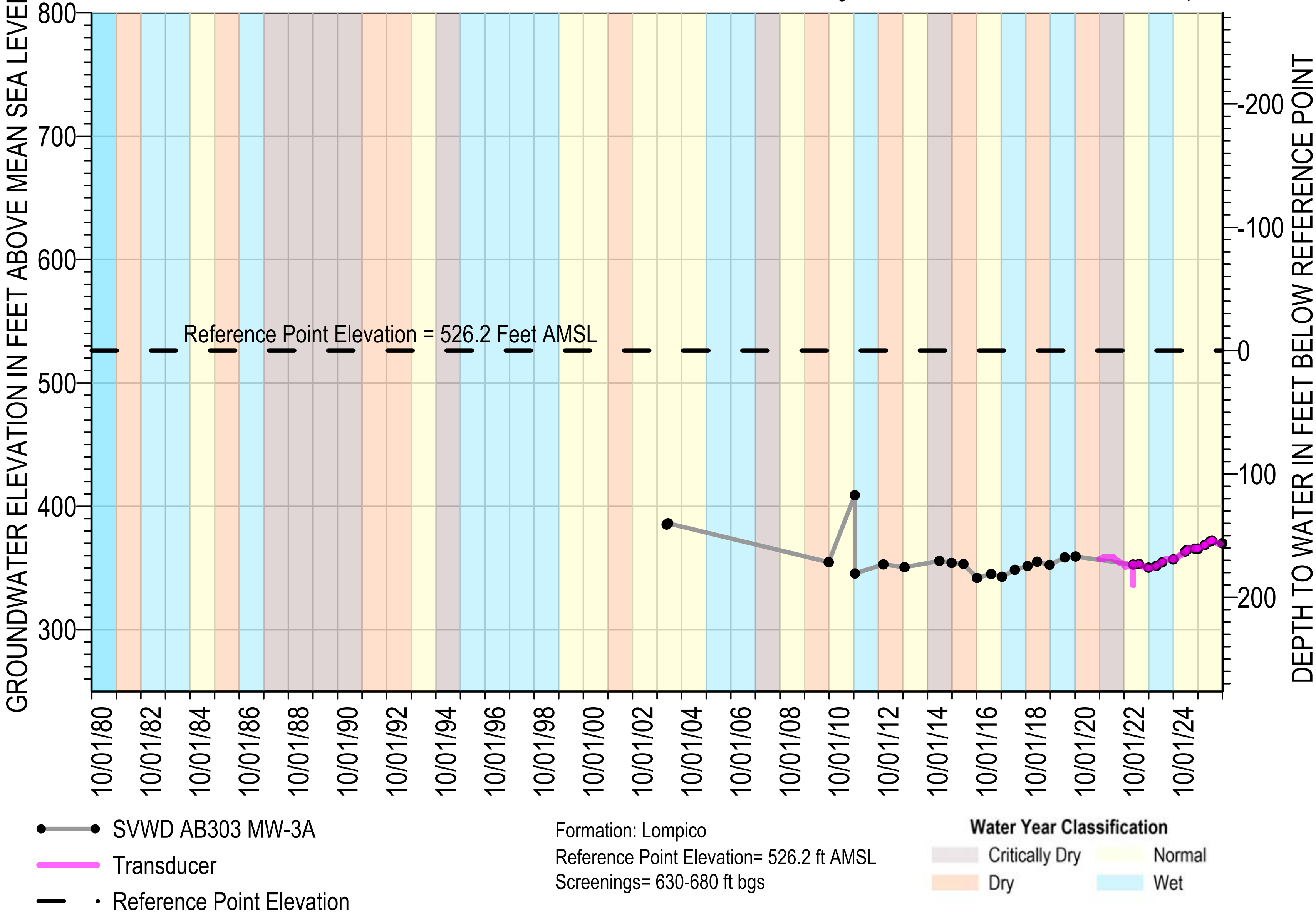
MONTGOMERY & ASSOCIATES



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.

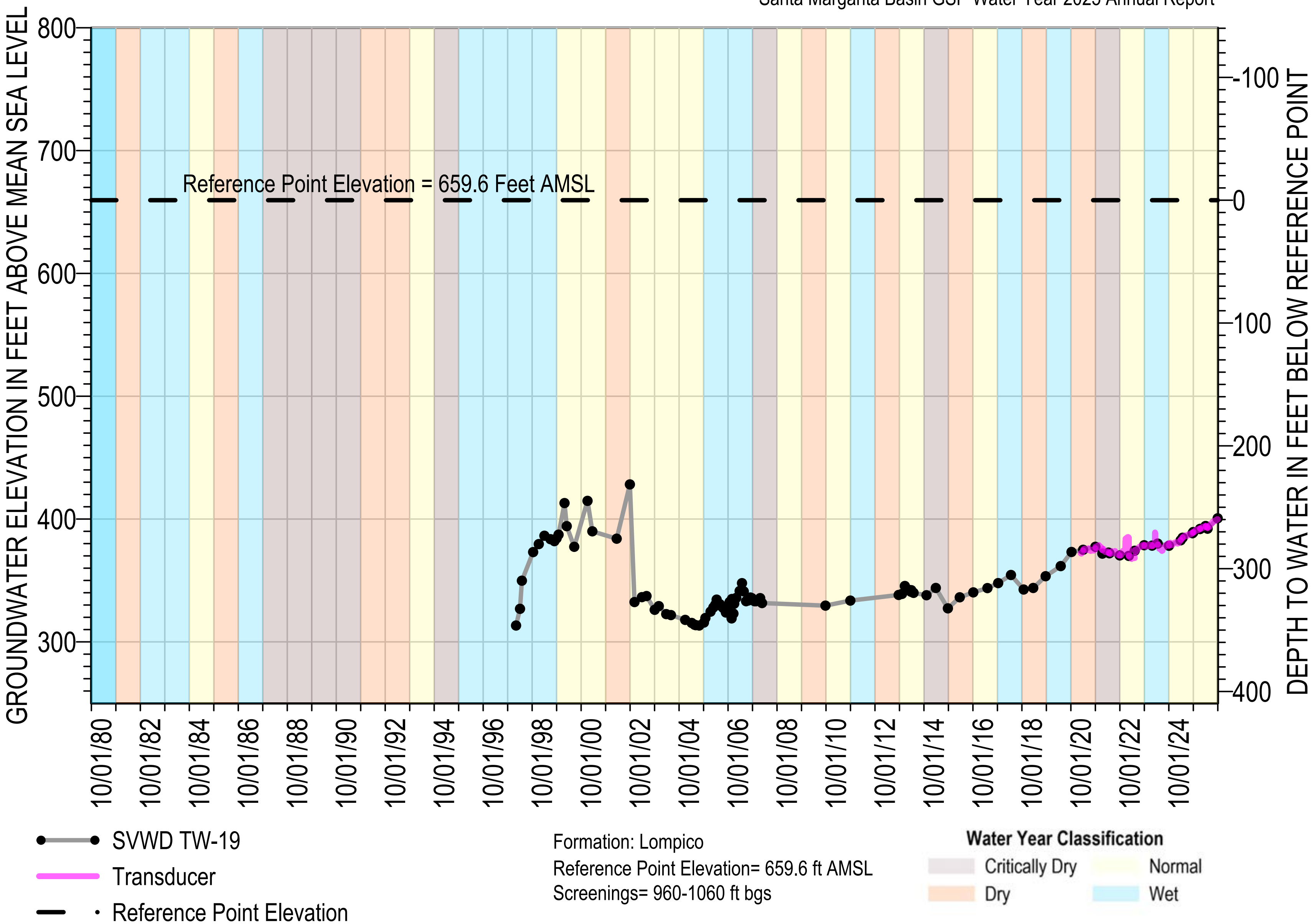
Figure C-23. Hydrograph of Station SVWD AB303 MW-2

MONTGOMERY & ASSOCIATES



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 C-24. Hydrograph of Station SVWD AB303 MW-3A



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.

