Salinas Valley Groundwater Basin
Langley Area Subbasin
Water Year 2022 Annual Report
Submitted in Support of Groundwater Sustainability Plan Implementation

Salinas Valley Basin
Groundwater Sustainability Agency

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ABBREVIATIONS AND ACRONYMS

AF ....acre-feet
AF/yr. ....acre-feet per year
COC(s) ....Constituent(s) of concern
DDW.................Division of Drinking Water
DWR ....California Department of Water Resources
eWRIMS ....Electronic Water Rights Information Management System
GEMS ....Groundwater Extraction Management System
GSA...................Groundwater Sustainability Agency
GSP or Plan.......Groundwater Sustainability Plan
InSAR ....Interferometric Synthetic-Aperture Radar
ILRP..................Irrigated Lands Regulatory Program
ISW ....interconnected surface waters
MCL..................Maximum Contaminant Level
MCWRA...........Monterey County Water Resources Agency
mg/L..................milligrams per liter
MLRP................Multibenefit Land Repurposing Program
RMS ....Representative Monitoring Site(s)
SGMA...............Sustainable Groundwater Management Act
SMC ....Sustainable Management Criteria/Criterion
SMCL................Secondary Maximum Contaminant Level
Subbasin............Langley Area Subbasin
SVBGSA...........Salinas Valley Basin Groundwater Sustainability Agency
SVIHM.............Salinas Valley Integrated Hydrologic Model
SWIG ....Seawater Intrusion Working Group
SWRCB.............State Water Resources Control Board
ug/L ....micrograms per liter
UMHOS/CM.....micromhos per centimeter
WY....................Water Year

EXECUTIVE SUMMARY

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) is required to submit an annual report for the Langley Area Subbasin (Subbasin) to the California Department of Water Resources (DWR) by April 1 of each year following SVBGSA's 2022 adoption and submittal of its Groundwater Sustainability Plan (GSP or Plan). This Annual Report covers data collected through Water Year (WY) 2022, from October 1, 2021, to September 30, 2022.

As described in the GSP, DWR lists the Subbasin as a high priority subbasin in overdraft, which indicates that continuation of present water management practices would probably result in significant adverse impacts. The goal of the Langley Subbasin GSP is to balance the needs of all water users in the Subbasin while complying with the Sustainable Groundwater Management Act (SGMA).

In WY 2022, groundwater conditions remained similar to conditions in recent years, with slight changes in conditions related to specific sustainability indicators. WY 2022 is classified as a dry-normal year.

The groundwater data for WY 2022 are summarized below:

- Groundwater extractions for reporting year 2022 (November 1, 2021, through October 31, 2022) were approximately 1,460 acre-feet (AF). Extraction was slightly lower than the prior reporting year and remains higher than the average historical extraction.
- No groundwater elevation measurements were collected for 8 of 14 Representative Monitoring Site (RMS) wells in WY 2022. Groundwater elevations increased during this dry-normal water year in 5 of the 6 RMS wells that were sampled in WY 2022 from about 0.4 to 12.6 feet. Two RMS wells had groundwater elevations above their measurable objective, 5 had elevations between their minimum thresholds and measurable objectives, and none had elevations below their minimum thresholds.
- There is no seawater intrusion in the Subbasin.
- There were 4 groundwater quality constituents of concern (COCs) that exceeded their minimum thresholds in WY 2022, none of them due to GSA groundwater management actions.
- No subsidence was detected in the Subbasin.
- There are no existing shallow monitoring wells in the Subbasin to measure interconnected surface water (ISW). SVBGSA will address this data gap during GSP implementation.

As a result, the Langley Area Subbasin had no undesirable results in WY 2022.

During WY 2022, the SVBGSA has taken numerous actions to implement the GSP. These include:

- **Langley Subbasin Planning and Implementation:** SVBGSA worked with the Langley Subbasin Planning Committee to finish the Langley Subbasin GSP, submitted to DWR in January 2022. As the responsibilities of the subbasin planning committees finished with GSP submittal, SVBGSA set up subbasin implementation committees to lead subbasin-specific GSP implementation activities.
- **GSA policies, operations, and engagement:** SVBGSA regularly engaged interested parties through its Board of Directors and committees. It developed a 2-year and 5-year work plan and associated budget and continued to strengthen its relationship with partner agencies. SVBGSA conducted outreach to Underrepresented Communities and developed well permit application review processes to comply with Executive Order N-7-22.
- **Data and monitoring** – SVBGSA undertook several efforts to further increase data collection and monitoring, including identifying existing wells that could potentially fill monitoring network data gaps, engaging in discussions to expand the groundwater extraction monitoring program, developing the Salinas Valley Seawater Intrusion Model, continuing support of USGS development of a Salinas Valley groundwater-surface water model, and contracting then receiving the results of the preliminary investigation of the Deep Aquifers Study.
- **Project implementation activities** – SVBGSA developed a sustainability strategy for the Langley Subbasin that outlines the GSP workstreams underway or planned to reach sustainability. SVBGSA plans to move from core initial assessments into high level feasibility and discussions on a more refined sustainability approach in WY 2023 and WY 2024. During WY 2022, SVBGSA, Monterey County Water Resources Agency (MCWRA), and project partners moved forward with actions that will positively impact groundwater conditions and help maintain sustainability, including:
    - The Greater Monterey County Integrated Regional Water Management Group, in collaboration with SVBGSA, was awarded a $10 million grant through Multibenefit Land Repurposing Program (MLRP) to strategically and voluntarily acquire and repurpose the least viable, most flood-prone portions of irrigated agricultural lands in the lower Salinas Valley.
    - SVBGSA began the Deep Aquifer Study and received recommendations from the preliminary investigation.

1 INTRODUCTION

1.1 Purpose

The 2014 California Sustainable Groundwater Management Act (SGMA) requires that following adoption of a Groundwater Sustainability Plan (GSP), Groundwater Sustainability Agencies (GSAs) annually report on the condition of the basin and show that the GSP is being implemented in a manner that will likely achieve the sustainability goal for the basin. This report fulfills that requirement for the Salinas Valley – Langley Area Subbasin (Subbasin) for Water Year (WY) 2022.

The sustainability goal of the Langley Subbasin is to manage groundwater resources for long-term community, financial, and environmental benefits to the Subbasin's residents and businesses. The goal of this GSP is to ensure long-term viable water supplies while maintaining the unique cultural, community, and business aspects of the Subbasin. It is the express goal of this GSP to balance the needs of all water users in the Subbasin.

This is the second annual report for the Subbasin and includes monitoring data for WY 2022, which is from October 1, 2021, to September 30, 2022. This Annual Report includes a description of basin conditions through text, hydrographs, groundwater elevation contour maps, calculated estimates of change in groundwater in storage, and maps of the distribution of groundwater extraction across the Subbasin. It compares WY 2022 data to Sustainability Management Criteria (SMC) as a measure of the Subbasin's groundwater conditions with respect to the sustainability goal that must be reached by the end of 2042.

1.2 Langley Area Subbasin Groundwater Sustainability Plan

In 2017, local GSA-eligible entities formed the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) to develop and implement the GSPs for the Salinas Valley. SVBGSA is a Joint Powers Authority with membership comprising the County of Monterey, Monterey County Water Resources Agency (MCWRA), City of Salinas, City of Soledad, City of Gonzales, City of King, Castroville Community Services District, and Monterey One Water.

SVBGSA developed the GSP for the Langley Area Subbasin, identified as California Department of Water Resources (DWR) subbasin 3-004.09. SVBGSA has exclusive jurisdiction of the Langley Subbasin. DWR has designated the Langley Subbasin as a high priority basin.

SVBGSA developed the GSP for the Langley Area Subbasin in concert with the 5 other Salinas Valley Subbasin GSPs that fall partially or entirely under its jurisdiction: the 180/400-Foot Aquifer Subbasin (DWR subbasin 3-004.01), the Eastside Aquifer Subbasin (DWR subbasin 3-004.02) the Forebay Aquifer Subbasin (DWR subbasin 3-004.04), the Upper Valley Aquifer

Subbasin (DWR subbasin 3-004.05), and the Monterey Subbasin (DWR subbasin 3-004.10). This Annual Report covers all the 17,600 acres of the Langley Area Subbasin, as shown on Figure 1.

1.3 Annual Report Organization

This Annual Report corresponds to the requirements of GSP Regulations §356.2. It first outlines the subbasin conditions, including several components of the Regulations: groundwater elevations, groundwater extractions, surface water use, total water use, and change in groundwater storage. The Annual Report then addresses actions taken to implement the GSP and progress toward interim milestones.

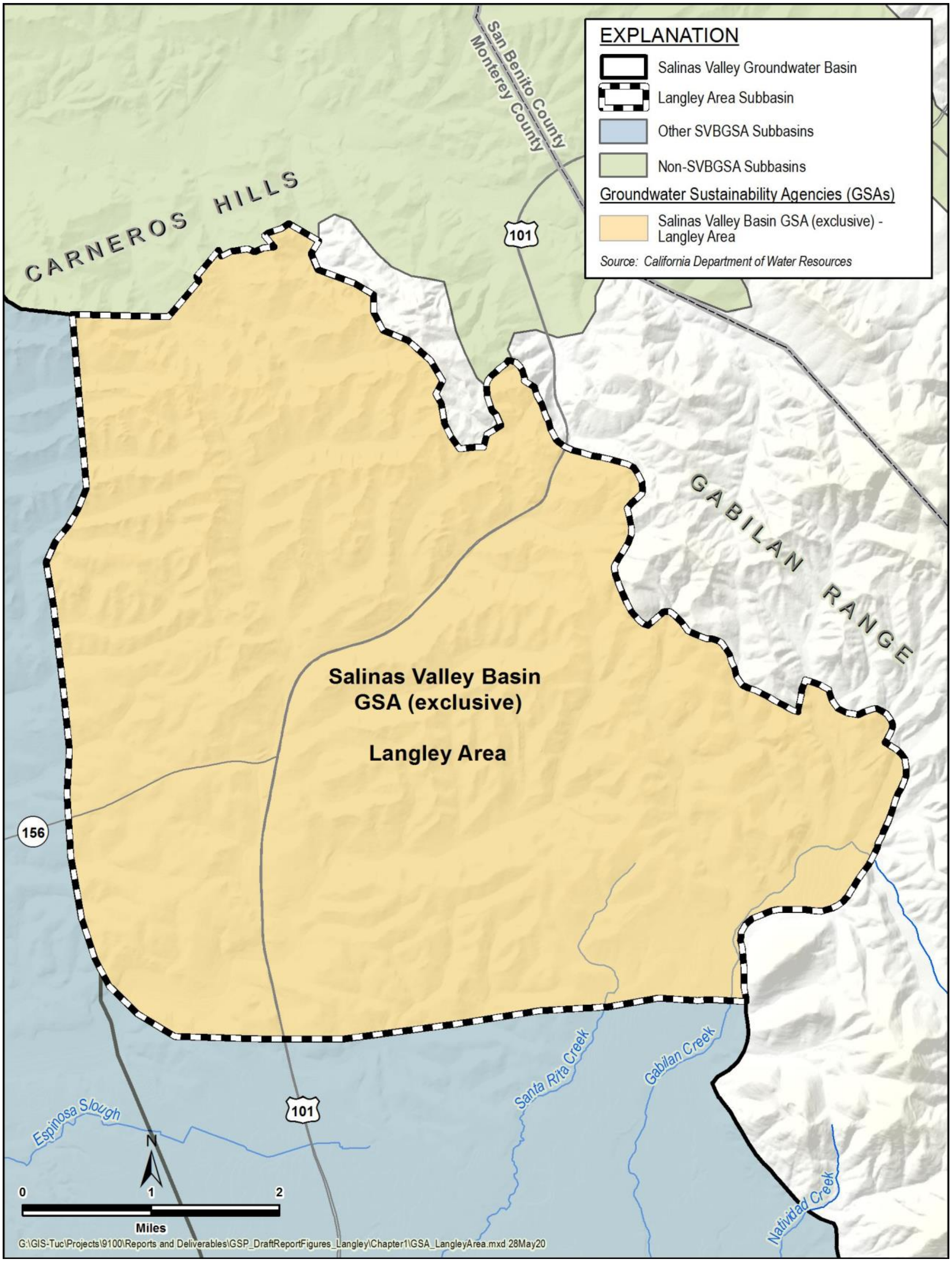


Figure 1. Langley Area Subbasin

2 SUBBASIN SETTING

The Langley Area Subbasin is located in the northeastern corner of Monterey County, west of the Gabilan Range and south of the Elkhorn Slough. The Langley Subbasin primarily contains small communities but no incorporated communities, of which Prunedale is the largest in the Subbasin. The primary water use sector is rural residential. There is also some agriculture along the southern boundary of the Subbasin. The geology of the Langley Subbasin is dominated by alluvial fans and sedimentary deposits that form low hills, underlain by fractured granite. Surface-water drainages deposited a series of small, interconnected alluvial fans that extend from the Gabilan Range in the northeast to the fluvial deposits that define the boundary with the 180/400-Foot Aquifer Subbasin to the west. The southern boundary with the Eastside Subbasin generally coincides with the boundary of the Aromas Red Sands, which are indicative of the Langley Subbasin (DWR, 2004). Although the Langley Subbasin is not on the valley floor, there are no reported hydraulic barriers separating it from the 180/400-Foot and Eastside Aquifer Subbasins. The eastern boundary of the Subbasin is the contact between the unconsolidated sediments and the Gabilan Range that consists mostly of granitic rocks. To the north, the Langley Subbasin is bounded by the drainage divide with the Pajaro Valley Groundwater Basin that follows the course of a Salinas River paleo-drainage. This abandoned river valley cuts through the Aromas Red Sands and is filled in with fine sediments that may act as a barrier to flow between the 2 groundwater basins (Schwartz, 1983).

2.1 Principal Aquifers and Aquitards

The unconfined sands and gravels of the Aromas Red Sands are the primary water-bearing geologic formation in the Subbasin's sole principal aquifer. Near the Gabilan Range, some wells are completed in the weathered surface of the granite, fresh granite, or other consolidated formations (Fugro West, Inc., 1995). However, the granite is not a principal aquifer because it does not convey significant and economic quantities of water and the water encountered in the fractured granite is not consistent or reliable since it is drawn from fractures.

2.2 Natural Groundwater Recharge and Discharge

Groundwater can leave the aquifers where surface water and groundwater are interconnected. There are potential locations of interconnected surface water (ISW) and groundwater along the Gabilan Creek and a couple other areas in the Subbasin. In these areas groundwater dependent ecosystems may depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface and may discharge groundwater through evapotranspiration. Natural groundwater recharge occurs through deep percolation of surface water, excess applied irrigation water, and precipitation.

2.3 Precipitation and Water Year Type

Precipitation that falls within the Subbasin contributes to runoff and percolation components of the water budget. The precipitation gage at the Salinas Airport (National Oceanographic and Atmospheric Administration Station USW00023233) recorded 7.38 inches of rainfall in WY 2022. For comparison, the average rainfall from WY 1980 to WY 2022 at this gage is 11.87 inches of precipitation.

SVBGSA adopted the methodology used by MCWRA for determining the Subbasin's water year type. MCWRA assigns a water year type of either dry, dry-normal, normal, wet-normal, or wet based on an indexing of annual mean flows at the USGS stream gage on the Arroyo Seco near Soledad (USGS Gage 11152000) (MCWRA, 2005). Using the MCWRA method, WY 2022 was a dry-normal year.

3 2022 DATA AND SUBBASIN CONDITIONS

This section details the Subbasin conditions and WY 2022 data. Where WY 2022 data are not available, it includes the most recent data available. SVBGSA stores monitoring data in a data management system. Monitoring data are included in this Annual Report and are submitted to DWR.

3.1 Water Supply and Use

Within the Subbasin, water is used for rural residential, agricultural, urban, industrial use, and wetlands and native vegetation. Most of the water in the Subbasin is used for rural residential use. Only a relatively small amount of water is used by wetlands and native vegetation.

The water supply in the Langley Subbasin predominantly consists of groundwater. Some growers also report a small amount of surface water use to the State Water Resources Control Board (SWRCB). No recycled water is used in the Subbasin.

3.1.1 Groundwater Extraction

Urban and agricultural groundwater extractions were compiled using MCWRA's Groundwater Extraction Management System (GEMS), which collects data from groundwater wells with an internal discharge pipe diameter greater than 3 inches within Zones 2, 2A, and 2B. However, because these zones only cover a small part of the Subbasin, the urban pumping data was supplemented with pumping data collected by SWRCB for public drinking water systems. Agriculture mainly occurs in the area of the Subbasin that overlaps with Zones 2, 2A, and 2B, therefore, GEMS provides some coverage of agricultural pumping. Rural domestic pumping in the Langley Subbasin is estimated by applying a constant rate of 0.3 acre-feet per year (AF/yr.) to all non-vacant residential use parcels that are not located in the service area of a public drinking water system. A value of 0.3 AF/yr. per dwelling was associated with lots similar to the median parcel size of 1.25 acres and was selected as the representative annual rate for domestic pumping. Based on a review of available data, there are approximately 2,016 non-vacant residential parcels located outside the service areas of public drinking water systems in the Subbasin.

Table 1 presents groundwater extractions by water use sector, including the method of measurement and accuracy of measurement for GEMS pumping in the Langley Area Subbasin. Urban use data from MCWRA aggregates municipal wells, small public water systems, and industrial wells. Urban use data available from the SWRCB is included for large drinking water systems outside of the GEMS area; however, pumping data from SWRCB do not include specific measurement method or accuracy. The SWRCB does include whether groundwater use for water systems was metered; 37 of the 49 public drinking water systems that reported 2022 pumping to the SWRCB were metered. Agricultural water use accounted for 1% of groundwater extraction in 2022; urban and industrial water uses accounted for 58%; rural domestic water use accounted for 41%. The urban and total groundwater extraction estimates are likely less than actually occurred, since not all of public drinking water systems reported 2022 pumping to the SWRCB and there are agricultural areas that did not report extraction to MCWRA. It is important to note that agricultural pumping is reported by MCWRA for the period November 1 through October 31, whereas urban pumping is reported on a calendar year basis. Rural domestic pumping is estimated on a calendar year basis. No groundwater was extracted for managed wetlands or managed recharge. Groundwater use by natural vegetation is assumed to be small and was not estimated for this report.

The total reported groundwater extraction in reporting year 2022 was 1,460 AF/yr in the Subbasin. Figure 2 color codes the general location and volume of groundwater extractions in the Subbasin. Urban pumping is represented by the boundaries of the public water systems and circles represent the agricultural pumping.

Table 1. 2022 Groundwater Extraction by Water Use Sector (in AF/yr.)

<table>
<tr><th>Water Use Sector</th><th>Groundwater Extraction</th><th>Method of Measurement</th><th>Accuracy of Measurement</th></tr>
<tr><td>Rural Domestic</td><td>600</td><td>Estimated by applying a constant rate of 0.3 AF/yr. to all non-vacant residential use parcels.</td><td>Water usage for parcels outside of public drinking water systems ranged from 0.26 to 0.51 AF/yr./dwelling.</td></tr>
<tr><td>Urban (includes industrial)</td><td>850</td><td rowspan="2">MCWRA's Groundwater Reporting Program allows 3 different reporting methods: water flowmeter, electrical meter, or hour meter. For 2022, 84% of extractions were calculated using a flowmeter, 16% electrical meter and <1%-hour meter. Method of measurement is not available for data from the SWRCB but 76% of the water systems meter their groundwater use.</td><td rowspan="2">MCWRA ordinances 3717 and 3718 require annual flowmeter calibration, and that flowmeters be accurate to within +/- 5%. The same ordinance requires annual pump efficiency tests. SVBGSA assumes an electrical meter accuracy of +/- 5%. Accuracy of measurement is not available for data from the SWRCB.</td></tr>
<tr><td>Agricultural</td><td>10</td></tr>
<tr><td>Managed Wetlands</td><td>0</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Managed Recharge</td><td>0</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Natural Vegetation</td><td>0</td><td>De-minimis and not estimated.</td><td>Unknown</td></tr>
<tr><td>Total</td><td>1,460</td><td></td><td></td></tr>
</table>

Note: Agricultural pumping is reported on a MCWRA reporting year basis whereas urban is reported in calendar-year basis. Rural domestic pumping is estimated on a calendar year basis. N/A = Not Applicable.