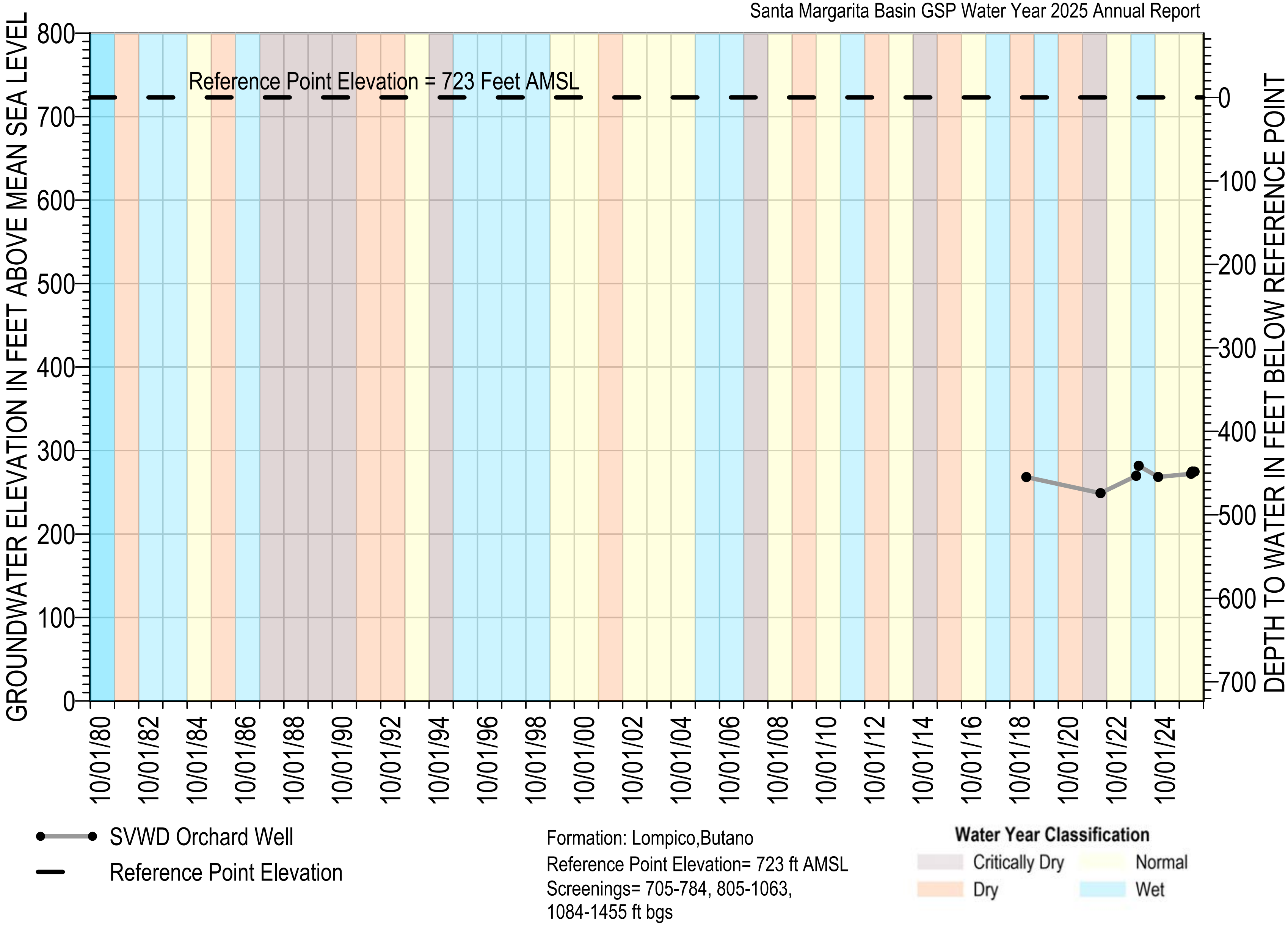
Figure C-25. Hydrograph of Station SVWD TW-19

MONTGOMERY & ASSOCIATES

MONTGOMERY
& ASSOCIATES

Appendix C

Lompico/Butano Sandstone



Formation: Lompico,Butano
Reference Point Elevation= 723 ft AMSL
Screenings= 705-784, 805-1063,
1084-1455 ft bgs

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 C-26. Hydrograph of Station SVWD Orchard Well

MONTGOMERY & ASSOCIATES

MONTGOMERY
& ASSOCIATES

Appendix D

Water Quality Data

Santa Margarita Basin Groundwater Quality Data for WY 2025

Constituent	1,2-DCE	Arsenic	Chloride	Chlorobenzene	Iron	Manganese	MTBE	Nitrate as Nitrogen	PCE	TDS	TCE
MT	0.07	0.01	250	0.07	0.3	0.05	0.013	5	0.005	1000	0.005
SLVWD Olympia #3											
MO	0.0005	0.002	8.85	0.001	0.502	0.157	0.003	0.4	0.0005	573	0.0005
11/14/2024					0.22	0.14					
2/10/2025		ND			0.23	0.15					
5/14/2025	ND	ND	8.9	ND	0.3	0.15	ND	ND	ND	740	ND
8/12/2025		ND			0.16	0.14					
SLVWD Pasatiempo #7											
MO	0.0005	0.002	7.4	0.001	0.539	0.099	0.003	0.33	0.0005	143	0.0005
10/8/2024		ND			0.09	0.027					
11/5/2024		ND			0.11	0.023					
12/10/2024		ND			0.11	0.023					
1/7/2025		ND			0.38	0.082					
2/4/2025		ND			0.1	0.023					
3/4/2025		ND			0.76	0.084					
4/8/2025		ND			0.55	0.11					
5/14/2025	ND	ND	7.3	ND	0.55	0.11	ND	ND	ND	150	ND
6/10/2025		ND			0.09	0.022					
7/8/2025		ND			0.13	0.03					
8/5/2025		ND			0.12	0.027					
9/9/2025		ND			0.14	0.03					
SLVWD Quail #5A											
MO	0.0005	0.002	8	0.001	0.02	0.003	0.003	2.13	0.0005	123	0.0005
05/14/2025	ND	0.0015	8.5	ND	ND	ND	ND	2.3	ND	110	ND
SVWD #10A											
MO	0.0005	0.002	30.6	0.001	1.51	0.099	0.003	0.39	0.0005	290	0.0005
11/13/2024		ND			0.99	0.11					
5/21/2025					0.76	0.11					
9/9/2025	ND	ND	33		1.6	0.12	ND	ND	ND	300	ND

MT - Minimum Threshold, MO - Measurable Objective, RMP - Representative Monitoring Point
ND - Not Detected above reporting limit, all values are in mg/L
Values above MT in bold