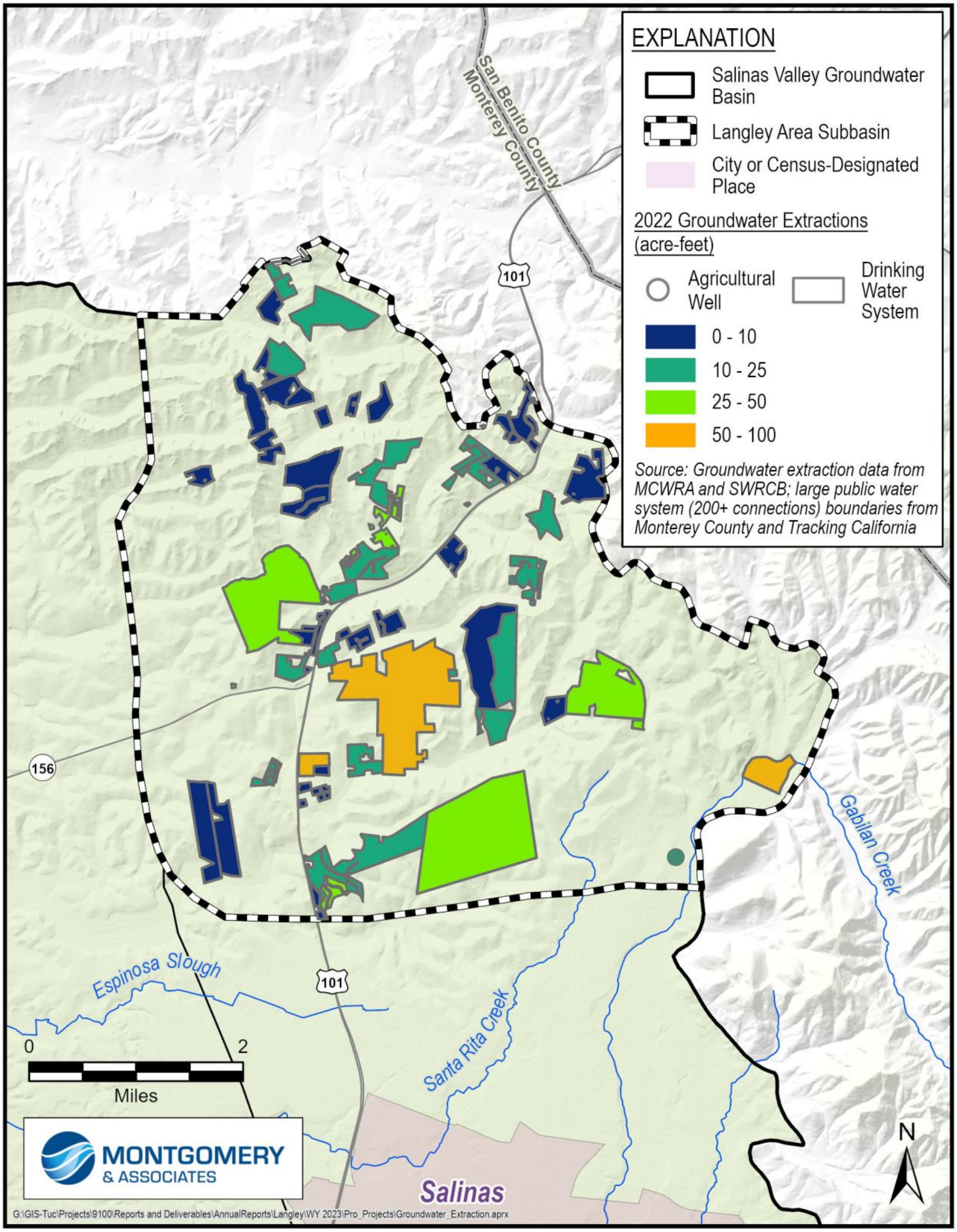


Figure 2. General Location and Volume of Groundwater Extractions

3.1.2 Surface Water Supply

Salinas River Watershed diversion data were obtained from the SWRCB Electronic Water Rights Information Management System (eWRIMS) website (SWRCB, 2023b). These data are reported annually and include diversions from the Salinas River and its tributaries. Surface water diversions reported in eWRIMS were approximately 3 AF/yr. in WY 2022. All surface water is used for irrigation.

3.1.3 Total Water Use

Total water use is the sum of groundwater extractions and surface water use and is summarized in Table 2.

Many growers and residents have noted that some irrigation is reported both to the SWRCB as Salinas River diversions and to MCWRA as groundwater pumping in other Salinas Valley Groundwater Subbasins. To avoid double counting, all surface water reported as a Statement of Diversion and Use is excluded from the total water use count for the Subbasin. This accounting is done to calculate the total water use and is not meant to imply that SVBGSA classifies any or all the reported diversions as groundwater.

Total water use was 1,460 AF/yr in WY 2022, as shown in Table 2.

Table 2. Total Water Use by Water Use Sector in WY 2022 (in AF/yr)

Water Use Sector	Groundwater Extraction	Surface Water Use	Recycled Water	Method of Measurement	Accuracy of Measurement
Rural Domestic	600	0	0	Estimated	N/A
Urban	850	0	0	Direct	Estimated to be +/- 5%.
Agricultural	10	0	0	Direct	Estimated to be +/- 5%.
Managed Wetlands	0	0	0	N/A	N/A
Managed Recharge	0	0	0	N/A	N/A
Natural Vegetation	Unknown	Unknown	Unknown	N/A	N/A
SUBTOTALS	1,460	0	0		
TOTAL		**1,460**			

Note: Agricultural pumping is reported on the MCWRA reporting year basis whereas urban is reported in calendar-year basis. To avoid double counting with groundwater pumping reported to MCWRA, Statement of Diversion and Use surface water diversions reported in Section 3.1.2 are subtracted from the total water use. N/A = Not Applicable.

3.2 Groundwater Elevations

The groundwater elevation monitoring network in the Langley Subbasin GSP consists of 16 representative monitoring site (RMS) wells monitored by MCWRA. Since last year's annual report, 2 wells (13S/03E-15P01 and 13S/03E-20P01) in the RMS network have been removed because the wells were withdrawn from MCWRA's water level monitoring programs. Figure 3 shows the Subbasin's updated groundwater elevation representative monitoring network where the old RMS wells are marked with a red X. The old RMS wells were not replaced because of the lack of existing monitoring wells in the Subbasin. During GSP implementation, SVBGSA is working to fill data gaps with additional wells to include in the monitoring network. Although there are fewer RMS wells, the monitoring network still provides adequate coverage of the area in the Subbasin where most known groundwater use occurs.

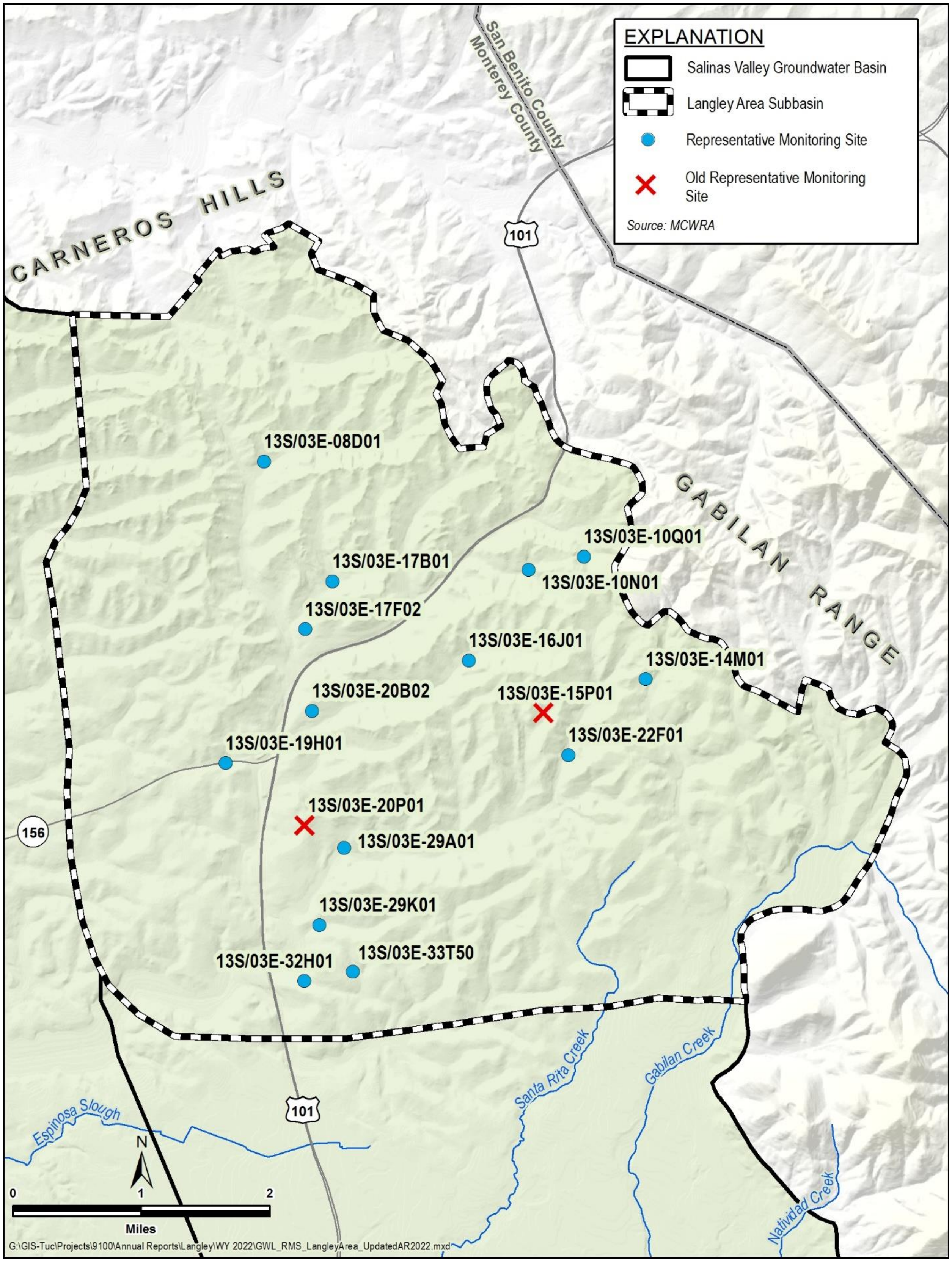


Figure 3. Locations of Representative Groundwater Elevation Monitoring Sites

Fall 2022 groundwater elevation data are presented in Table 3. In accordance with the GSP, this report uses groundwater elevations measured in the fall which are neutral groundwater conditions that are generally not heavily influenced by either summer irrigation pumping or winter rainfall recharge. The groundwater elevations are also used to compare to SMC, as described in Section 4.2.1. Fall groundwater elevation measurements are made from November to December and they are used to produce groundwater elevation contours. Figure 4 shows the approximate annual change in groundwater levels for the RMS wells. These fall contours are further discussed in Section 3.2.1. Wells that MCWRA did not sample during the fall event do not have a water level measurement for WY 2022. SVBGSA is working to get biannual measurements for every RMS during GSP implementation.

Table 3. Groundwater Elevation Data (in feet)

Monitoring Site	WY 2022 Groundwater Elevations
13S/03E-08D01	174.4
13S/03E-10N01	278.5
13S/03E-10Q01	Not sampled
13S/03E-14M01	369.5
13S/03E-16J01	Not sampled
13S/03E-17B01	166.8
13S/03E-17F02	-34.1
13S/03E-19H01	-0.7
13S/03E-20B02	115.9
13S/03E-22F01	Not sampled
13S/03E-29A01	Not sampled
13S/03E-29K01	Not sampled
13S/03E-32H01	Not sampled
13S/03E-33T50	Not sampled

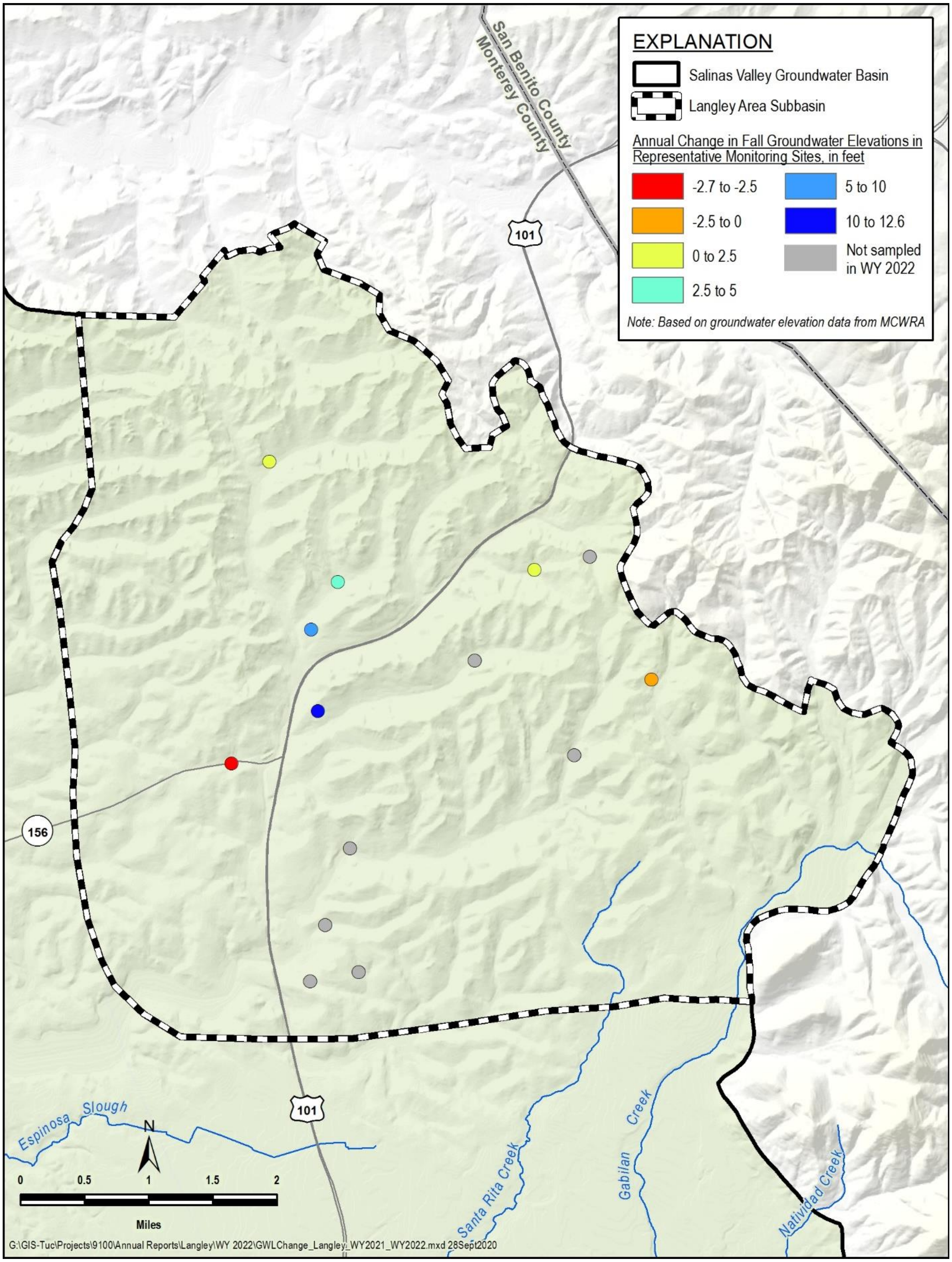


Figure 4. Annual Change in Fall Groundwater Elevations in Representative Monitoring Sites

3.2.1 Groundwater Elevation Contours

MCWRA annually produces groundwater elevation contour maps for the Salinas Valley Groundwater Basin using data from their annual August trough and fall measurement programs. However, because these contours do not extend into the Langley Subbasin, SVBGSA uses MCWRA's groundwater elevation point data to develop contour maps. The August contours represent seasonal low conditions. The fall contours represent seasonal high conditions, even though they are neutral. The true seasonal high usually occurs between January and March (MCWRA, 2015); however, the GSP adopts fall groundwater elevations as the seasonal high because GSP monitoring is based on MCWRA's existing monitoring networks that annually monitor groundwater elevations in the fall. SVBGSA used MCWRA's fall 2022 data to develop groundwater elevation contours for the seasonal high. The groundwater elevation contours only cover the portions of the Subbasin monitored by MCWRA. There were no August groundwater elevation measurements taken in Langley in WY 2022; thus, contours were not developed for the seasonal low. The monitoring frequency in the Langley Subbasin is a data gap that will be addressed during GSP implementation.

Groundwater elevation contours for seasonal high groundwater conditions in the Langley Area are shown on Figure 5. Groundwater generally flows from the north-northeast toward the south-southwest corner of the Subbasin. Under current conditions, groundwater elevations in the southwestern half of the Subbasin are generally below sea level, estimated as zero feet NAVD88, as indicated by the negative values on the contour lines. These low groundwater elevations are related to a depression in groundwater elevations near the center of the Subbasin, similar to the fall 2019 groundwater elevation contours in Section 5.1.2 of the Langley Subbasin GSP. These groundwater elevation contours are based on limited data, as indicated by the dashed contour lines on Figure 5.

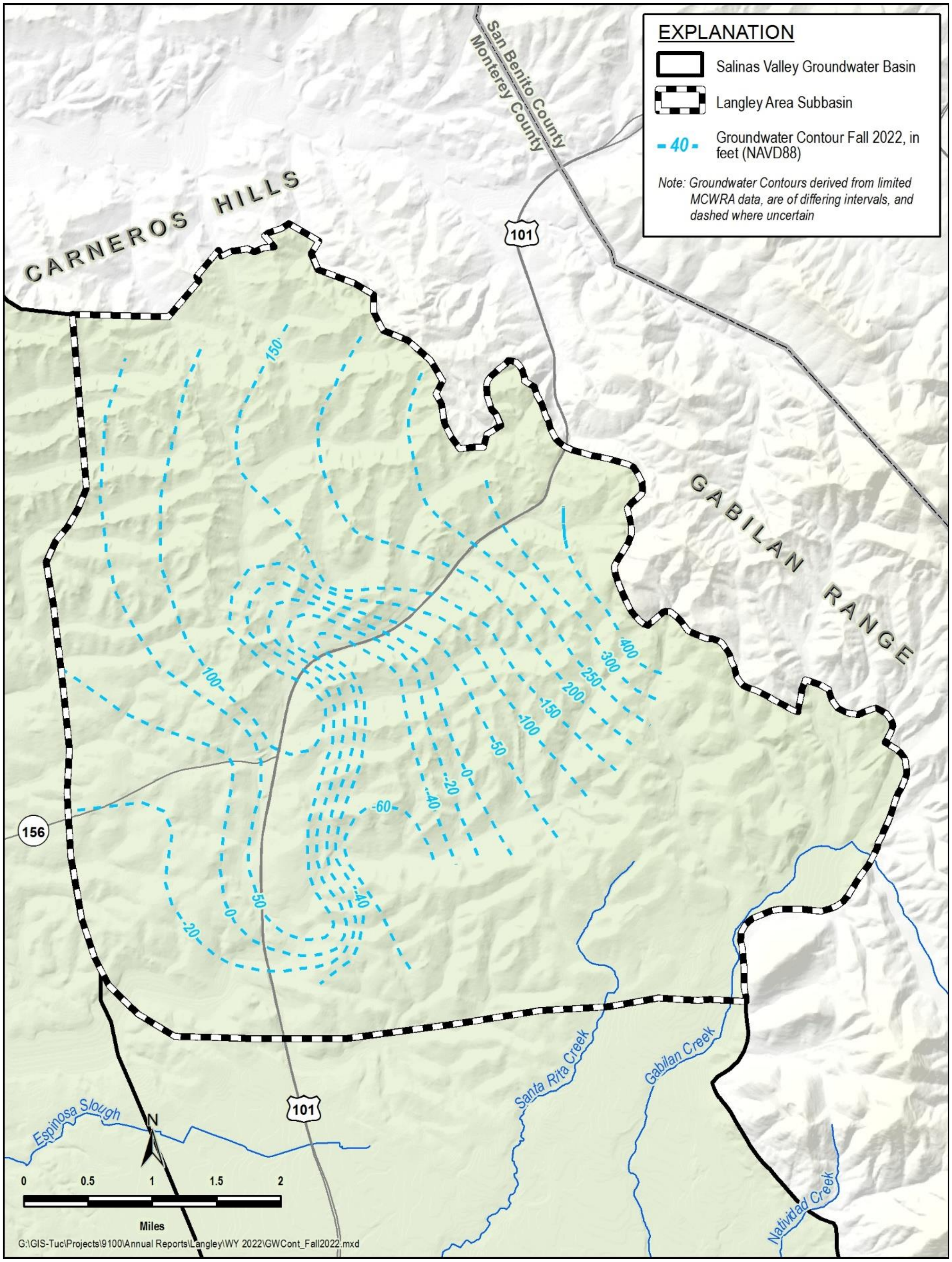


Figure 5. Seasonal High Groundwater Elevation Contour Map for the Langley Area

3.2.2 Groundwater Elevation Hydrographs

Temporal trends in groundwater elevations can be assessed with hydrographs that plot changes in groundwater elevations over time. Hydrographs for selected monitoring wells within the principal aquifer of the Langley Subbasin are shown on Figure 6. These hydrographs were selected to show characteristic trends in groundwater elevation in the aquifer. The hydrographs indicate that groundwater elevations in the principal aquifer have declined in some parts of the Subbasin and remained generally stable in other parts. Since WY 2021, groundwater elevations increased in most of the measured wells by 0.4 to 12.6 feet. Only 6 of the 14 RMS wells had a groundwater elevation measurement for WY 2022. Hydrographs for all RMS are included in Appendix A.