MONTGOMERY & ASSOCIATES

Santa Margarita Basin Groundwater Quality Data for WY 2025

Constituent	1,2-DCE	Arsenic	Chloride	Chlorobenzene	Iron	Manganese	MTBE	Nitrate as Nitrogen	PCE	TDS	TCE
MT	0.07	0.01	250	0.07	0.3	0.05	0.013	5	0.005	1000	0.005
SVWD #11A											
MO	0.0005	0.003	27.1	0.001	0.459	0.112	0.003	0.4	0.0005	525	0.0005
05/21/2025		0.002			0.32	0.12					
09/10/2025	ND	ND	27	0.0009	0.31	0.11	ND	ND	ND	540	ND
SVWD #11B											
MO	0.0005	0.009	21.3	0.001	0.826	0.077	0.003	0.4	0.0005	367	0.0005
05/21/2025		0.0098			0.59	0.065					
09/11/2025	ND	0.0096	21		0.49	0.062	ND	ND	ND	360	ND
SVWD Orchard Well											
MO	0.0005	0.002	26.3	0.001	0.063	0.004	0.003	0.4	0.0005	450	0.0005
05/29/2025			64		ND	0.0029				530	
07/15/2025	ND	ND	52		ND	0.0028	ND	ND	ND	500	ND
SLVWD Olympia #2											
MO	MO not defined because well is not an RMP										
11/14/2024					0.48	0.19					
02/10/2025		ND			0.48	0.19					
05/14/2025	ND	ND	7.3	ND	0.6	0.18	ND	ND	ND	370	ND
08/12/2025		ND			0.32	0.18					
SLVWD Pasatiempo #5A											
MO	MO not defined because well is not an RMP										
10/08/2024		0.0016			0.04	0.0043					
11/05/2024		0.0015			0.05	0.004					
12/10/2024		0.0019			0.04	0.0041					
01/07/2025		0.002			0.26	0.01					
02/04/2025		0.0017			0.06	0.0047					
03/04/2025		0.0017			0.22	0.012					
04/08/2025		0.0015			0.18	0.01					
05/14/2025	ND	0.0015	6.9	ND	0.18	0.01	ND	0.07	ND	150	ND
06/10/2025		0.0015			0.03	0.0043					
07/08/2025		0.0016			0.04	0.0044					
08/05/2025		0.0017			0.04	0.0046					
09/09/2025		0.0017			0.04	0.0043					

MT - Minimum Threshold, MO - Measurable Objective, RMP - Representative Monitoring Point
ND - Not Detected above reporting limit, all values are in mg/L
Values above MT in bold

Santa Margarita Basin Groundwater Quality Data for WY 2025

Constituent	1,2-DCE	Arsenic	Chloride	Chlorobenzene	Iron	Manganese	MTBE	Nitrate as Nitrogen	PCE	TDS	TCE
MT	0.07	0.01	250	0.07	0.3	0.05	0.013	5	0.005	1000	0.005
SLVWD Pasatiempo #8											
MO	MO not defined because well is not an RMP										
10/08/2024		0.009			0.2	0.024					
11/05/2024		0.0086			0.19	0.023					
12/10/2024		0.0069			0.2	0.018					
01/07/2025		0.0073			0.27	0.018					
02/04/2025		0.007			0.37	0.019					
03/04/2025		0.0071			0.29	0.02					
04/08/2025		0.0064			0.19	0.02					
05/14/2025	ND	0.0064	8.5	ND	0.19	0.02	ND	ND	ND	160	ND
06/10/2025		0.0095			0.22	0.022					
07/08/2025		0.0096			0.16	0.023					
08/05/2025		0.0098			0.17	0.023					
09/09/2025		0.0096			0.18	0.023					
SLVWD Quail #4A											
MO	MO not defined because well is not an RMP										
05/14/2025	ND	0.0025	6.3		ND	ND	ND	0.57	ND	120	ND

MT - Minimum Threshold, MO - Measurable Objective, RMP - Representative Monitoring Point
ND - Not Detected above reporting limit, all values are in mg/L
Values above MT in bold