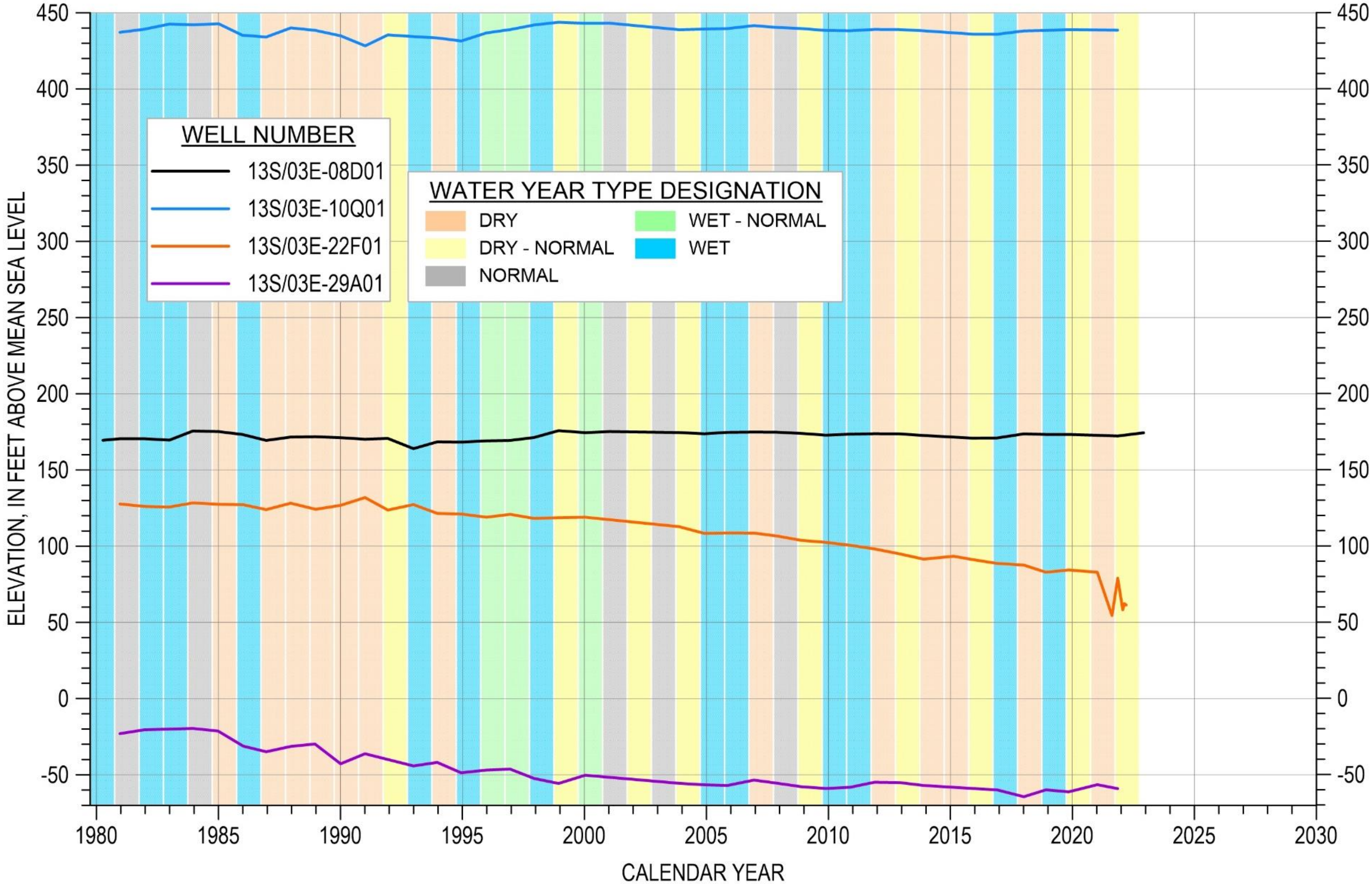


Figure 6. Groundwater Elevation Hydrographs for Selected Monitoring Wells

3.3 Seawater Intrusion

Seawater intrusion does not occur in the Langley Subbasin; however, it does occur in the 180/400-Foot Aquifer and Monterey Subbasins. Figure 7 shows the seawater intrusion contours for the 180-Foot Aquifer that MCWRA annually prepares for the adjacent 180/400-Foot Aquifer Subbasin. Seawater intrusion in the 400-Foot Aquifer did increase in WY 2022 but it extends across a smaller area than in the 180-Foot Aquifer and at a distance farther away from the Langley Subbasin. MCWRA seawater intrusion contours for the Monterey Subbasin are not included on Figure 7 because they are likely less accurate due to lack of monitoring in the Monterey Subbasin. The extent of seawater intrusion is based on the 500 milligram per liter (mg/L) chloride isocontour. Seawater intrusion in the 180-Foot Aquifer has not increased since WY 2020.

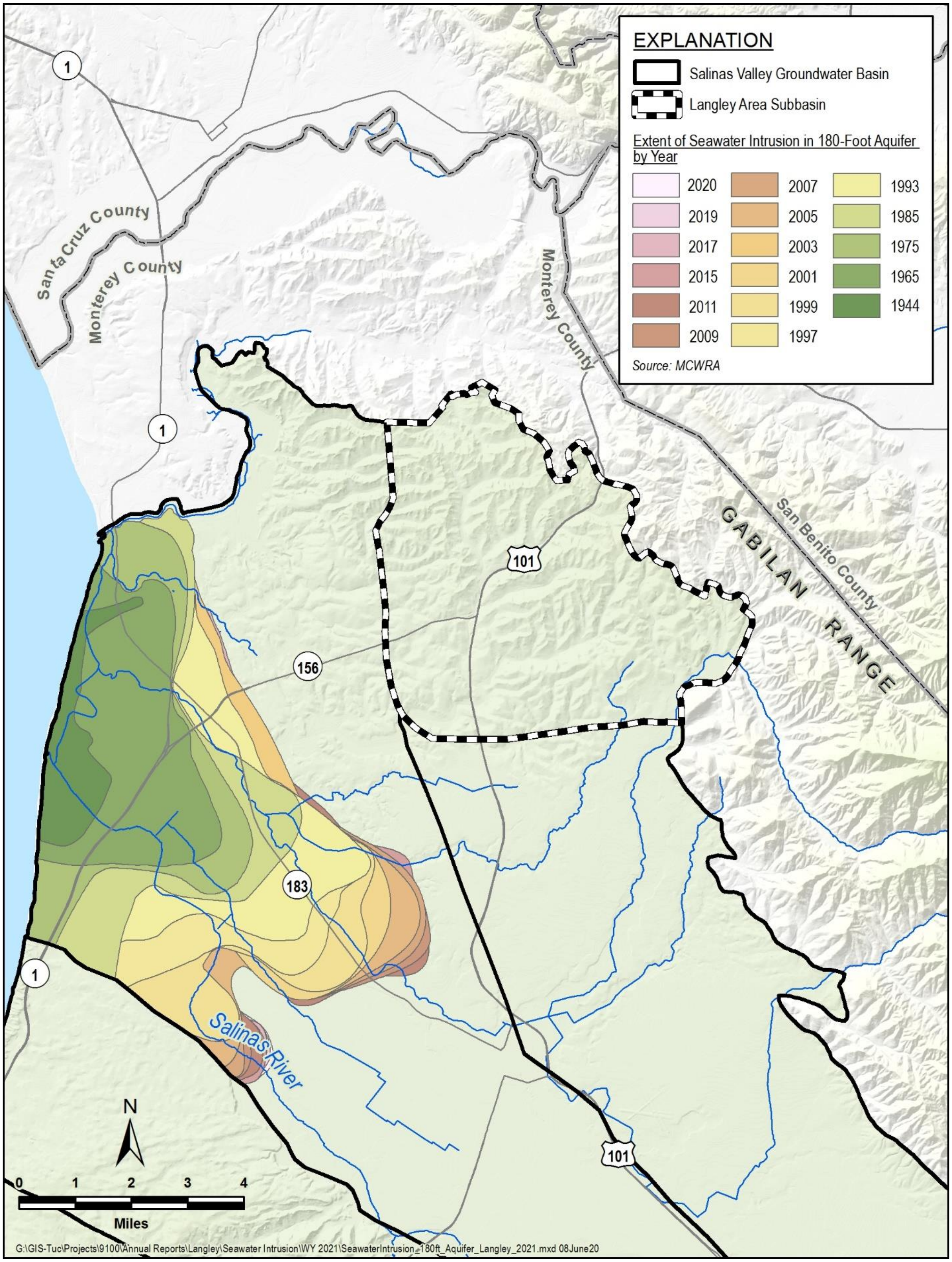


Figure 7. 2022 Seawater Intrusion Contours for the 180-Foot Aquifer

3.4 Change in Groundwater Storage

The Langley Subbasin GSP adopted the concept of change in usable groundwater storage, defined as the annual average increase or decrease in volume of groundwater that can be safely used for municipal, industrial, or agricultural purposes.

The annual change in storage calculation is based on groundwater elevation contours produced by SVBGSA using data from MCWRA for fall 2021 and fall 2022. MCWRA uses groundwater elevations from November to December to produce their fall contours, for consistency SVBGSA also used these measurements to create the fall contours for the Langley Subbasin. Fall measurements occur at the end of the irrigation season and before groundwater levels increase due to seasonal recharge by winter rains. These measurements record annual changes in storage reflective of groundwater recharge and withdrawals in the Subbasin.

Average annual change in groundwater elevations in the Langley Subbasin from WY 2021 to WY 2022 was estimated by subtracting the fall 2021 groundwater elevations shown on Figure 8 from the fall 2022 groundwater elevations (Figure 5). This change was then multiplied by the storage coefficient for the Langley Area. Monterey County's *State of the Basin Report* approximates the storage coefficient to 0.08 for the Eastside Subarea, which covers most of the Langley Subbasin (Brown and Caldwell, 2015). The estimated change in storage due to groundwater elevation changes in the Langley Area is depicted in acre-feet (AF) per acre on Figure 9. It shows little difference in groundwater storage throughout much of the Subbasin, with a slight increase in the middle and northern section and slight decrease in the southern and western parts of the Subbasin. Groundwater storage increased in the very eastern portion of the Subbasin. Since the groundwater elevation contours do not extend across the entire Subbasin, the storage change was not calculated in the areas that were not contoured, as indicated by the areas without color on Figure 9. There is little known pumping in non-contoured areas within the Subbasin, and therefore the actual change in storage may be slightly higher or lower depending on average change in groundwater levels in the non-contoured areas.

A summary of components used for estimating change in groundwater storage due to groundwater elevation changes is shown in Table 4. Annual groundwater storage change due to changes in groundwater elevation from fall 2021 to fall 2022 increased by approximately 4,900 AF/yr. in the Langley Area.

Table 4. Parameters Used for Estimating Annual Change in Groundwater Storage

Component	Values
Area of contoured portion of Subbasin (acres)	13,000
Storage coefficient	0.08
Average change in groundwater elevation (feet)	4.68
Total annual change in groundwater storage (AF/yr.)	**4,900**

Note: Negative values indicate loss, positive values indicate gain.

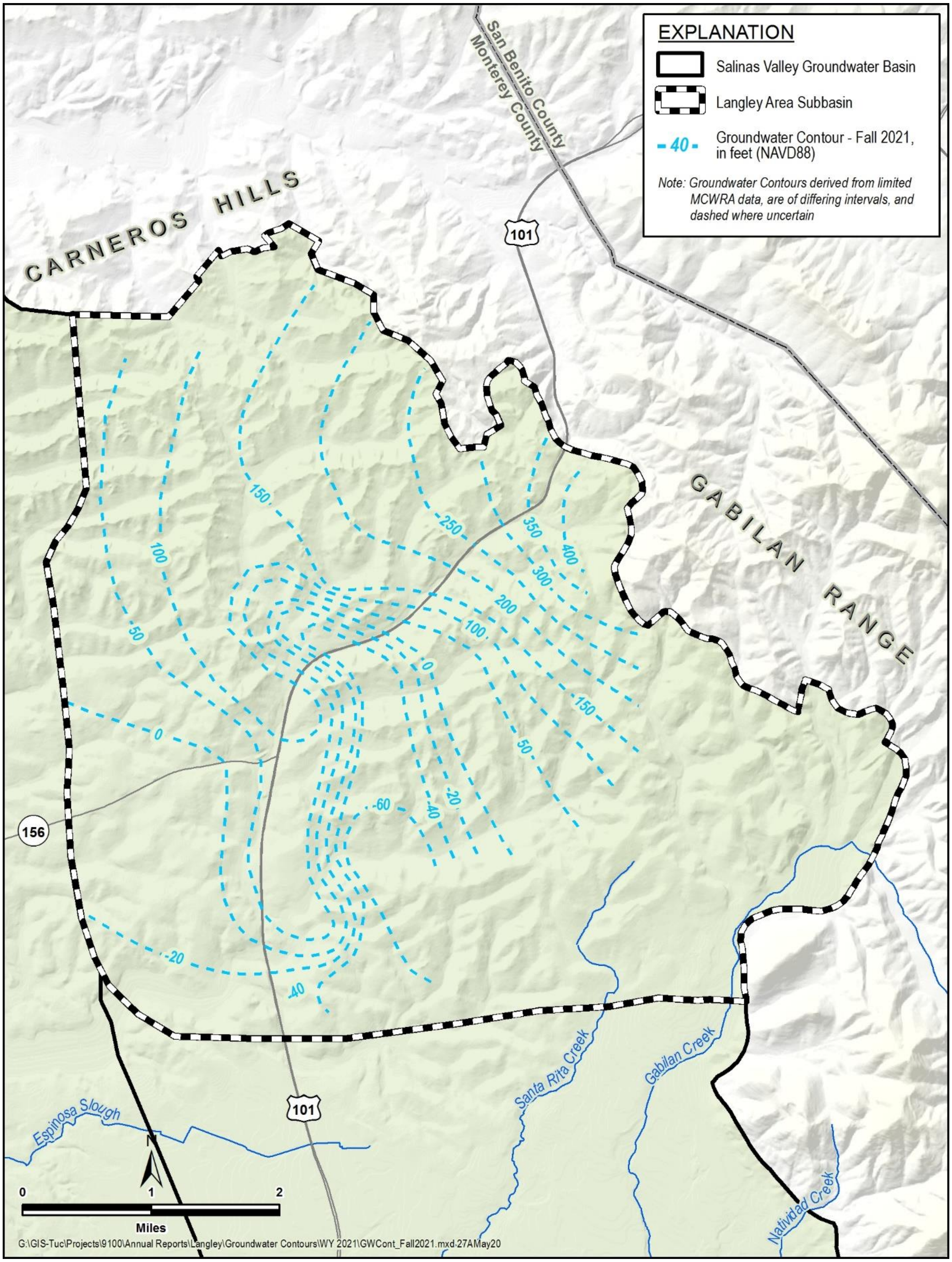


Figure 8. Fall 2021 Groundwater Elevation Contour Map

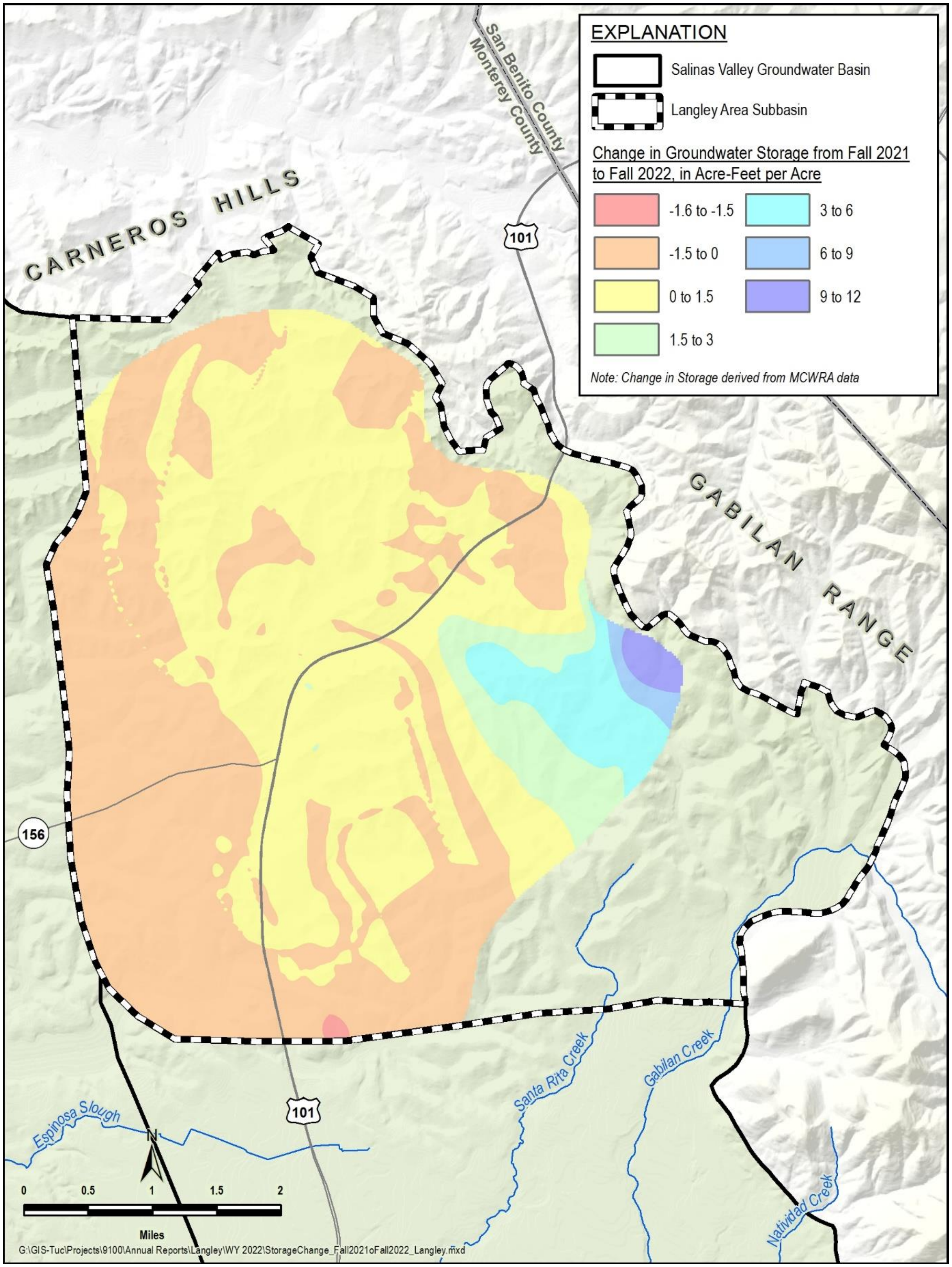


Figure 9. Estimated Annual Change in Groundwater Storage from WY 2021 and WY 2022

GSP Regulations also require that annual and cumulative changes in groundwater storage and groundwater use along with water year type data are plotted together as shown on Figure 10. The annual and cumulative groundwater storage changes included on Figure 10 are based on Subbasin-wide average groundwater elevation changes. This figure includes groundwater extraction from 1995 to 2022, 1995 to 2016 average baseline extraction, and the 2070 projected extraction from Chapter 6 of the GSP. Note that pumping from 2013 to 2020 excludes 2 water systems with annual extractions that appear to have reporting errors. Pumping remained the same in reporting year 2022 as the previous year and is higher than the historical average and projected pumping. The orange line represents cumulative storage change since 1944 (e.g., zero is the amount of groundwater in storage in 1944). The green line represents the annual change in storage from the previous year. The 1995 change in storage value is based on change in storage from 1994. In WY 2022, groundwater storage increased, as shown by the orange and green lines.

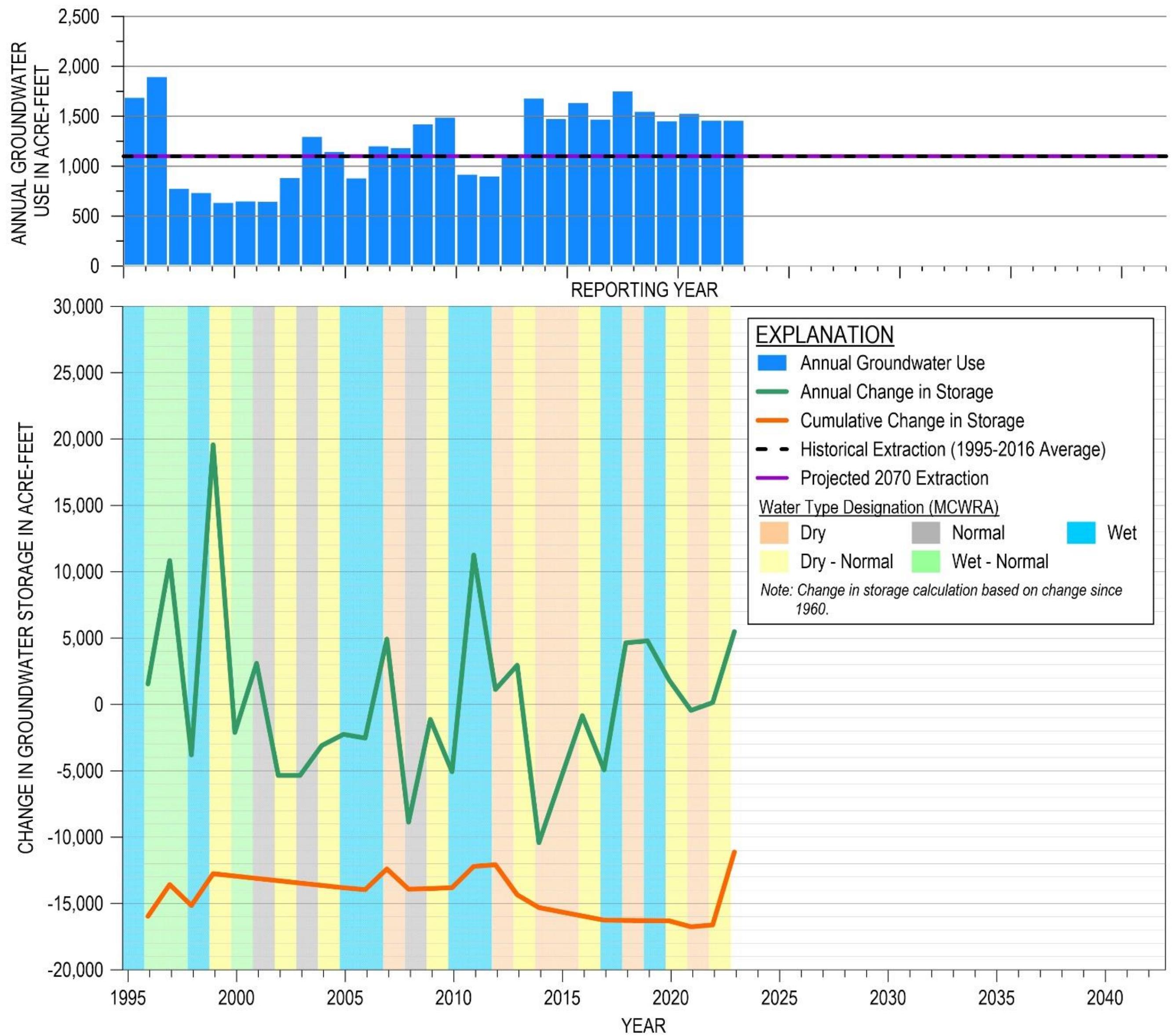


Figure 10. Groundwater Use and Annual and Cumulative Change in Groundwater Storage

3.5 Groundwater Quality

Degradation of groundwater quality is measured in 3 sets of wells: public water system supply wells, on-farm domestic wells, and irrigation wells. Data collected by SWRCB Division of Drinking Water (DDW) is used to evaluate groundwater quality in public water system supply wells. Under the Irrigated Lands Regulatory Program (ILRP), water quality degradation is monitored for on-farm domestic wells and irrigation wells. Water quality data for both programs can be found on SWRCB's GAMA Groundwater Information System. The constituents of concern (COCs) for municipal public water system supply wells and domestic wells have a Maximum Contaminant Level (MCL) or Secondary Maximum Contaminant Level (SMCL) established by the State's Title 22 Regulations. The COC for irrigation wells include those that may lead to reduced crop production and are outlined in the Central Coast Regional Water Quality Control Board's Basin Plan (2019). As discussed in the GSP, each set of wells has its own COCs and only the last sample for each COC and each well are considered. Table 5 and Figure 11 show the number of wells that were sampled in WY 2022 and that have concentrations above the regulatory standard for the COCs listed in the Langley Subbasin GSP. The COCs that had wells with concentrations above the regulatory standard include arsenic, iron, manganese, and nitrate.

Table 5. WY 2022 Groundwater Quality Data

Constituents of Concern (COCs)	Regulatory Standard	Standard Units	Number of Wells Sampled for COC in WY 2022	Number of Wells Sampled in WY 2022 with COC Concentrations Above the Regulatory Standard
DDW Wells				
1,2,3-Trichloropropane (1,2,3 TCP)	0.005	ug/l	13	0
1,2,4-Trichlorobenzene (1,2,4 TCB)	4	ug/l	4	0
1,2-Dibromo-3-chloropropane	0.2	ug/l	0	0
Arsenic	10	ug/l	15	7
Benzo(a)pyrene	0.2	mg/l	1	0
Chloride	500	mg/l	3	0
Di(2-ethylhexyl)phthalate (DEHP)	4	ug/l	1	0
Dinoseb	7	ug/l	2	0
Heptachlor	0.01	ug/l	0	0
Hexachlorobenzene (HCB)	1	ug/l	0	0
Iron	300	ug/l	14	6
Manganese	50	ug/l	13	9
MTBE (Methyl-tert-butyl ether)	13	ug/l	4	0
Nitrate (as nitrogen)	10	mg/l	52	7
Specific Conductance	1600	UMHOS/CM	6	0
Total Dissolved Solids	1000	mg/l	3	0
Vinyl Chloride	0.5	ug/l	4	0
ILRP On-Farm Domestic Wells				
Iron	0.3	mg/l	0	0
Manganese	0.05	mg/l	0	0
ILRP Irrigation Wells				
Manganese	0.2	mg/l	0	0

mg/l – milligrams per liter
ug/l – micrograms per liter
UMHOS/CM - micromhos/centimeter

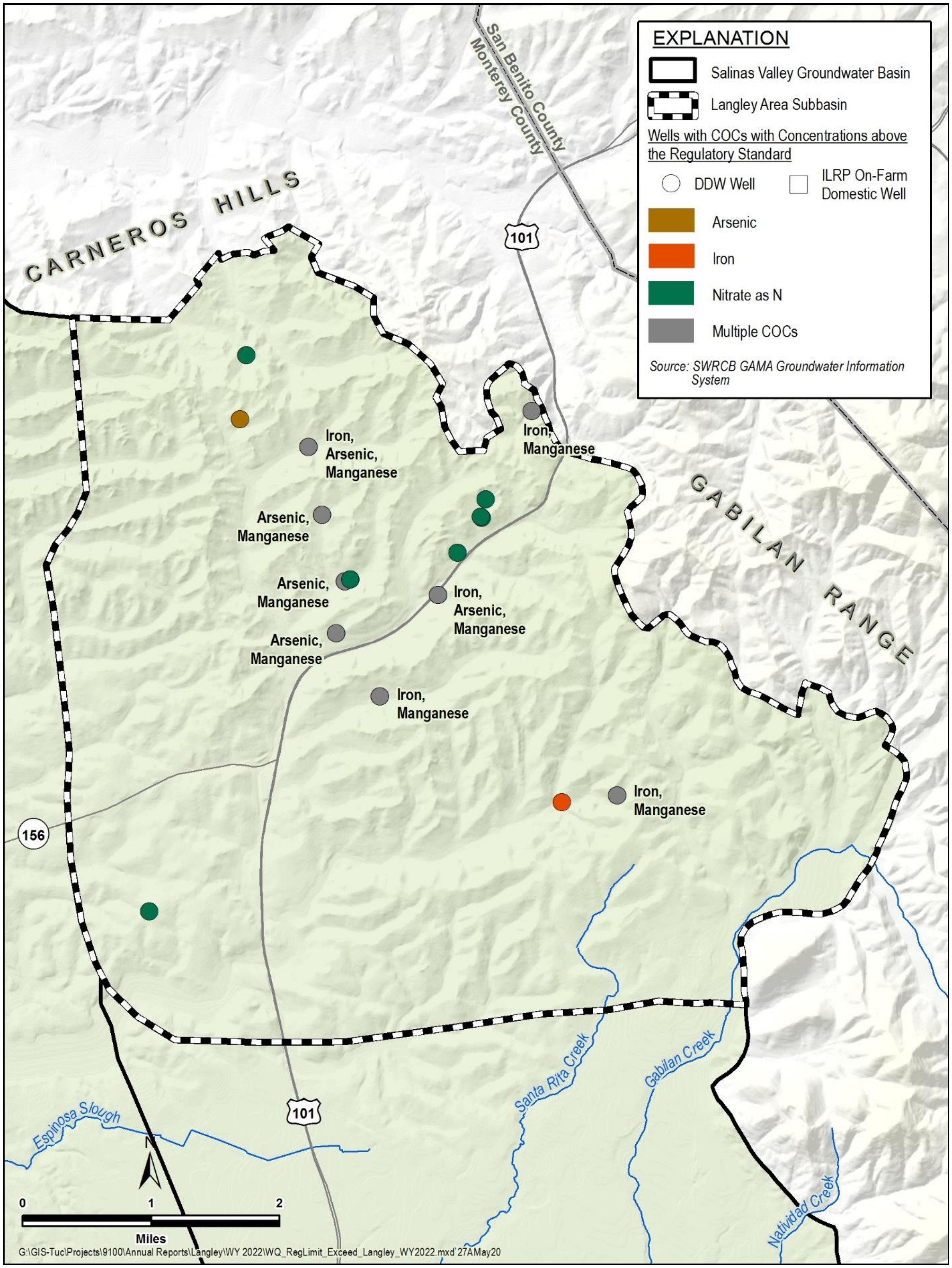


Figure 11. Wells with COC Concentrations Above the Regulatory Standard in WY 2022

3.6 Subsidence

Subsidence is measured using Interferometric Synthetic-Aperture Radar (InSAR) data. These data are provided by DWR on the SGMA data viewer portal (DWR, 2022). Figure 12 shows the annual subsidence for the Langley Area Subbasin from October 2021 to October 2022. Data continue to show negligible subsidence. All land movement was within the estimated error of measurement of +/- 0.1 foot.

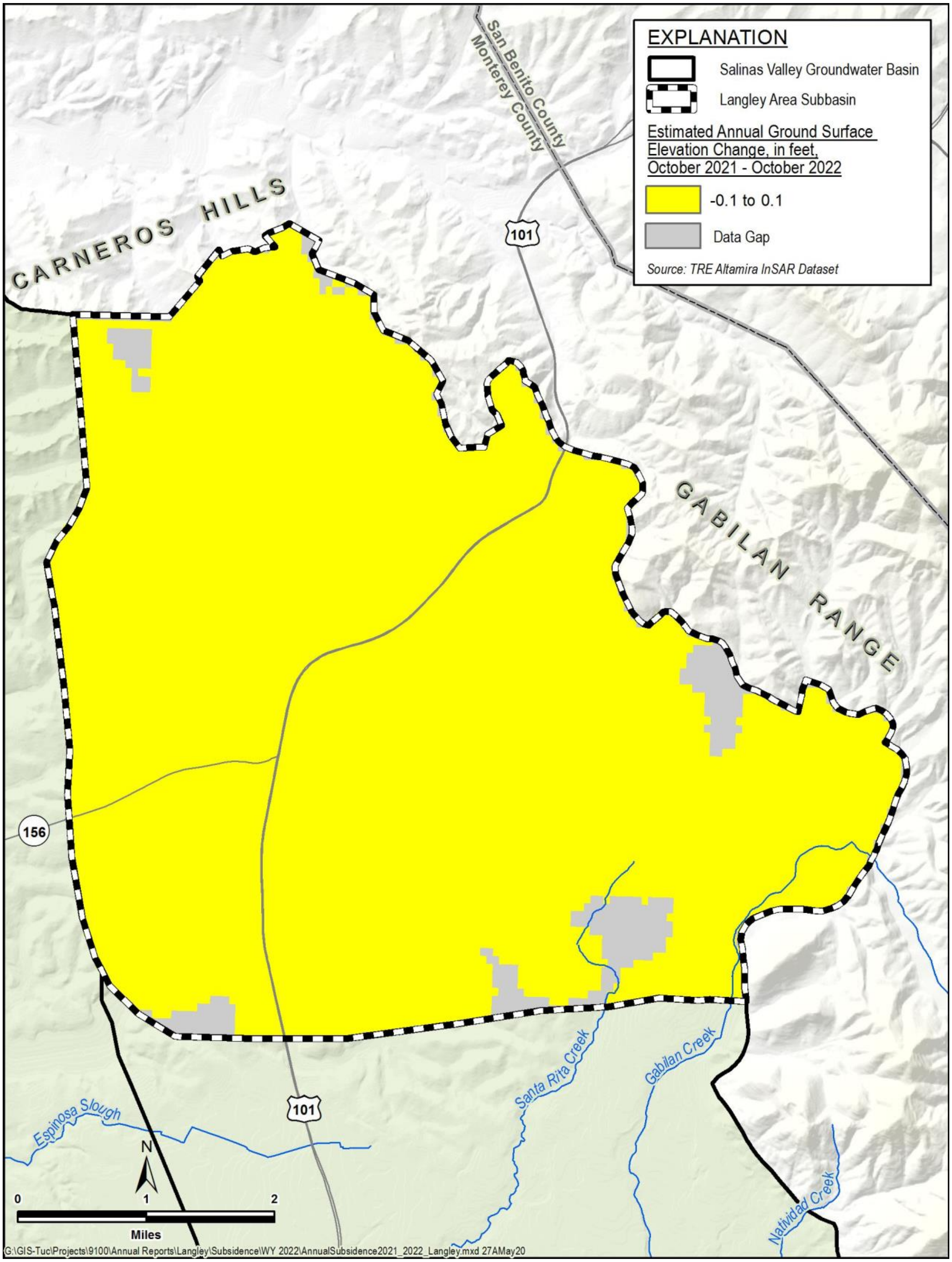


Figure 12. Annual Subsidence

3.7 Depletion of Interconnected Surface Water

As described in Section 4.4.5.1 of the GSP, there are locations of ISW along Gabilan Creek in the Langley Subbasin. SVBGSA is planning on installing a new shallow well along Gabilan Creek in the Eastside Aquifer Subbasin to monitor nearby ISW in the Langley Subbasin and to monitor any future interconnection that could occur within the Eastside Subbasin.

4 ANNUAL PROGRESS TOWARD IMPLEMENTATION OF THE GSP

4.1 WY 2022 Groundwater Management Activities

This section details groundwater management activities that have occurred in WY 2022. These include activities of SVBGSA and MCWRA that promote groundwater sustainability and are important for reaching the GSP sustainability goal. This section begins with an overview of SVBGSA's sustainability strategy for the Langley Subbasin, which builds on and further details the Road Map included in the GSP.

In WY 2022, SVBGSA and MCWRA undertook 4 main categories of activities to begin GSP implementation and further groundwater sustainability goals: GSA policies, operations, and engagement; data and monitoring; planning; and sustainability strategy and activities.

4.1.1 GSA Policies, Operations, and Engagement

SVBGSA focused much of its effort during WY 2022 on developing GSA policies, standardizing GSA operations, and strengthening engagement to provide a strong base for GSP implementation.

Subbasin-level: SVBGSA continued robust stakeholder engagement and strengthened collaboration with key agencies and partners. SVBGSA worked throughout the year with the Langley Area Subbasin Planning Committee to develop the Langley Subbasin GSP and submit it to DWR in January 2022. SVBGSA held 1 meeting of the Langley Area Subbasin Planning Committee during WY 2022 prior to submitting the GSP. As the responsibilities of the subbasin planning committees finished with GSP submittal, SVBGSA set up subbasin implementation committees to lead subbasin-specific GSP implementation activities. The Langley Area Subbasin Implementation Committee was formed with 5 subbasin committee members. SVBGSA held 2 meetings of the Langley Area Subbasin Implementation Committee during WY 2022 to begin implementation of the GSP.

SVBGSA Agency-level: During WY 2022, SVBGSA streamlined its committee structure. The SVBGSA Board of Directors transitioned the responsibilities of the Seawater Intrusion Working Group (SWIG) and Integrated Implementation Committee to the existing Advisory Committee, and the responsibilities of the SWIG Technical Advisory Committee to a new, broader Groundwater Technical Advisory Committee. SVBGSA continued its engagement across all Salinas Valley subbasins through its Board of Directors and Advisory Committee, holding 12 Board meetings and 9 Advisory Committee meetings over the course of WY 2022.

SVBGSA Work Plan, Budget, and Operating Fee: SVBGSA developed a 2-year and 5-year work plan and associated budget, which set the basis for the annual operating fee. The Board of

Directors passed a portion of the fee increase. During the budget discussions, the Board directed staff to determine whether the regulatory fee needed to be applied for some projects and management actions at a specific subbasin level. As a result of the partial funding, some workstreams moved forward while others remained unfunded, slowing implementation of certain activities.

Well Permitting: Governor Gavin Newsom released Executive Order N-7-22 on March 28, 2022. The Executive Order creates a role for GSAs in the groundwater well permitting process during droughts. Specifically, a well permitting agency shall not "approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well in proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by the Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan." In addition, a proposed well cannot cause subsidence that would adversely impact or damage nearby infrastructure. SVBGSA worked with County agencies involved in well permitting, interested parties, and its Board of Directors to develop a process to comply with the Executive Order.