MONTGOMERY & ASSOCIATES

MONTGOMERY
& ASSOCIATES

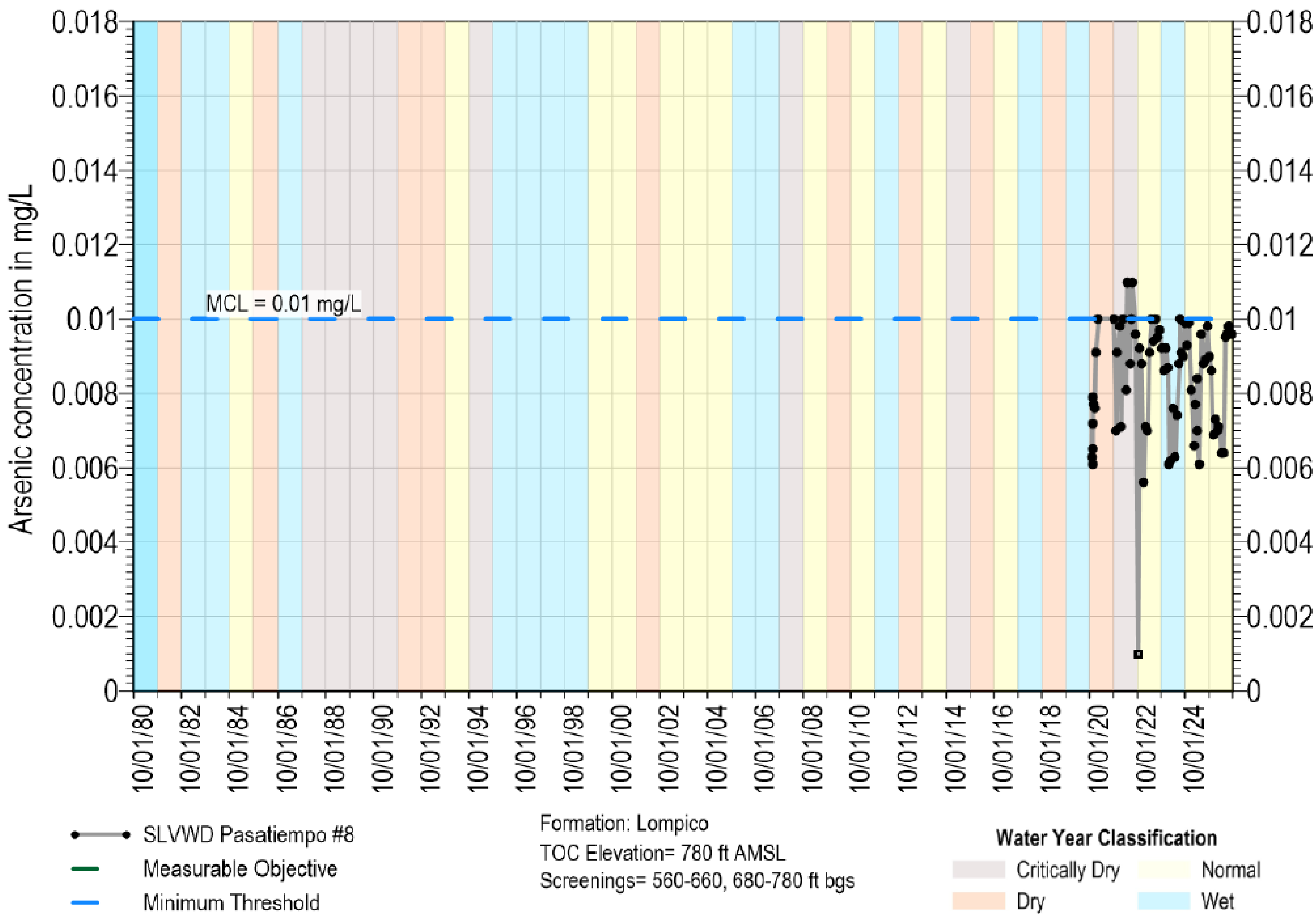
Appendix E

Well Chemographs

MONTGOMERY & ASSOCIATES

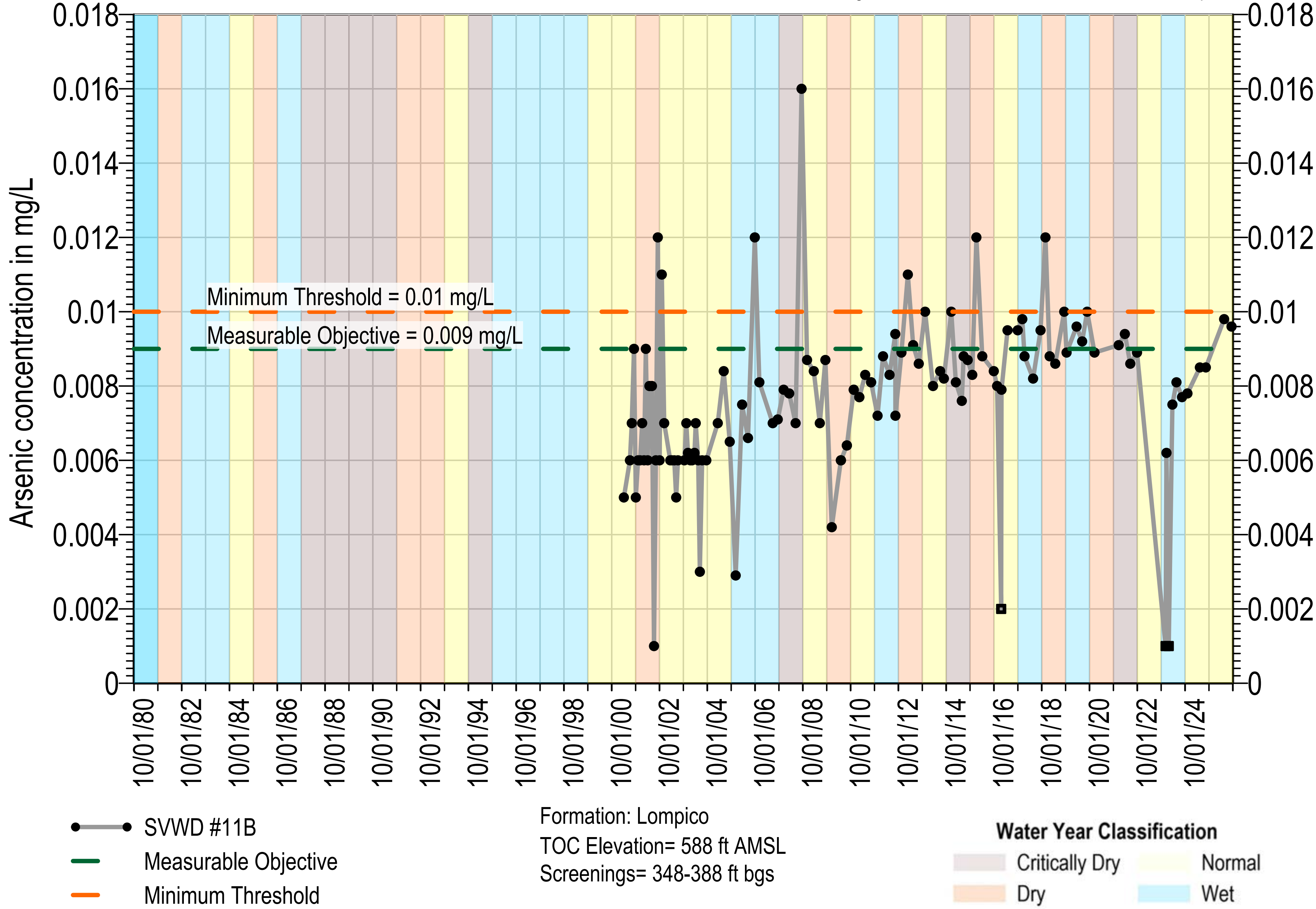
Appendix E

Arsenic



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-1. Chemograph of Station SLVWD Pasatiempo #8



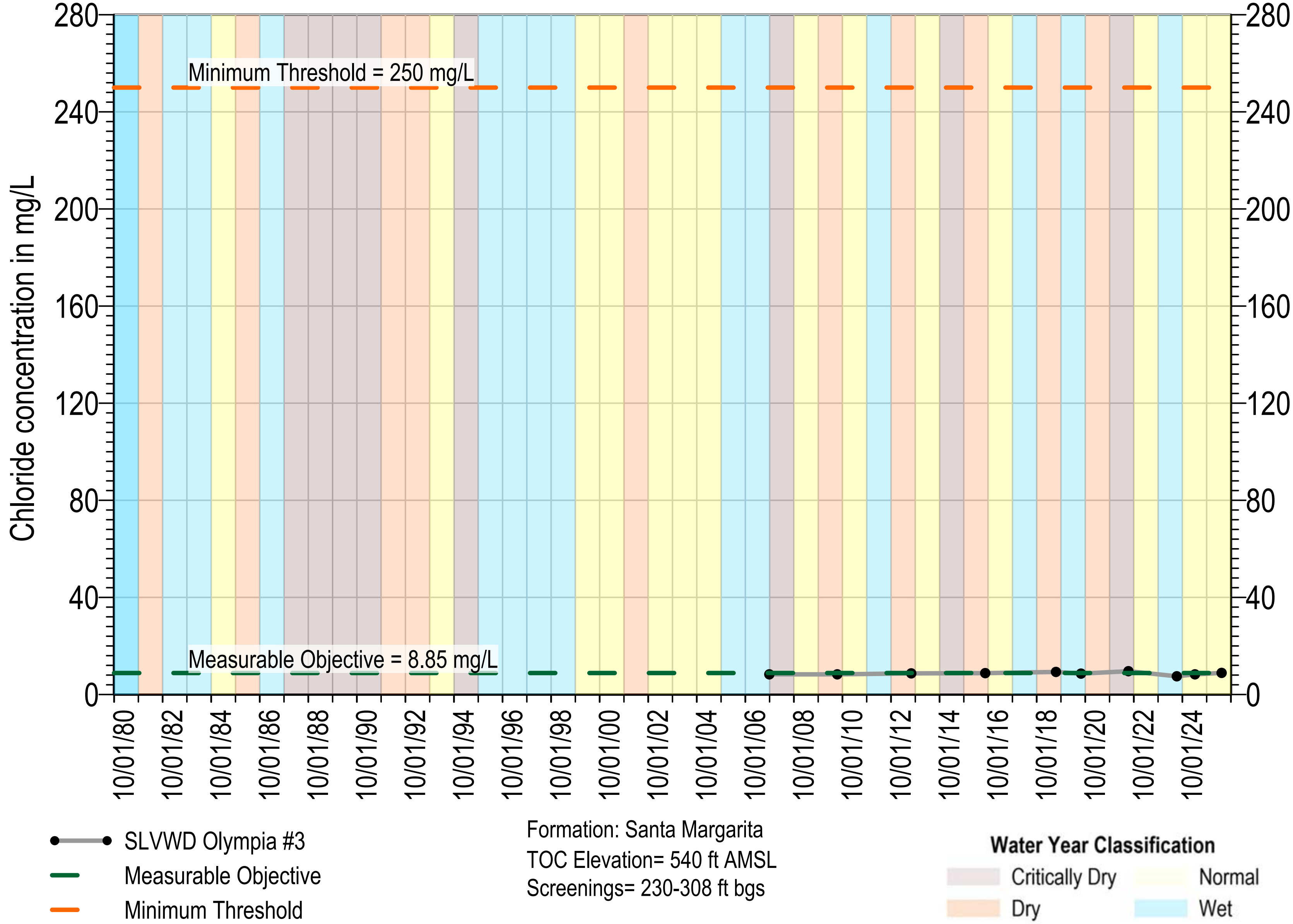
Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-2. Chemograph of Station SVWD #11B