Coordination with Partner Agencies: SVBGSA and MCWRA increased coordination and collaboration through weekly meetings between agency leads and consultants. This resulted in increased awareness of each other's activities, objectives, and challenges. MCWRA and SVBGSA finalized the Memorandum of Understanding that outlines the roles of the 2 agencies and how they will coordinate through the implementation of the GSPs.

SVBGSA conducted meetings throughout the year to reach out to additional agencies and stakeholders to coordinate. These included meetings with the following:

- Monterey County Health Department on data and the existing well permitting and water quality monitoring programs
- Central Coast Regional Water Quality Control Board to discuss the Water Quality Coordination Group
- Integrated Regional Water Management Plan, including coordinating with Central Coast Wetlands Group on watershed coordinator grant

Outreach: Underrepresented Communities are an important stakeholder for the SVBGSA to develop meaningful and long-term relationships with regard to groundwater sustainability. Outreach to Underrepresented Communities included 2 different methods of communication for making workshop materials more accessible. For the first in-person workshop since GSP implementation, SVBGSA offered Spanish interpretation services for attendees in person and online. In addition, SVBGSA informational workshops are archived on a YouTube channel which is easily accessible to interested parties. A workshop on demand management was also translated and presented in Spanish with the video archived for accessible viewing.

SVBGSA worked very closely with the Watershed Coordinator for the Lower Salinas/Gabilan watershed. SVBGSA intends to learn from and apply lessons learned and outreach tools from the Lower Salinas/Gabilan watershed to the rest of the Salinas Basin. The Watershed Coordinator is collaborating with the League of United Latin American Citizens and developing materials to reach residents to increase their general understanding of water resources. A "Water 101" will help residents build a foundation for better voicing their needs regarding particular projects and management actions. In addition, the Watershed Coordinator is working with the School District in hopes of scheduling future groundwater related educational programs, co-funded by the SVBGSA.

4.1.2 Data and Monitoring

SVBGSA also undertook several efforts to further increase data collection and monitoring. During WY 2022:

- SVBGSA reviewed MCWRA and DWR databases to identify any potential existing wells that could fill data gaps and reviewed the data gaps with interested parties.
- SVBGSA and MCWRA began discussions on expanding and enhancing the GEMS program. This effort will primarily take place in 2022 and 2023. These early discussions focused on understanding the challenges to changing the program and steps involved.
- SVBGSA's technical consultant, Montgomery & Associates, continued development of the Salinas Valley Seawater Intrusion Model, which will enable assessment of projects and management actions to address seawater intrusion.
- SVBGSA continued to support the USGS through the Cooperative Agreement for the development of the Salinas Valley Integrated Hydrologic Model.
- SVBGSA received bids for the Deep Aquifers Study and selected Montgomery & Associates. During WY 2022, M&A conducted the preliminary investigation, through which it reviewed existing data and found that the Deep Aquifers extends into the Langley Subbasin. The boundary of the Deep Aquifers will be refined with additional data during the remainder of the Study.

4.1.3 Planning

SVBGSA began WY 2022 by finalizing the Langley Subbasin GSP, working together with the 5 members of the Langley Planning Committee. Final stages included responding to and addressing comments on the draft GSP, reviewing changes with the Langley Planning Committee, and presenting to the SVBGSA Board of Directors for final approval. SVBGSA submitted the GSP in January 2022.

After submittal of the 2022 GSPs, SVBGSA developed an Integrated Implementation Plan to tie the SVBGSA GSPs together. It described how the Salinas Valley's groundwater system functions holistically, outlined a Valley-wide water budget, and provided an integrated understanding of current groundwater conditions and SGMA sustainability goals.

4.1.4 Sustainability Strategy and Activities

The Langley Subbasin GSP included a high-level Road Map for Refining and Implementing Management Actions and Projects. The Road Map organizes management actions and projects identified in Chapter 9 of the GSP into a general priority order for implementation. These include implementation actions that contribute to groundwater management and GSP implementation but do not directly help the Subbasin maintain sustainability. Activities in the implementation strategy build on GSA policies, operations, and engagement; data and monitoring; and planning activities.

The management actions and projects identified in the GSP are sufficient for reaching sustainability in the Langley Subbasin within 20 years and maintaining sustainability for an additional 30 years; however, not all will need to be implemented. They will be integrated with projects for the other Salinas Valley subbasins as appropriate during GSP implementation. The management actions and projects described in this GSP have been identified as beneficial for the Langley Subbasin. The impacts of management actions and projects on other subbasins will be analyzed and taken into consideration as part of the project selection process. Prior to implementation, they will be evaluated in the context of this Subbasin and the entire Valley.

Building on the Road Map in the GSP, SVBGSA has a more comprehensive sustainability strategy to reach sustainability across all 6 sustainability indicators. Figure 13 builds on the general Road Map in the GSP to show SVBGSA's main initial workstreams for implementing the GSP. SVBGSA plans to move from core initial assessments into high level feasibility and discussions on a more refined sustainability approach in WY 2023 and WY 2024. This will start with piloting workshops on decentralized residential in lieu recharge projects, mapping high areas of recharge, a demand management stakeholder assessment, and completing the Deep Aquifers Study. Additionally, SVBGSA is moving forward with projects and feasibility work in adjacent subbasins.

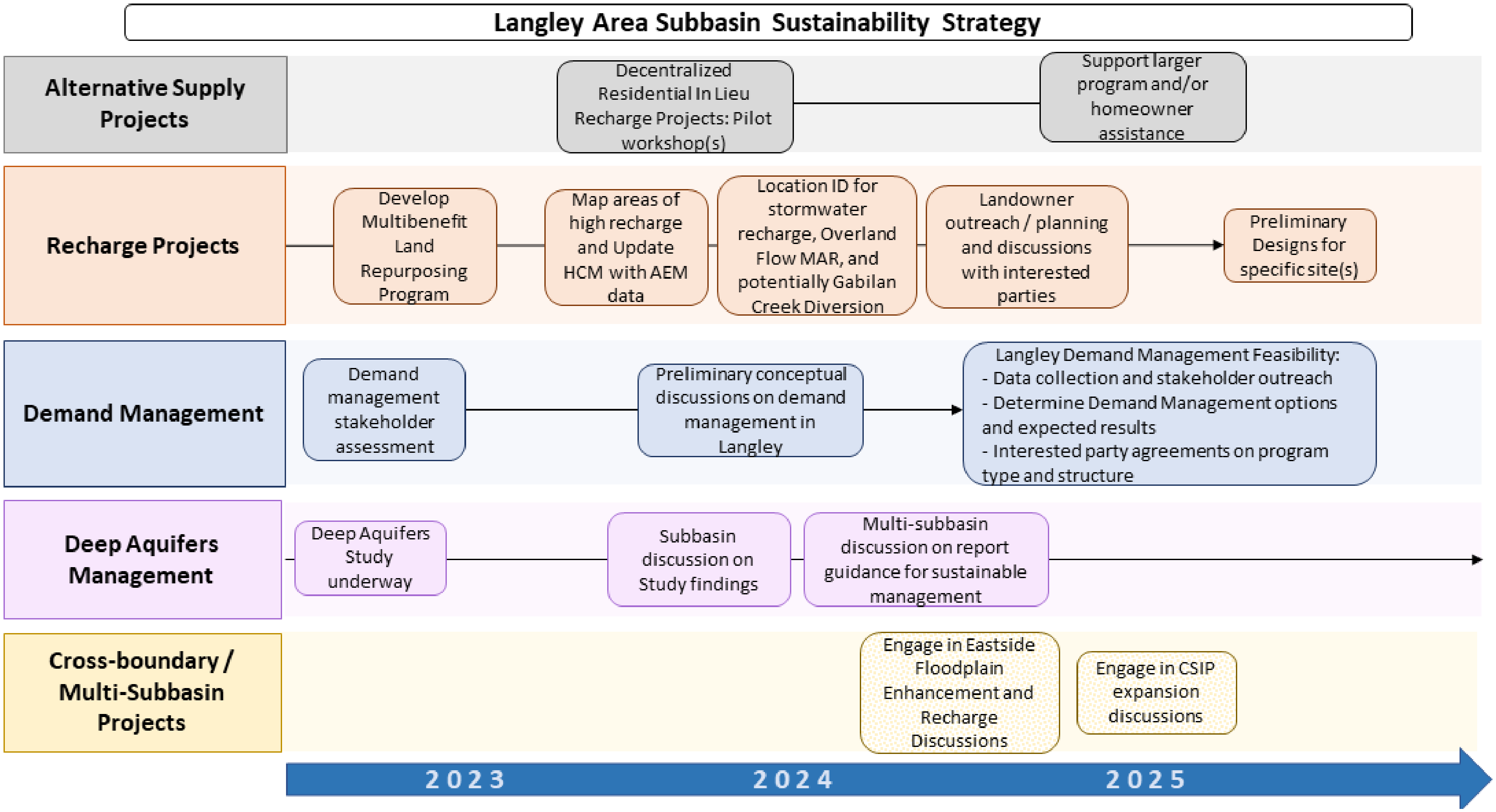


Figure 13. Langley Sustainability Strategy

During WY 2022, SVBGSA, MCWRA, and project partners moved forward with actions that will positively impact groundwater conditions and assess feasibility of additional actions. More specifically, actions undertaken in WY 2022 that contributed to groundwater sustainability include:

Salinas Valley Multibenefit Land Repurposing Program: In collaboration with SVBGSA, the Greater Monterey County Integrated Regional Water Management Group was awarded a $10 million grant through Multibenefit Land Repurposing Program (MLRP) to strategically and voluntarily acquire and repurpose the least viable, most flood-prone portions of irrigated agricultural lands in the lower Salinas Valley. The multibenefit land repurposing concept supports the strategic transition of least productive, most flood prone irrigated land to new, lower water uses that will help reestablish sustainable groundwater supplies – while also providing benefits to landowners, adjacent communities, and freshwater ecosystems. Focusing on the 180/400-Foot Aquifer, Eastside, and Langley Subbasins, this grant will support acquisition of portions of agricultural ranches where interested landowners wish to transition irrigated farmlands to projects that increase recharge and storage, reduce flooding, and enhance water quality and base flow.

Deep Aquifers Study: SVBGSA and cooperative funding partners contracted Montgomery & Associates to undertake a scientific study to better understand the extent, groundwater conditions, and water budget of the Deep Aquifers of the Salinas Valley. The Deep Aquifers Study includes a preliminary investigation that assessed existing data, additional data collection, and development of a final report. In August 2022, SVBGSA received the preliminary investigation results, which included recommended interim monitoring and management actions.

4.2 Sustainable Management Criteria

The Langley Subbasin GSP includes descriptions of significant and unreasonable conditions, minimum thresholds, interim milestones, measurable objectives, and undesirable results for each of DWR's 6 sustainability indicators. SVBGSA determined locally defined significant and unreasonable conditions based on public meetings and staff discussions. The SMC are individual criterion that will each be met simultaneously, rather than in an integrated manner. A brief comparison of the data presented in Section 3 and the SMC criteria are included for each sustainability indicator in the following sections.

Significant and unreasonable conditions occur due to inadequate groundwater management and qualitatively describe groundwater conditions deemed insufficient by subbasin planning committees. Minimum thresholds are quantitative indicators of the Subbasin's locally defined significant and unreasonable conditions. An undesirable result is a combination of minimum threshold exceedances that shows a significant and unreasonable condition across the Subbasin as a whole. Measurable objectives are the goals that reflect the Subbasin's desired groundwater conditions for each sustainability indicator and provide operational flexibility above the minimum thresholds. The GSP and annual reports must demonstrate that groundwater management will not only avoid undesirable results, but can reach measurable objectives by 2042. DWR uses interim milestones every 5 years to review progress from current conditions to the measurable objectives.

Since the GSP addresses long-term groundwater sustainability, some of the metrics for the sustainability indicators may not be applicable in each individual future year. The GSP is developed to avoid undesirable results—under average hydrogeologic conditions—with long-term, deliberate groundwater management. Average hydrogeologic conditions are the anticipated future groundwater conditions in the Subbasin, averaged over the planning horizon and accounting for anticipated climate change. Pursuant to SGMA regulations (California Water Code § 10721(w)(1)), "Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are 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." Therefore, groundwater levels may temporarily exceed minimum thresholds during prolonged droughts, which could be more extreme than those that have been anticipated based on historical data and anticipated climate change conditions. Such temporary exceedances do not constitute an undesirable result. Future groundwater conditions are based on historical precipitation, evapotranspiration, and streamflow, as well as reasonably anticipated climate change and sea level rise. The average hydrogeologic conditions include reasonably anticipated wet and dry periods.

The 2 solid green lines on Figure 14 show the anticipated average precipitation for 2030 and 2070, accounting for reasonable future climatic change (DWR, 2018). Measured annual precipitation from WY 2020 through 2022 are shown as blue dots, and the dashed blue line shows the average measured precipitation since GSP implementation. This figure shows that precipitation in WY 2022 was slightly below the average hydrologic conditions for the Subbasin represented by the average precipitation after GSP implementation. Furthermore, average precipitation since GSP implementation has not risen to the anticipated future average conditions. As a result, it is not anticipated that all measurable objectives have been achieved this year because these measurable objectives were based on managing to average future climatic conditions. This does not mean that minimum thresholds should be exceeded. However, WY 2022 was classified dry-normal, and therefore it is more likely that groundwater levels were low. Areas with current minimum threshold exceedances should be monitored and should demonstrate progress toward interim milestones and measurable objectives as conditions approach the expected average.

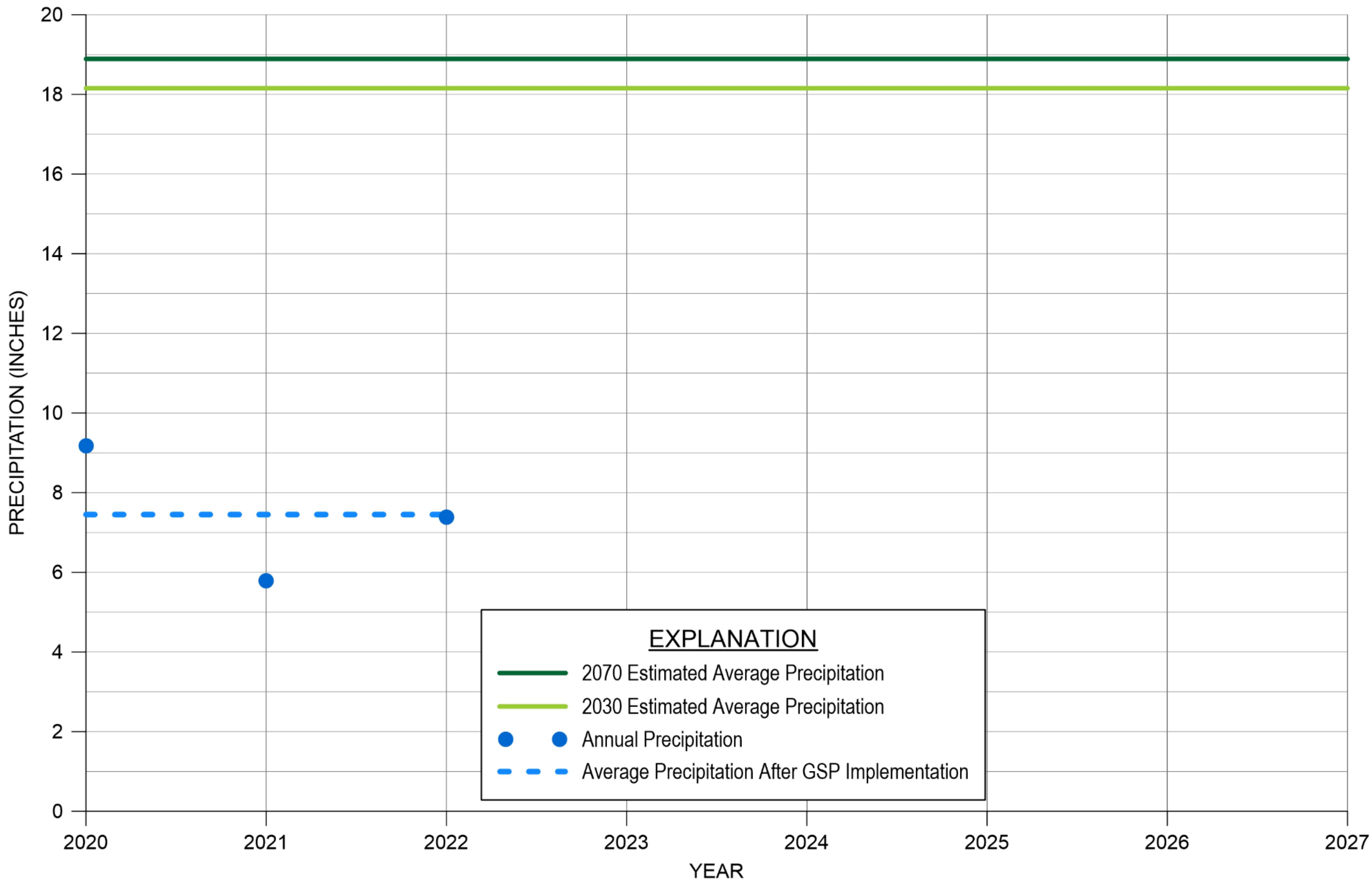


Figure 14. Comparison of Average Precipitation Since GSP Implementation and Estimated Future Average Precipitation

4.2.1 Chronic Lowering of Groundwater Levels SMC

4.2.1.1 Minimum Thresholds

Section 8.6.2.1 of the Langley Subbasin GSP describes the information and methodology used to establish minimum thresholds for chronic lowering of groundwater levels. In the Langley Subbasin, the minimum thresholds were set to 2019 groundwater elevations. The minimum threshold values for each well within the groundwater elevation monitoring network are provided in Table 6. Fall groundwater elevation data are color-coded on this table: red cells mean the groundwater elevation is below the minimum threshold, yellow cells mean the groundwater elevation is above the minimum threshold but below the measurable objective, and green cells mean the groundwater elevation is above the measurable objective. Groundwater elevations are also compared against the groundwater level SMC on Figure 15. In WY 2022, no wells in the Subbasin exceeded their minimum thresholds as indicated by the red cells below.

Table 6. Groundwater Elevation Data, Minimum Thresholds, and Measurable Objectives (in feet)

Below Minimum Threshold	Above Minimum Threshold	Above Measurable Objective

Monitoring Site	Minimum Threshold	WY 2022 Groundwater Elevation	Interim Milestone at Year 2027	Measurable Objective (Goal to Reach at 2042)
13S/03E-08D01	170.0*	174.4	171.3	175.0*
13S/03E-10N01	273.2*	278.5	274.6	278.8
13S/03E-10Q01	435.9*	Not sampled	437.2	440.9*
13S/03E-14M01	356.0	369.5	358.7	366.9
13S/03E-16J01	41.3*	Not sampled	43.0	48.1
13S/03E-17B01	163.4*	166.8	164.7	168.4*
13S/03E-17F02	-41.4	-34.1	-38.9	-31.4*
13S/03E-19H01	-0.8*	-0.7	0.5	4.2*
13S/03E-20B02	100.1*	115.9	101.4	105.1*
13S/03E-22F01	84.4	Not sampled	88.5	100.6
13S/03E-29A01	-61.2	Not sampled	-58.7	-51.2*
13S/03E-29K01	58.8	Not sampled	61.3	68.8*
13S/03E-32H01	-47.0	Not sampled	-44.8	-38.0
13S/03E-33T50	-50.0	Not sampled	-48.8	-45.0

*Groundwater elevation was estimated.

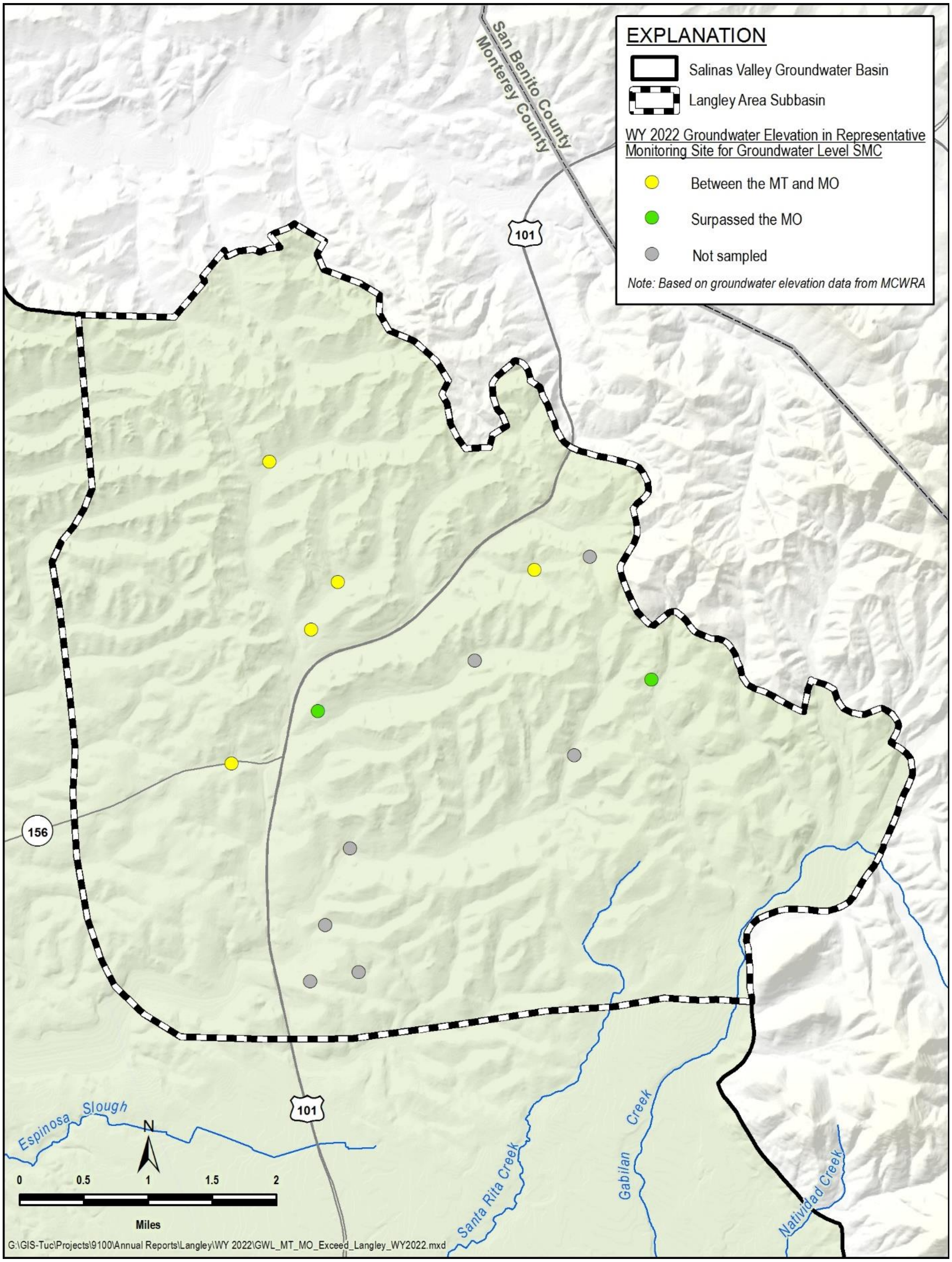


Figure 15. Groundwater Elevations Compared to the Minimum Thresholds and Measurable Objectives

4.2.1.2 Measurable Objectives and Interim Milestones

The measurable objectives for chronic lowering of groundwater levels represent target groundwater elevations that are higher than the minimum thresholds. These measurable objectives provide operational flexibility to ensure that the Subbasin can be managed sustainably over a reasonable range of hydrologic variability. Measurable objectives for the chronic lowering of groundwater levels are summarized in Table 6. Two RMS wells had groundwater elevations higher than their measurable objective in WY 2022.

To help reach measurable objectives, SVBGSA set interim milestones at 5-year intervals. The 2027 interim milestones for groundwater elevations are also shown in Table 6. The WY 2022 groundwater elevations in 6 wells are already higher than the 2027 interim milestones.

4.2.1.3 Undesirable Result

The chronic lowering of groundwater levels undesirable result is a quantitative combination of groundwater elevation minimum threshold exceedances. For the Subbasin, the groundwater elevation undesirable result occurs when:

> *More than 15% of the groundwater elevation minimum thresholds are exceeded.*

Table 6 shows that none of the RMS wells were below their minimum threshold and therefore there is no undesirable result. Groundwater elevation minimum threshold exceedances, compared with the undesirable result, is shown on Figure 16. If a value is in the shaded red area, it constitutes an undesirable result. This graph will be updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

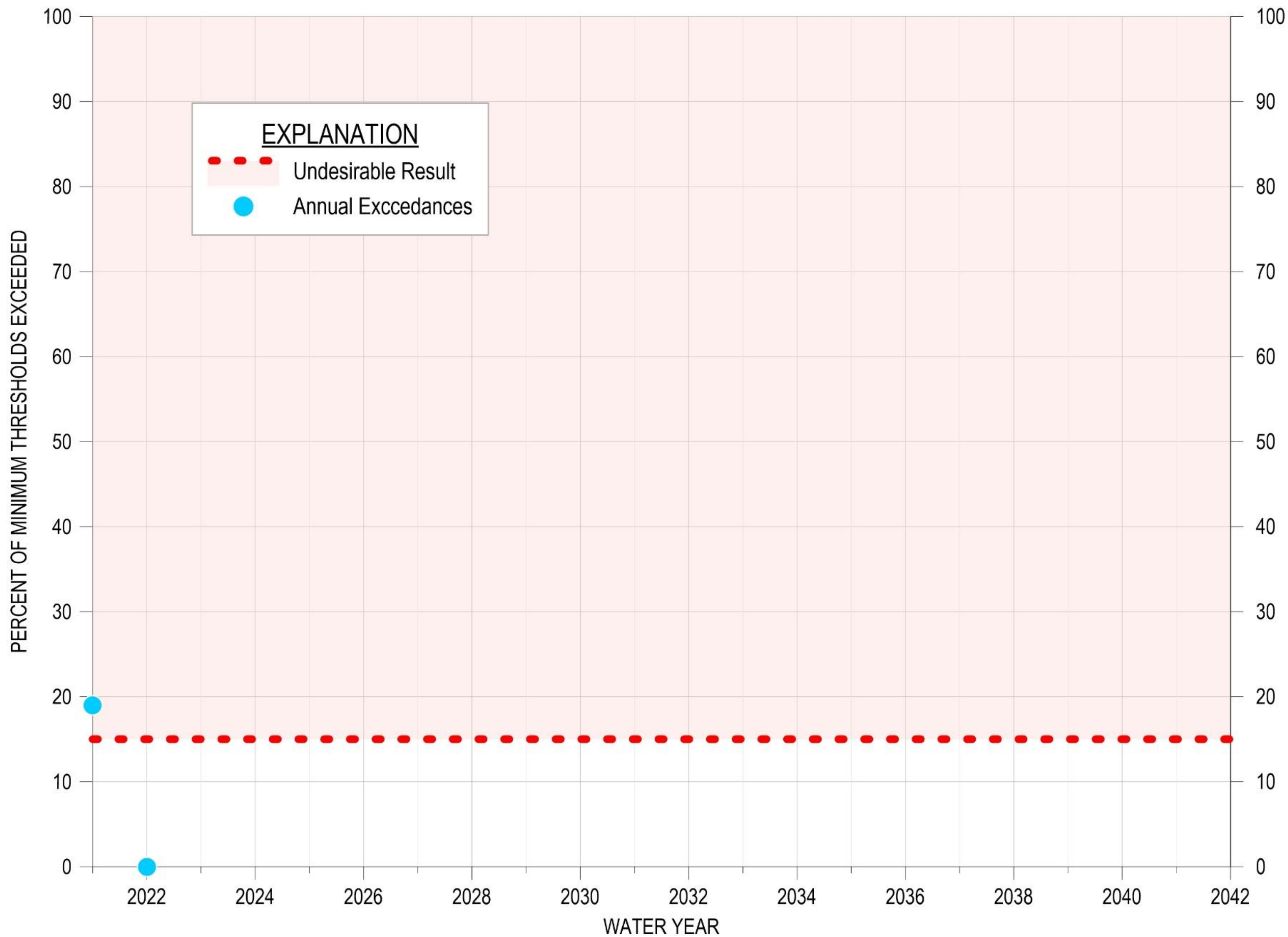


Figure 16. Groundwater Elevation and Storage Exceedances Compared to the Undesirable Result

4.2.2 Reduction in Groundwater Storage SMC

4.2.2.1 Minimum Thresholds

The reduction in groundwater storage SMC is established by proxy using groundwater elevations. The minimum thresholds for reduction in groundwater storage are measured using groundwater elevations as proxies; therefore, the minimum thresholds are identical to the minimum thresholds for groundwater level RMS wells, which are those described in Section 4.2.1.1.

4.2.2.2 Measurable Objective and Interim Milestones

The measurable objectives and interim milestones for reduction in groundwater storage are the same as those for groundwater elevations that are described in Section 4.2.1.2.

4.2.2.3 Undesirable Result

The criteria used to define undesirable results for reduction of groundwater storage are based on minimum thresholds established for chronic lowering of groundwater levels. The reduction of storage undesirable result occurs when:

> *More than 15% of groundwater elevation minimum thresholds are exceeded. The undesirable result for reduction in groundwater storage is established by proxy using groundwater elevations.*

Based on the groundwater elevation data presented in Section 4.2.1, less than 15% of wells exceeded their minimum thresholds. The WY 2022 groundwater storage SMC as measured by proxy using groundwater elevations do not cause an undesirable result as shown on Figure 16. If a value is in the shaded red area, it would constitute an undesirable result.

4.2.3 Seawater Intrusion SMC

4.2.3.1 Minimum Thresholds

The minimum threshold for seawater intrusion is defined by a chloride concentration isocontour of 500 mg/L for the principal aquifer where seawater intrusion may lead to undesirable results. Section 8.8.2.1 of the Langley Subbasin GSP describes the information and methodology used to establish minimum thresholds for chronic seawater intrusion. The Subbasin boundary is adopted as the seawater intrusion minimum threshold as depicted by the red line on Figure 17.

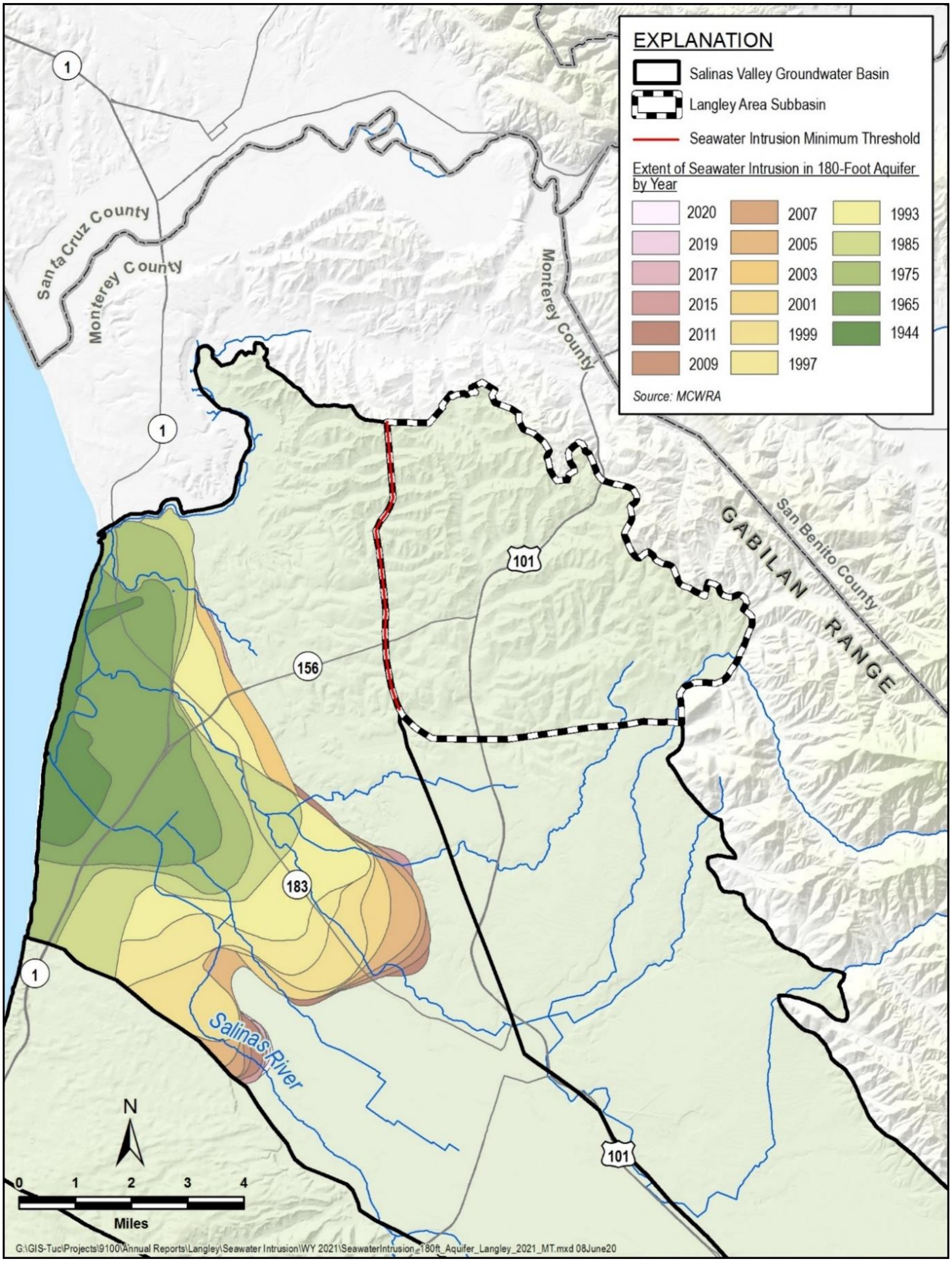


Figure 17. Seawater Intrusion Compared to the Seawater Intrusion Minimum Threshold and Measurable Objective

4.2.3.2 Measurable Objectives and Interim Milestones

The measurable objective for seawater intrusion is identical to the minimum threshold that is shown on Figure 17.

4.2.3.3 Undesirable Result

The seawater intrusion undesirable result is a quantitative combination of chloride concentrations minimum threshold exceedances. Because even localized seawater intrusion is not acceptable, the subbasin-wide undesirable result is zero exceedances of minimum thresholds. For the Subbasin, the seawater intrusion undesirable result is:

> *Any exceedance of the minimum threshold, resulting in mapped seawater intrusion within the Subbasin boundary.*

There is no seawater intrusion in the Langley Subbasin; thus an undesirable result does not exist.

4.2.4 Degraded Groundwater Quality SMC

4.2.4.1 Minimum Thresholds

The degraded groundwater quality minimum thresholds were established for each COC based on the number of supply wells that had higher concentrations than the regulatory standards for drinking water and irrigation water during the last sampling event. Section 8.9.2.1 of the Langley Subbasin GSP describes the information and methodology used to establish minimum thresholds for degraded groundwater quality. The minimum threshold values for each COC for the wells within the groundwater quality monitoring network are provided in Table 7. Table 7 also shows the wells with concentrations higher than the regulatory standard in WY 2022 discussed in Section 3.5, and the running total of wells with concentrations higher than the regulatory standard, which are used to assess the SMC. Only the latest sample for each COC at each well is used for the running total. The minimum thresholds are set to no additional wells with concentrations higher than the regulatory standard for each constituent, as compared to the 2019 baseline. The SMC are based on the total number of wells in order to assess subbasin-wide conditions; so if 1 well rises above a COC’s regulatory standard and another falls below, there is no change in the number of wells with concentrations above the regulatory standard. These conditions were determined to be significant and unreasonable because COC concentrations above the regulatory standard may cause a financial burden on groundwater users. Public water systems with COC concentrations above the MCL or SMCL are required to add treatment to the drinking water supplies or drill new wells. Agricultural wells with COCs that significantly reduce crop production may reduce grower’s yields and profits.

As the GSP established a minimum threshold for each COC, there is an exceedance of the minimum threshold if there are more wells with concentrations above the regulatory standard than there were in 2019. In WY 2022, 4 COCs exceeded their groundwater quality minimum thresholds. The last column in Table 7 includes the number of wells above the 2019 baseline that had higher concentrations than the regulatory standard. If a COC has more wells with concentrations above the regulatory standard than the minimum threshold, it is highlighted in orange to indicate an exceedance. The negative numbers in the last column indicate a drop in the total number of wells with concentrations above the regulatory limit, as compared to 2019 when the minimum threshold was established.

In November 2022, SWRCB provided DWR with its assessment of degradation of groundwater quality SMC for high and medium priority subbasins like the Langley Subbasin. SWRCB reviewed the COCs listed in the GSP and suggested adding hexavalent chromium to the list of COCs for the Subbasin. Although this constituent has exceeded its regulatory standard in the past, no wells in the monitoring network had exceeded the regulatory standard in the latest sampling for wells. SVBGSA will continue to monitor this constituent and will add it as a COC for the Subbasin if it exceeds the regulatory standard in wells in the monitoring network.

Compared to WY 2021, the same COCs exceeded their minimum thresholds. However, arsenic and manganese both had additional wells with concentrations above the regulatory limit, and nitrate had l fewer well above the regulatory limit.

Table 7. Minimum Thresholds and Measureable Objectives for Degradation of Groundwater Quality

Constituents of Concern (COCs)	Minimum Threshold/ Measurable Objective (Baseline number of wells with COC concentrations above the Regulatory Standard in 2019)	Number of Wells Sampled in WY 2022 with COC Concentrations Above the Regulatory Standard	Total Number of Wells with COC Concentrations Above the Regulatory Standard in Most Recent Sample	Number of Wells with COC Concentrations above Minimum Threshold (negative if fewer than MT)
DDW Wells				
1,2,3-Trichloropropane (1,2,3 TCP)	6	0	6	0
1,2,4- Trichlorobenzene (1,2,4 TCB)	1	0	1	0
1,2-Dibromo-3-chloropropane	6	0	6	0
Arsenic	3	7	13	10
Benzo(a)pyrene	1	0	1	0
Chloride	2	0	2	0
Di(2-ethylhexyl)phthalate (DEHP)	1	0	1	0
Dinoseb	8	0	8	0
Heptachlor	2	0	2	0
Hexachlorobenzene (HCB)	1	6	1	0
Iron	17	9	22	5
Manganese	15	0	21	6
MTBE (Methyl-tert-butyl ether)	1	7	1	0
Nitrate (as nitrogen)	14	0	21	7
Specific Conductance	2	0	2	0
Total Dissolved Solids	2	0	2	0
Vinyl Chloride	88	0	87	-1
ILRP On-Farm Domestic Wells				
Iron	1	0	1	0
Manganese	1	0	1	0
ILRP Irrigation Wells				
Manganese	1	0	1	0

4.2.4.2 Measurable Objectives and Interim Milestones

The measurable objectives for degradation of groundwater quality represent a target number of wells with COC concentrations above the regulatory standard and are set at the 2019 baseline to aim for no degradation. SGMA does not require the improvement of groundwater quality; therefore, the Langley GSP includes measurable objectives identical to the as defined in Table 7. Interim milestones are also set at the minimum threshold levels. Although there were 4 groundwater quality minimum threshold exceedances in WY 2022, the groundwater quality data already meet the 2027 interim milestones because these exceedances are not a result of GSA groundwater management actions.