MONTGOMERY & ASSOCIATES

Appendix E

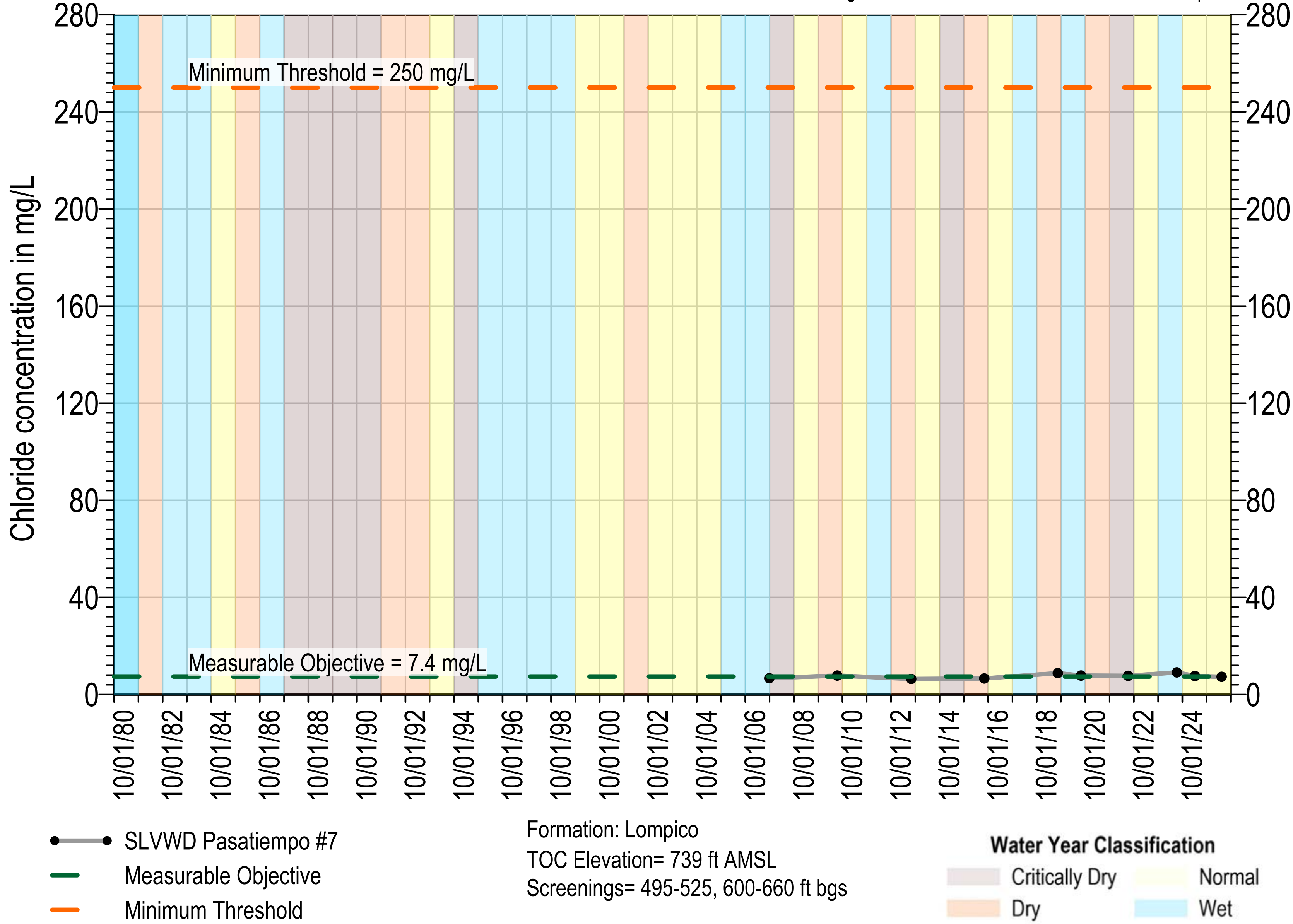
Chloride



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-3. Chemograph of Station SLVWD Olympia #3