4.2.4.3 Undesirable Result

The degradation of groundwater quality undesirable result is a quantitative combination of groundwater quality minimum threshold exceedances. Any groundwater quality degradation as a direct result of GSP implementation is unacceptable. Some groundwater quality changes are expected to occur independent of SGMA activities; because these changes are not related to SGMA activities they do not constitute an undesirable result. The degradation of groundwater quality undesirable result occurs when:

> *Future or new minimum thresholds exceedances are caused by a direct result of GSA groundwater management action(s), including projects or management actions and regulation of groundwater extraction.*

Table 7 shows 4 constituents exceeded their minimum threshold in WY 2022. However, since SVBGSA has yet to implement any projects or management actions in the Subbasin, these exceedances are not due to GSA actions. Therefore, the groundwater quality data do not exceedances do not cause an undesirable result. The groundwater quality minimum threshold exceedances, compared with the undesirable result, are shown on Figure 18. If a value is in the shaded red area due to GSA action, it would constitute an undesirable result. This graph is updated annually with new data to demonstrate the sustainability indicator’s direction toward sustainability.

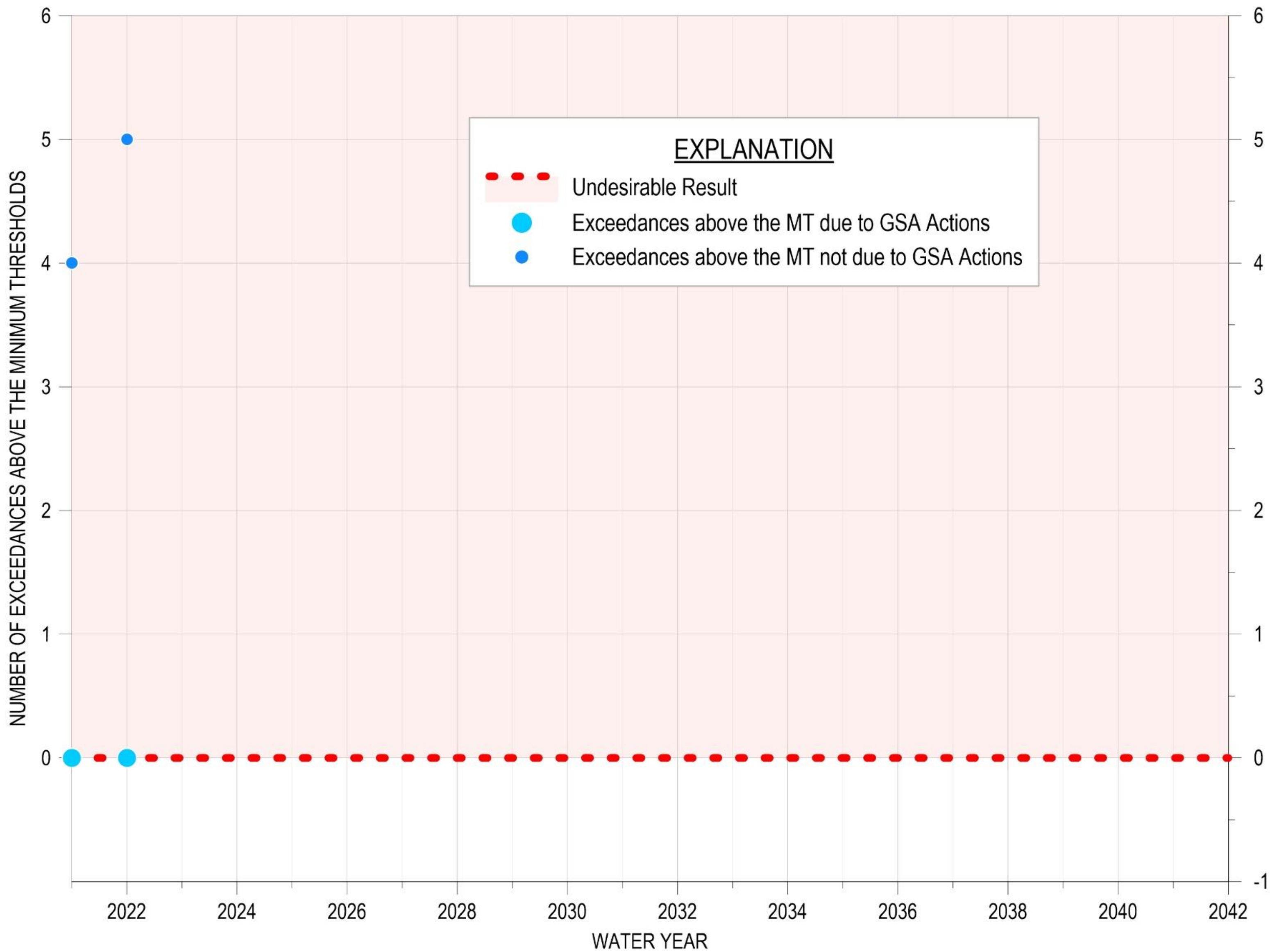


Figure 18. Groundwater Quality Minimum Threshold Exceedances Compared to the Undesirable Result

4.2.5 Land Subsidence SMC

4.2.5.1 Minimum Thresholds

Accounting for measurement errors in the InSAR data, the minimum threshold for land subsidence in the GSP is zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Section 8.10.2.1 of the Langley Area Subbasin GSP describes the information and methodology used to establish minimum thresholds for subsidence. A single minimum threshold is set for the entire Subbasin. Annual subsidence data from October 2021 to October 2022 demonstrated less than the minimum threshold of 0.1 foot per year, as shown on Figure 12.

4.2.5.2 Measurable Objectives and Interim Milestones

The measurable objectives for land subsidence represent target subsidence rates in the Subbasin. Because the minimum threshold of zero net long-term subsidence is the best achievable outcome, the measurable objectives are identical to the minimum thresholds: zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Figure 12 demonstrates that data from October 2021 to October 2022 showed less than the measurable objective of no more than 0.1 foot per year of measured subsidence is being met. The interim milestones are identical to minimum threshold of 0.1 foot per year. The latest subsidence data shows that the 2027 subsidence interim milestone is already being met.

4.2.5.3 Undesirable Result

The land subsidence undesirable result is a quantitative combination of subsidence minimum threshold exceedances. For the Langley Subbasin, no long-term subsidence is acceptable. Therefore, the land subsidence undesirable result occurs when:

> *There is an exceedance of the minimum threshold for land subsidence due to lowered groundwater elevations.*

Data from October 2021 to October 2022 showed subsidence was below the minimum threshold of 0.1 foot per year. The latest land subsidence data, therefore, does not lead to an undesirable result. Maximum annual measured subsidence in the Subbasin, compared with the subsidence undesirable results, is shown on Figure 19. If a value is in the shaded red area, it would constitute an undesirable result. This graph is updated annually with new data to demonstrate the current status of the sustainability indicator.

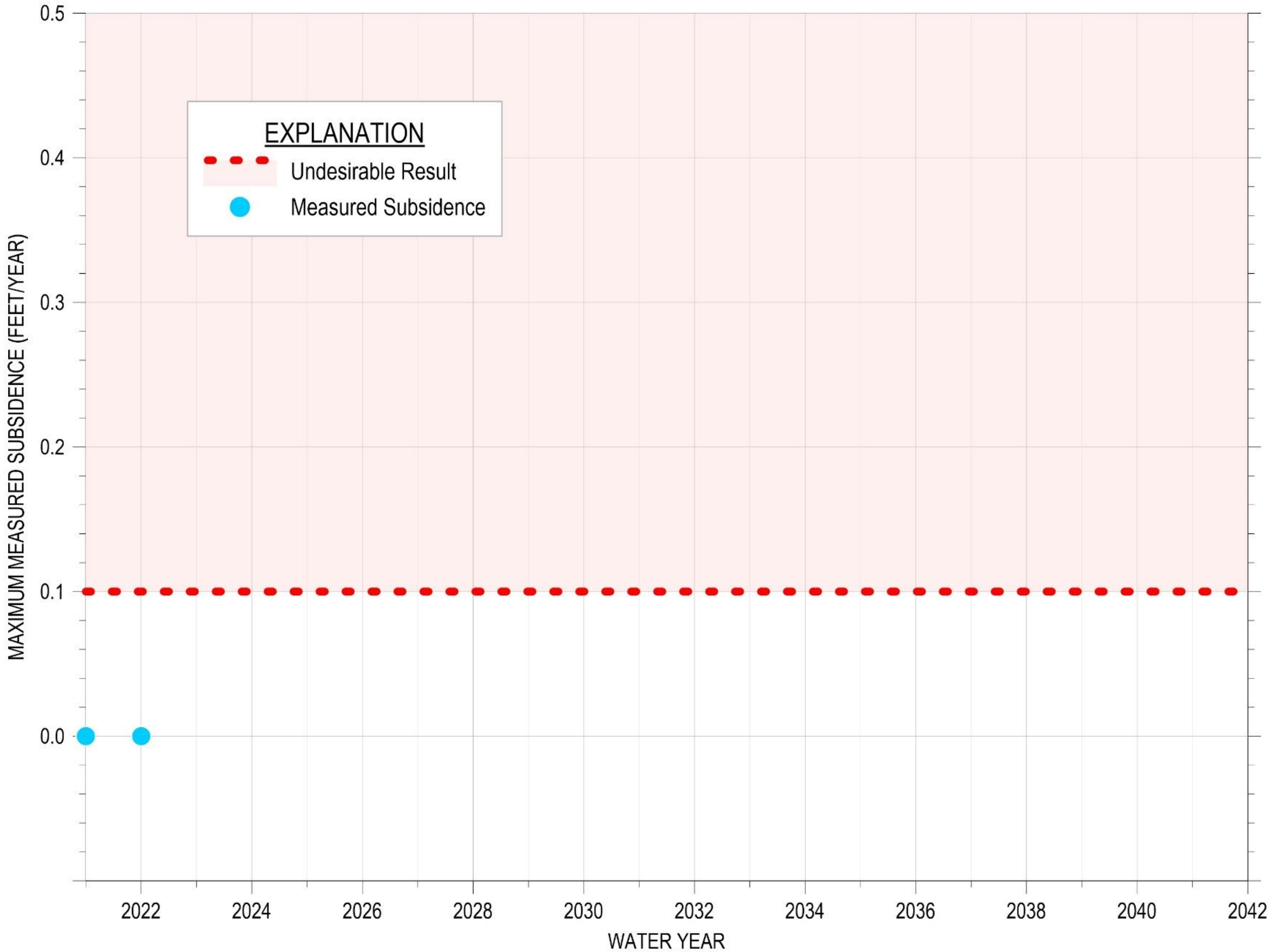


Figure 19. Maximum Measured Subsidence Compared to the Undesirable Result

4.2.6 Depletion of Interconnected Surface Water SMC

As mentioned in Section 3.7, there are no existing shallow wells that can be used to monitor ISW in the Langley Subbasin. When ISW monitoring wells are drilled in the Subbasin, the current conditions will be compared to the SMC presented below.

4.2.6.1 Minimum Thresholds

The minimum thresholds for depletion of ISW are established by proxy using shallow groundwater elevations and are established to maintain consistency with chronic lowering of groundwater elevation and reduction in groundwater storage minimum thresholds. Minimum thresholds at shallow groundwater monitoring wells will be established when the monitoring network is developed by interpolating values from the groundwater elevation contour maps.

4.2.6.2 Measurable Objectives and Interim Milestones

The measurable objectives for depletion of ISW target groundwater elevations that are higher than the minimum thresholds. The measurable objectives are established to maintain consistency with the chronic lowering of groundwater elevation and reduction in groundwater storage minimum thresholds, which are also established based on groundwater elevations.

4.2.6.2 Undesirable Result

The depletion of ISW undesirable result is a quantitative combination of minimum threshold exceedances. The undesirable result for depletion of ISW occurs when:

> *There is an exceedance of the minimum threshold in a shallow groundwater monitoring well used to monitor interconnected surface water.*

As stated in Section 3.7, the shallow groundwater monitoring network for ISW is not developed. Therefore, there are no data from WY 2022 to compare to the undesirable result at this point.

5 CONCLUSION

This 2022 Annual Report updates data and information for the Langley Area Subbasin GSP from WY 2021 to WY 2022 with the best available data. It covers GSP implementation activities up to September 30, 2022. All GSP implementation and annual reporting meets the regulations set forth in the SGMA GSP Regulations.

Results show little change in groundwater sustainability indicators when compared to the current conditions described in the GSP. WY 2022 was classified as dry-normal. Groundwater elevations increased in most of the RMS wells in the monitoring network that were sampled in WY 2022, with most wells showing elevations between their minimum thresholds and measurable objectives. Change in groundwater storage, as measured by groundwater elevation changes, increased from WY 2021 and WY 2022. There is still no seawater intrusion in the Subbasin in WY 2022. Groundwater quality data showed 4 exceedances of minimum thresholds, none were caused by a direct result of GSA groundwater management action(s). Negligible subsidence was observed in WY 2022 in the Subbasin. Finally, there are no existing monitoring wells for depletion of ISW; therefore, there is no ISW data presented in this Annual Report.

In WY 2022, the SVBGSA–working together with the Langley Subbasin Planning Committee–finalized and submitted the Langley Subbasin GSP. SVBGSA continued to actively engage stakeholders through its Board of Directors and committees, worked on filling data gaps, and began activities to implement the GSP. In particular, SVBGSA started and received preliminary investigation results from the Deep Aquifer Study, MCWRA continued to convene the Drought Technical Advisory Committee, and the Greater Monterey County Integrated Regional Water Management Group, in collaboration with SVBGSA, was awarded a $10 million MLRP grant to acquire and repurpose the least viable, most flood-prone portions of irrigated agricultural lands in the lower Salinas Valley.

REFERENCES

Brown and Caldwell. 2015. *State of the Salinas River Groundwater Basin - Hydrology Report*. Monterey County Water Resources Agency Water Reports. http://digitalcommons.csumb.edu/hornbeck_cgb_6_a/21.

California Department of Water Resources (DWR). 2004. Bulletin 118 Interim Update 2004; Salinas Valley Groundwater Basin, Langley Area Subbasin. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/3_004_09_LangleyAreaSubbasin.pdf.

_____. 2018. Guidance for Climate Change Data During Groundwater Sustainability Plan Development. 101 p. https://water.ca.gov/-/media/DWR-Website/WebPages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/BestManagement-Practices-and-Guidance-Documents/Files/Resource-Guide-ClimateChange-Guidance_v8_ay_19.pdf.

_____. 2022. SGMA Data Viewer: Land Subsidence. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub.

CCRWQCB (Central Coast Regional Water Quality Control Board). 2019. *Water Quality Control Plan for the Central Coast Basin, June 2019 Edition*. California Environmental Protection Agency. https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/2019_basin_plan_r3_complete_webaccess.pdf

Fugro West Inc. 1995. "North Monterey County Hydrogeologic Study Volume I Water Resources." Prepared for Monterey County Water Resources Agency. October 1995. 423p. https://www.co.monterey.ca.us/home/showpublisheddocument/19566/636232667496200.

MCWRA (Monterey County Water Resources Agency). 2005. *Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River*.

_____. 2015. CASGEM Monitoring Plan for High and Medium Priority Basins in the Salinas Valley Groundwater Basin.

State Water Resources Control Board (SWRCB). 2022a. Electronic Water Rights InformationManagement System (eWRIMS). Accessed December 27, 2022. https://ciwqs.waterboards.ca.gov/ciwqs/ewrims/reportingDiversionDownloadPublicSetup.do

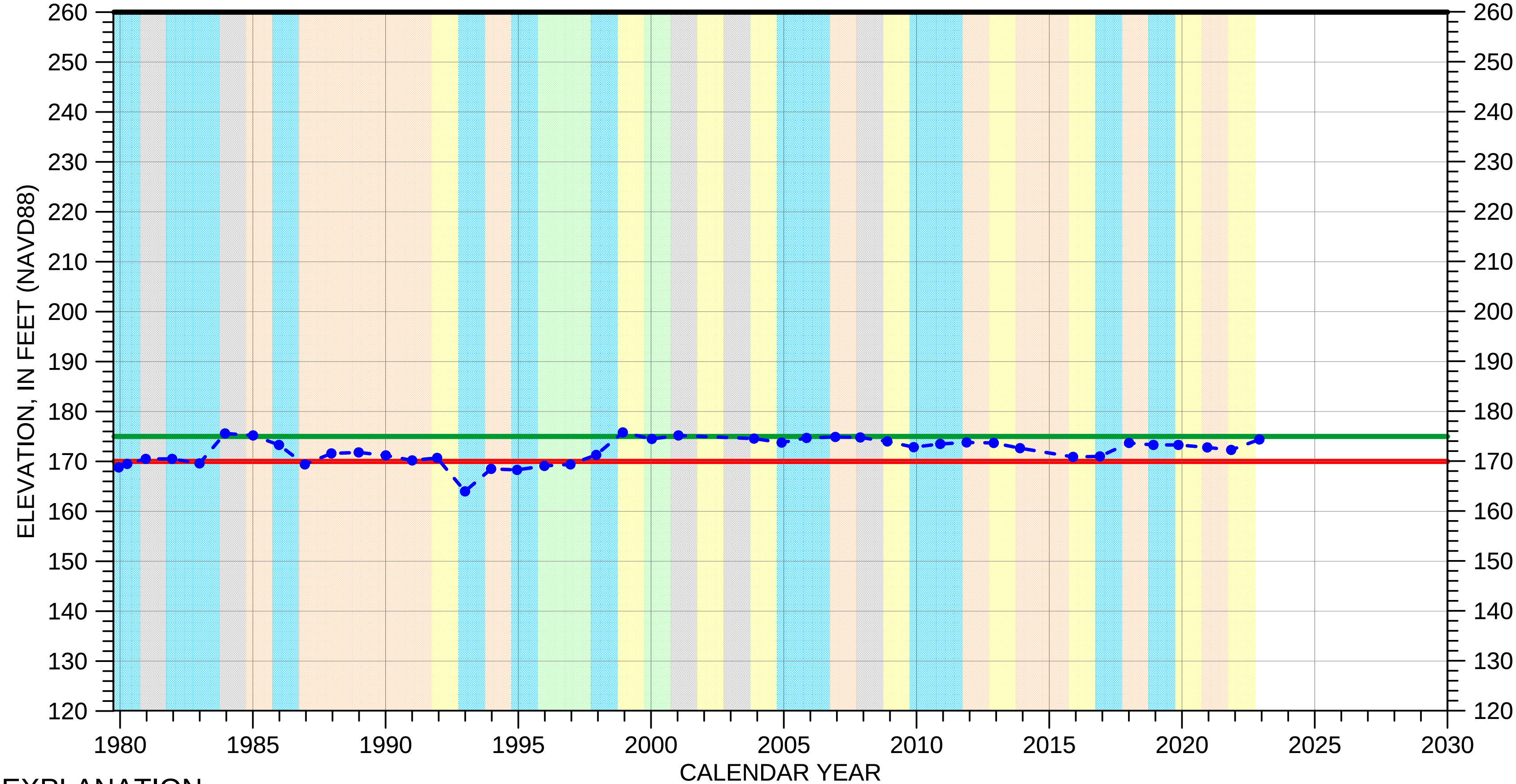
_____. 2022b. Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System Website. Accessed January 17, 2022. https://gamagroundwater.waterboards.ca.gov/gama/datadownload.