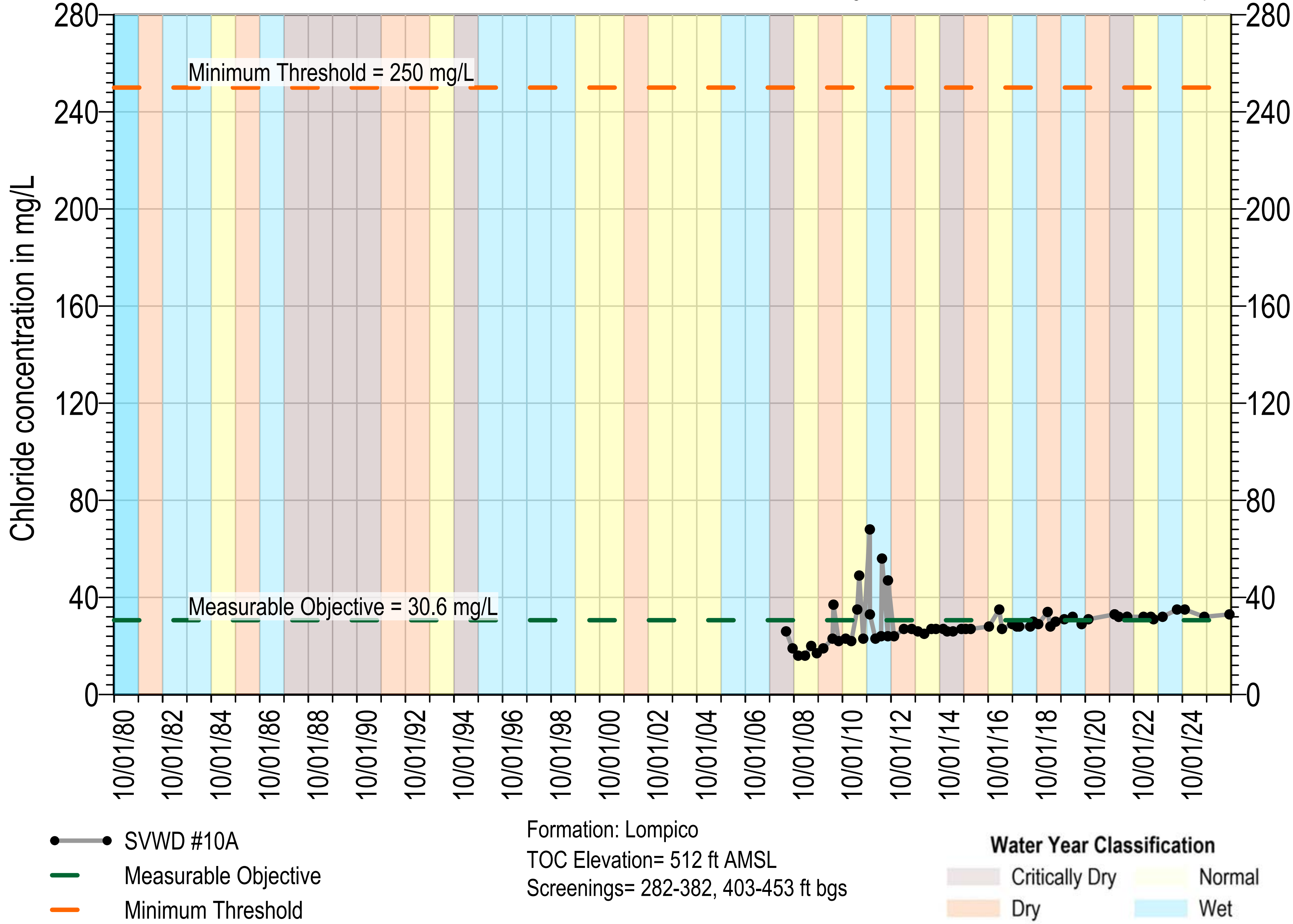
MONTGOMERY & ASSOCIATES



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

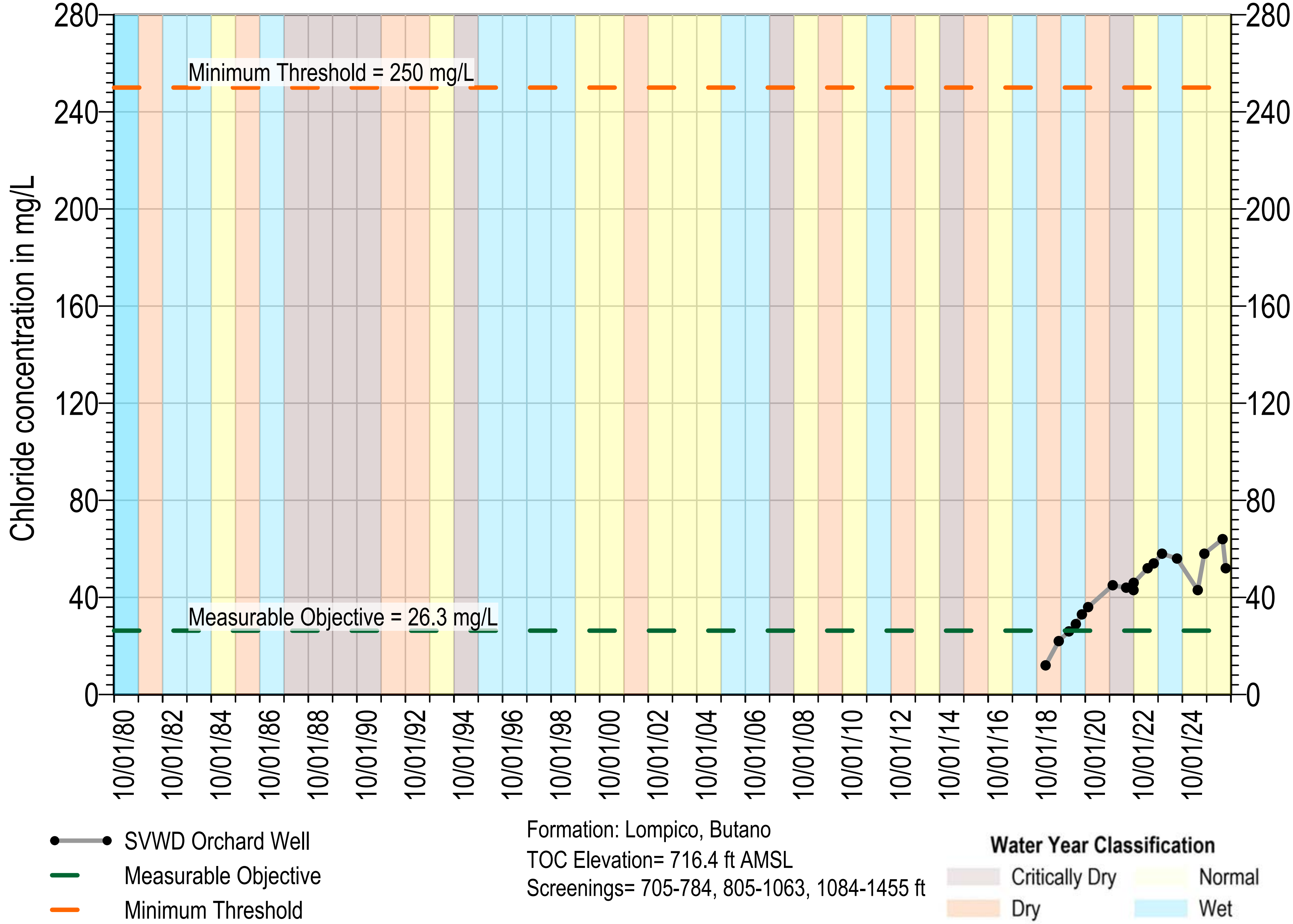
Figure E-4. Chemograph of Station SLVWD Pasatiempo #7

MONTGOMERY & ASSOCIATES



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-5. Chemograph of Station SVWD #10A



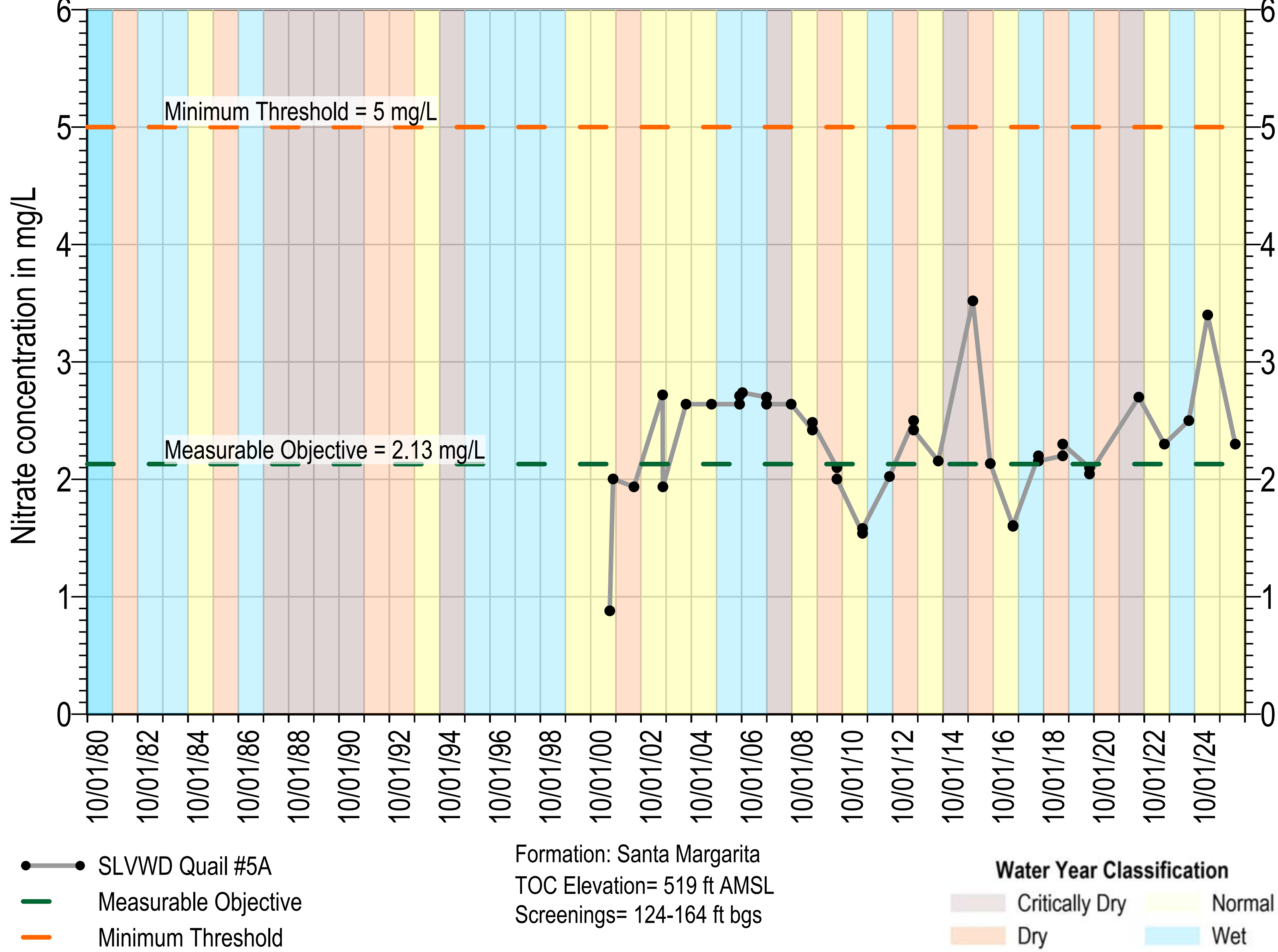
Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-6. Chemograph of Station SVWD Orchard Well

MONTGOMERY
& ASSOCIATES

Appendix E

Nitrate



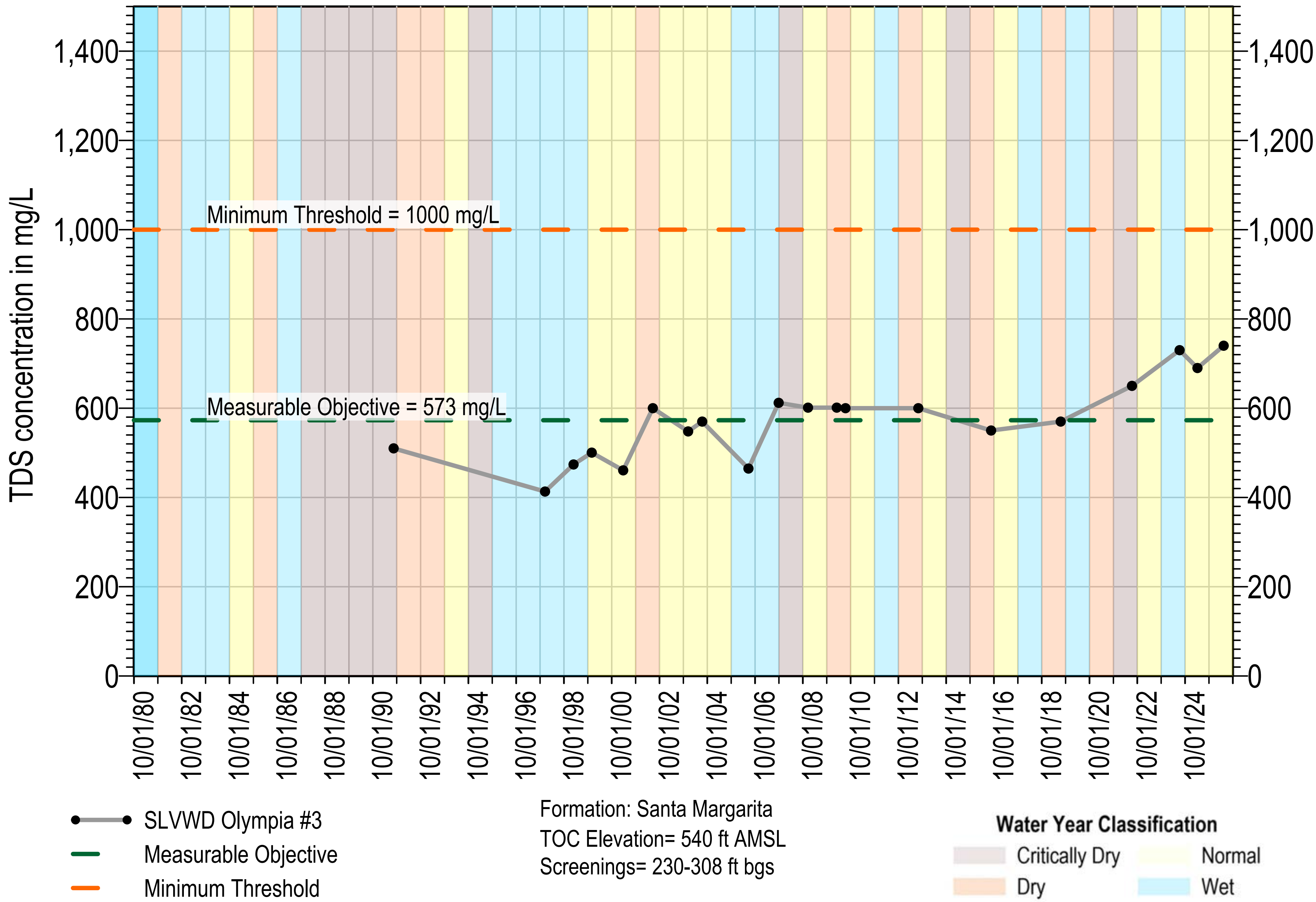
Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-7. Chemograph of Station SLVWD Quail #5A

MONTGOMERY
& ASSOCIATES

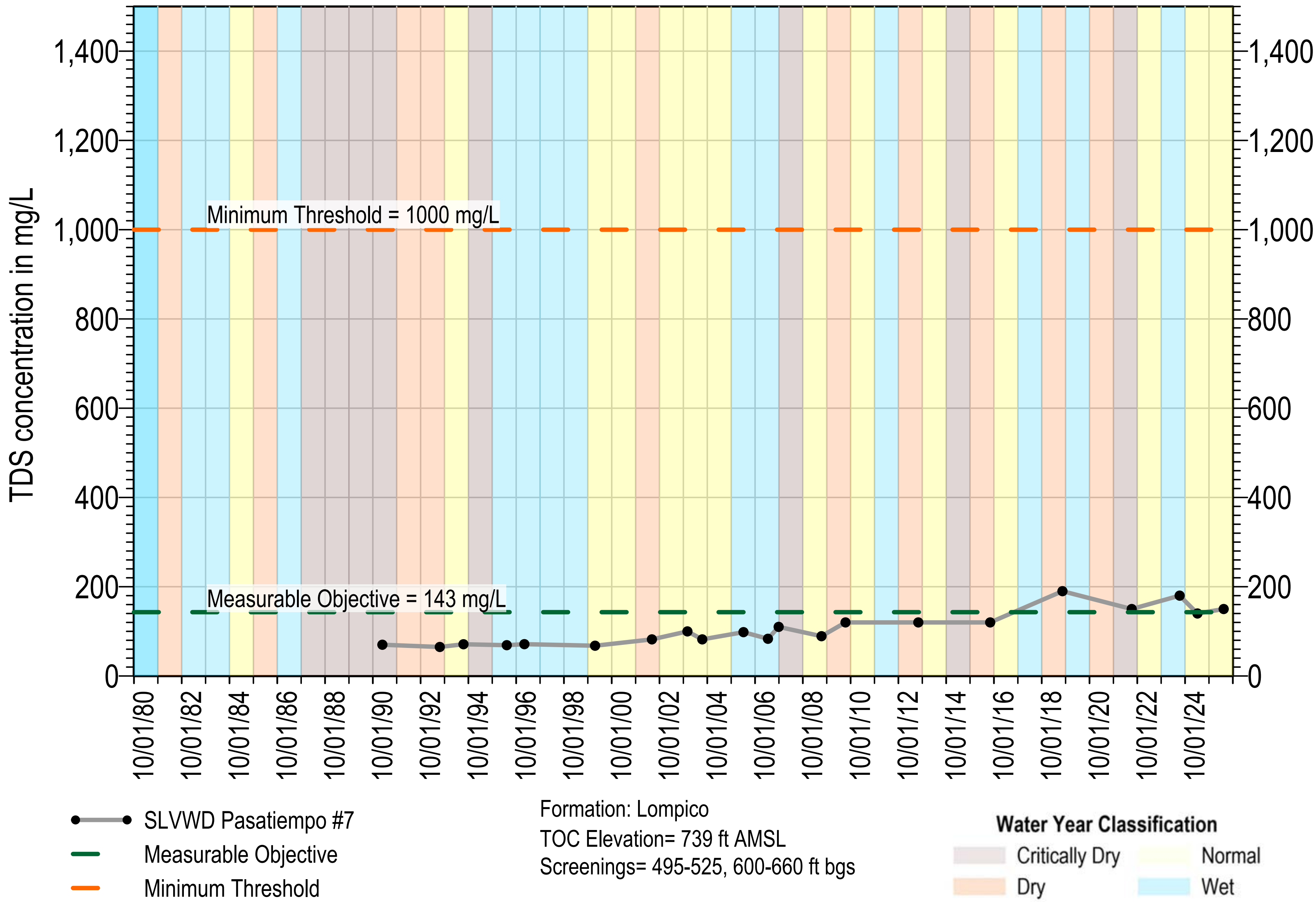
Appendix E

TDS



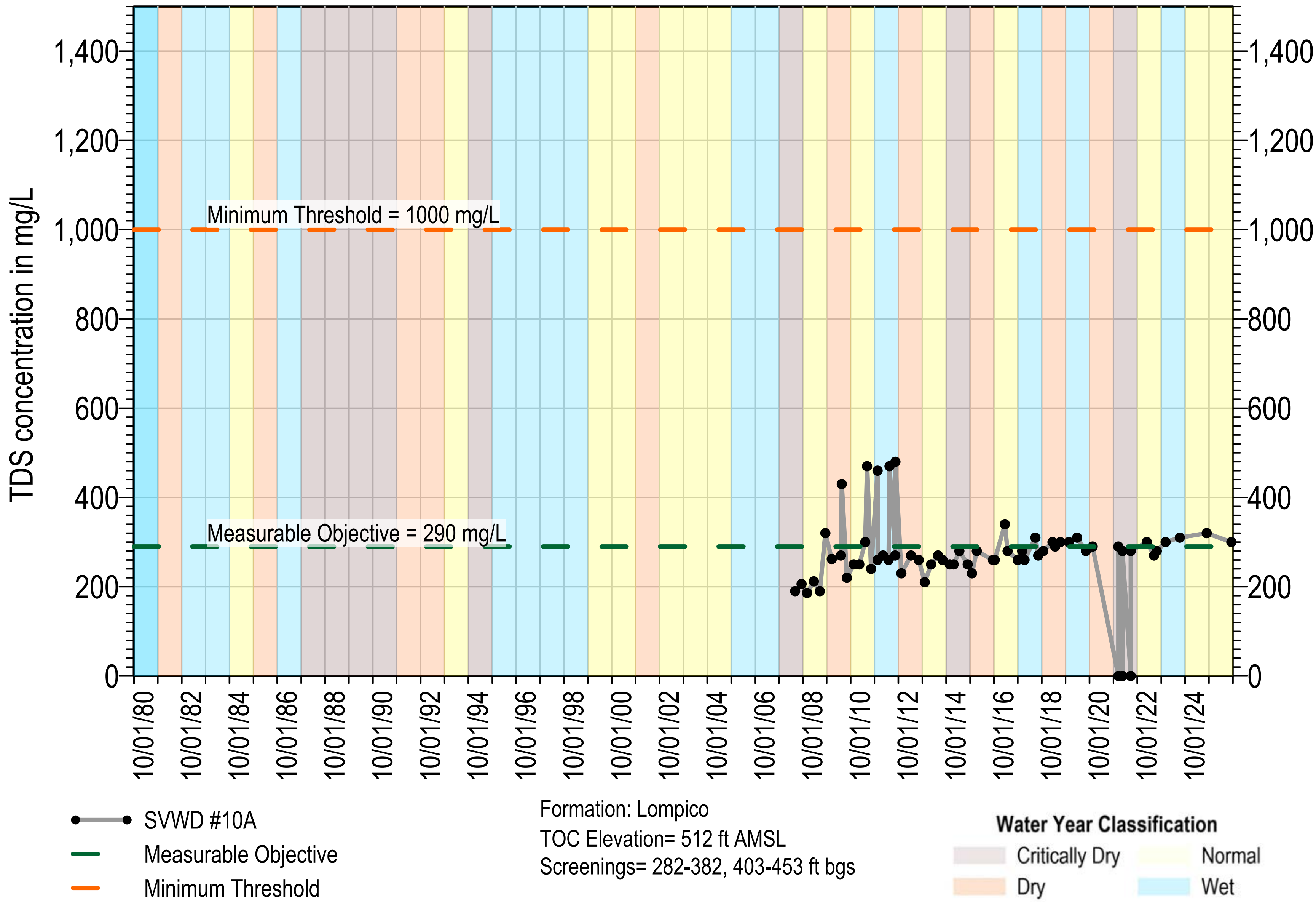
Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-8. Chemograph of Station SLVWD Olympia #3



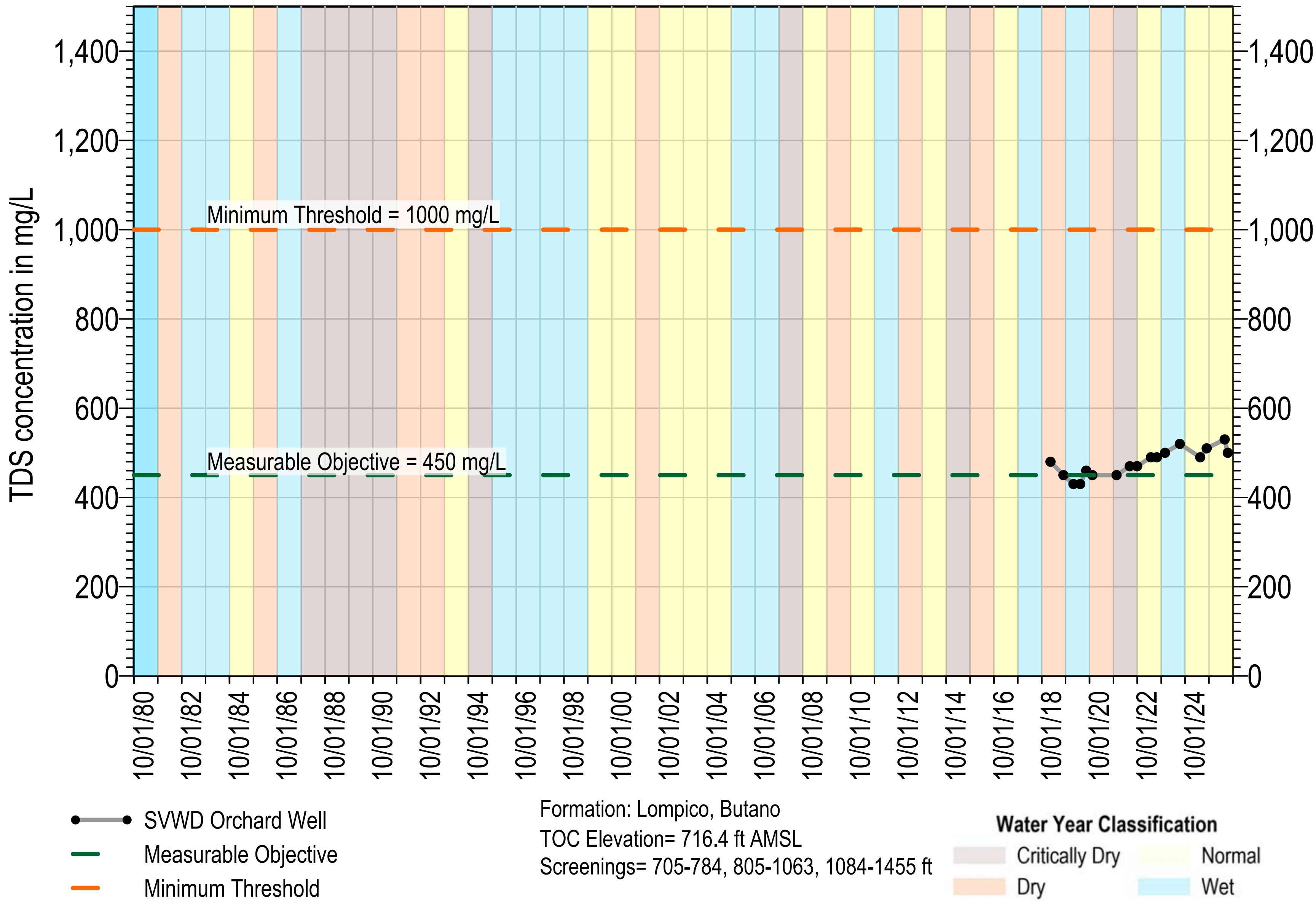
Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-9. Chemograph of Station SLVWD Pasatiempo #7



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-10. Chemograph of Station SVWD #10A



Square symbols indicate non-detects (ND)
ND are set at the state detection limits for purposes of reporting (DLR) (Title 22 §64400.34)
Measurable Objective set at DLR when Measurable Objective is non-detect. In wells with MO above MT, MT exceedance is not considered an Undesirable Result

Figure E-11. Chemograph of Station SVWD Orchard Well

MONTGOMERY & ASSOCIATES