Schwartz, D.L. 1983. “Geologic History of Elkhorn Slough, Monterey County, California.” M.S. Thesis, San Jose State University. December 1983. https://scholarworks.calstate.edu/downloads/9w0327700

APPENDIX A. HYDROGRAPHS OF REPRESENTATIVE MONITORING SITE WELLS

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-08D01

Langley Area Subbasin

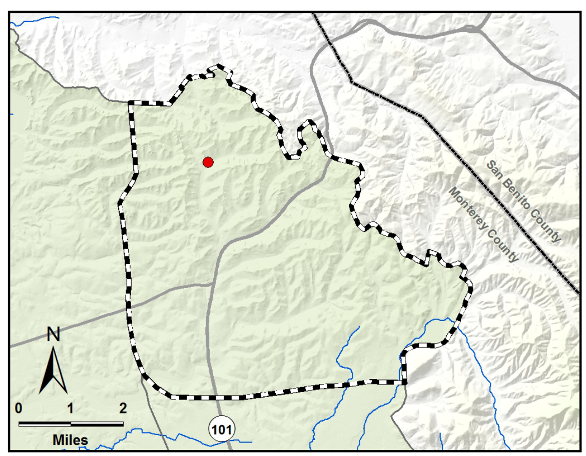


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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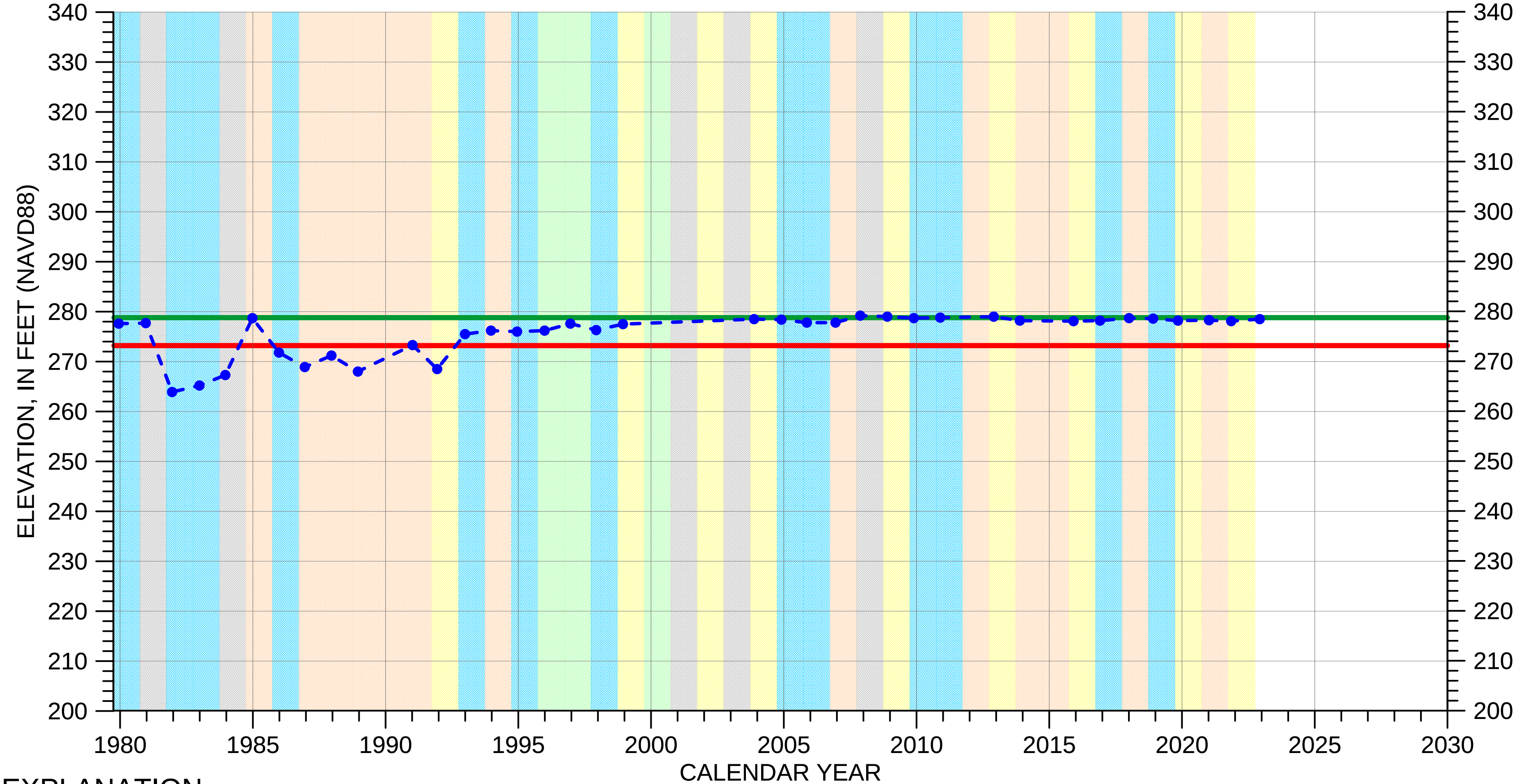
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-10N01

Langley Area Subbasin

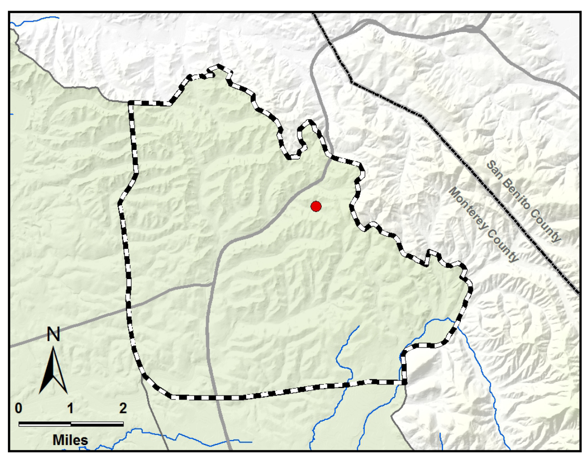


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (383 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Perforated interval unknown

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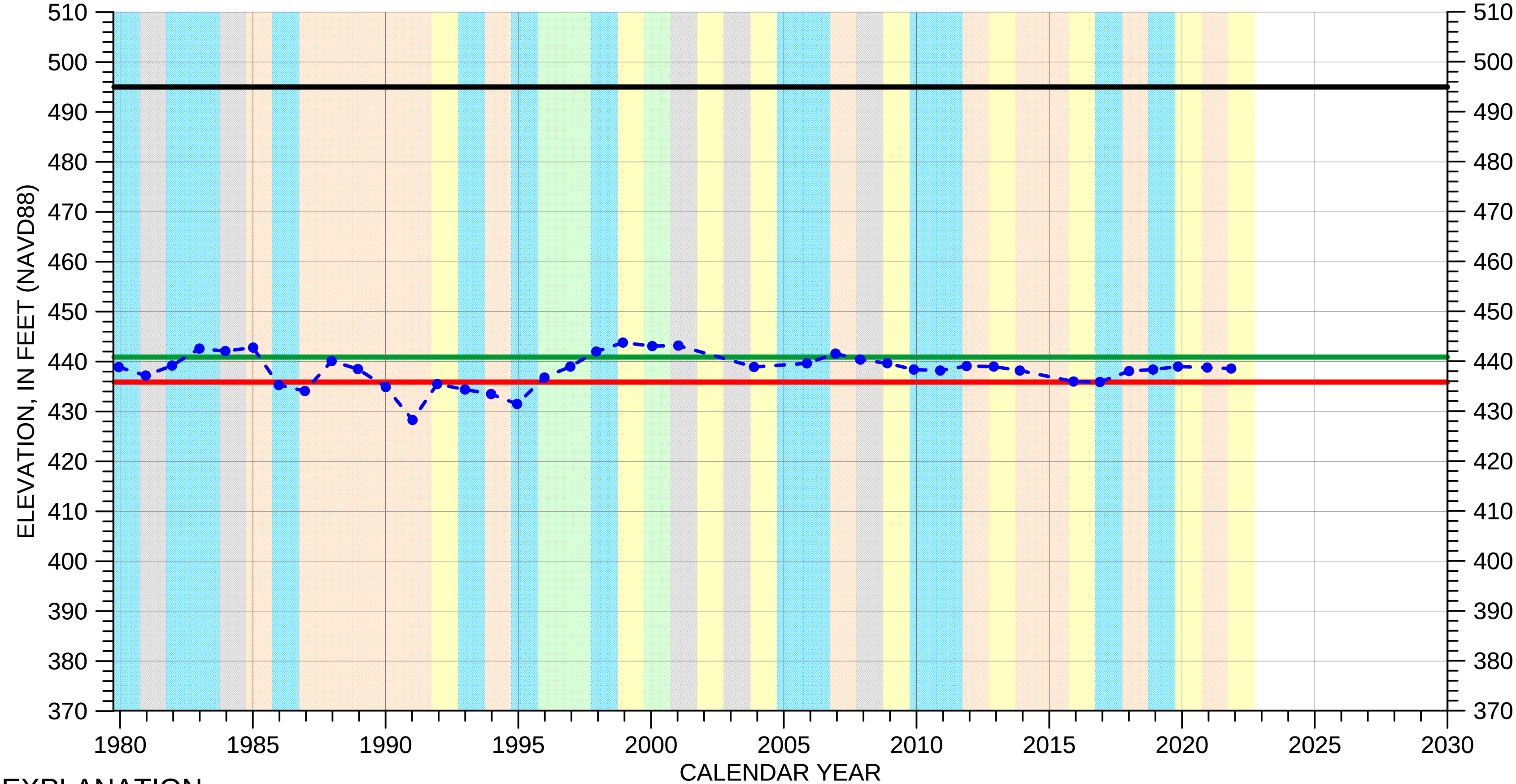
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-10Q01

Langley Area Subbasin

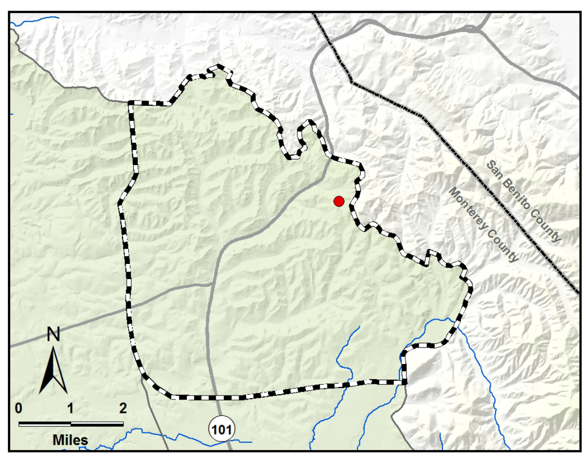


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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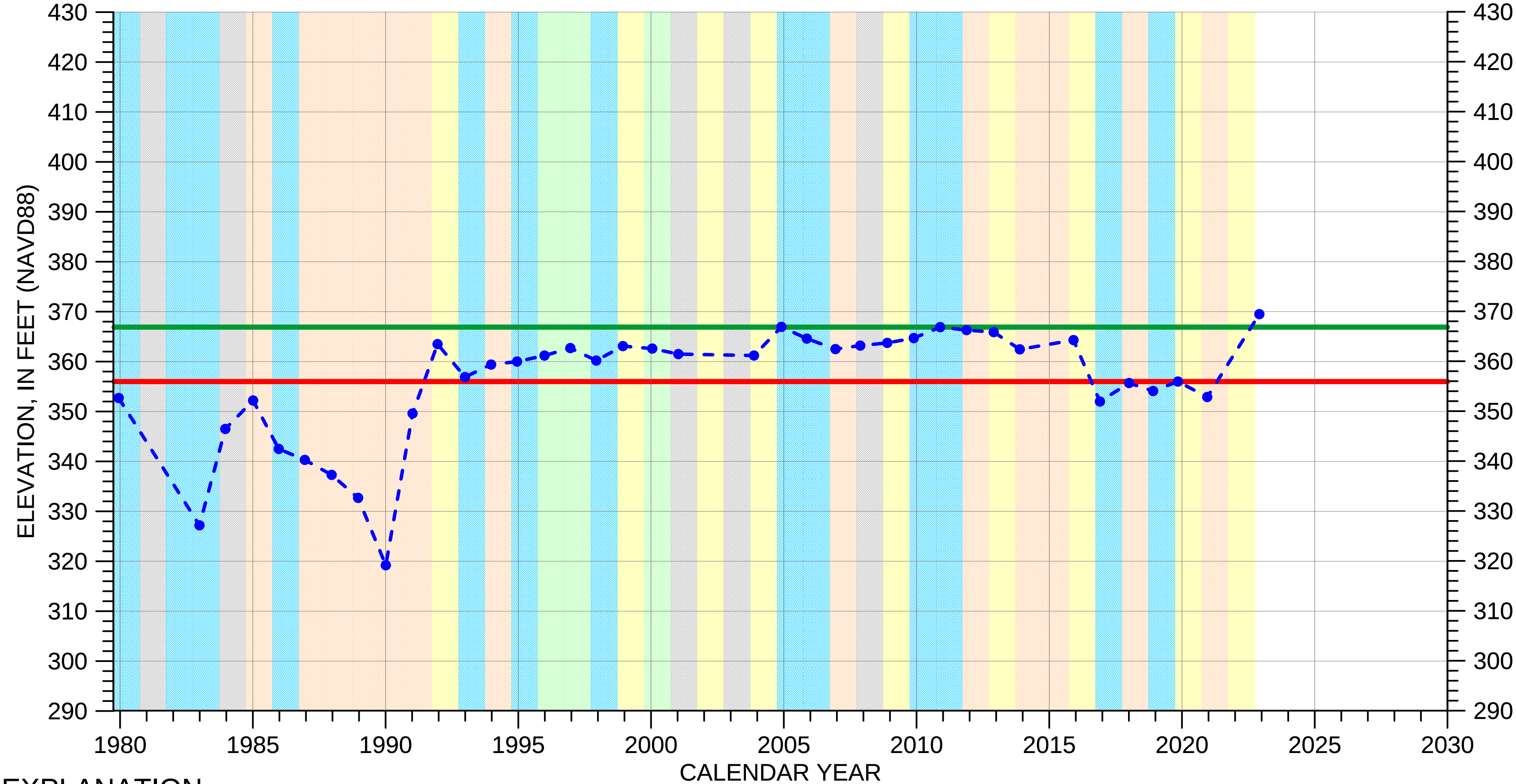
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-14M01

Langley Area Subbasin

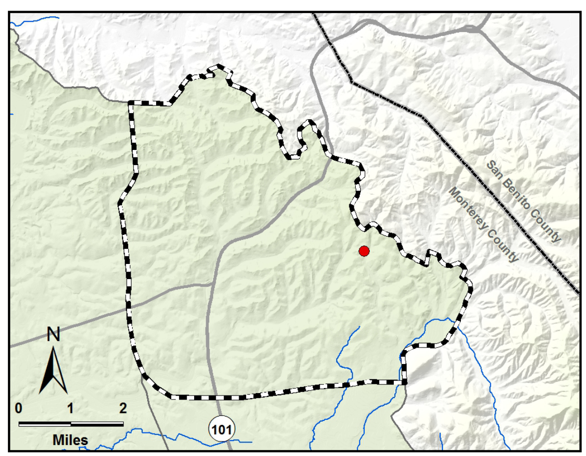


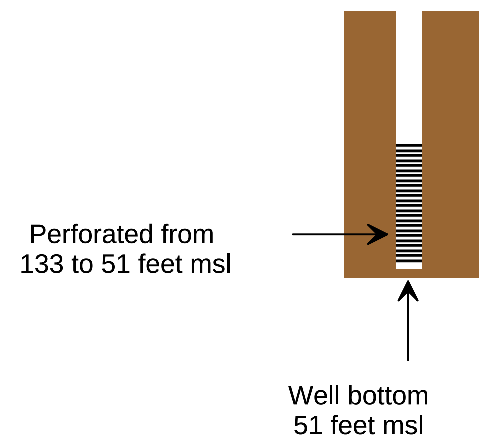
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (453 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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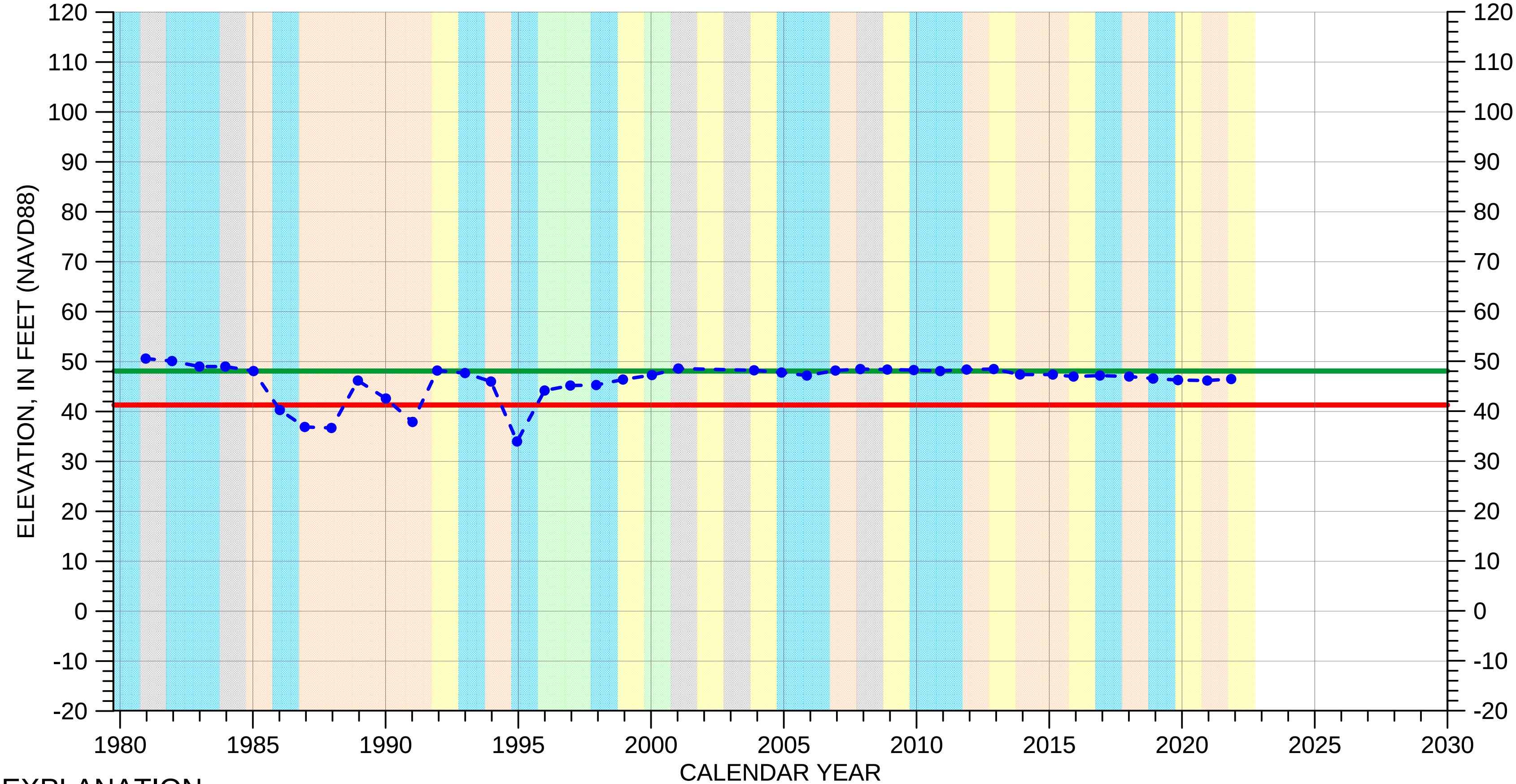
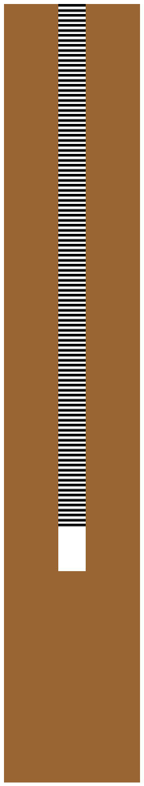
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-16J01

Langley Area Subbasin



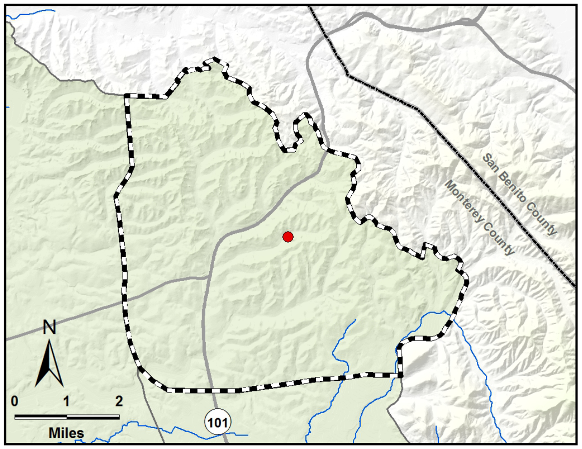


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (270 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Perforated from 166 to 26 feet msl

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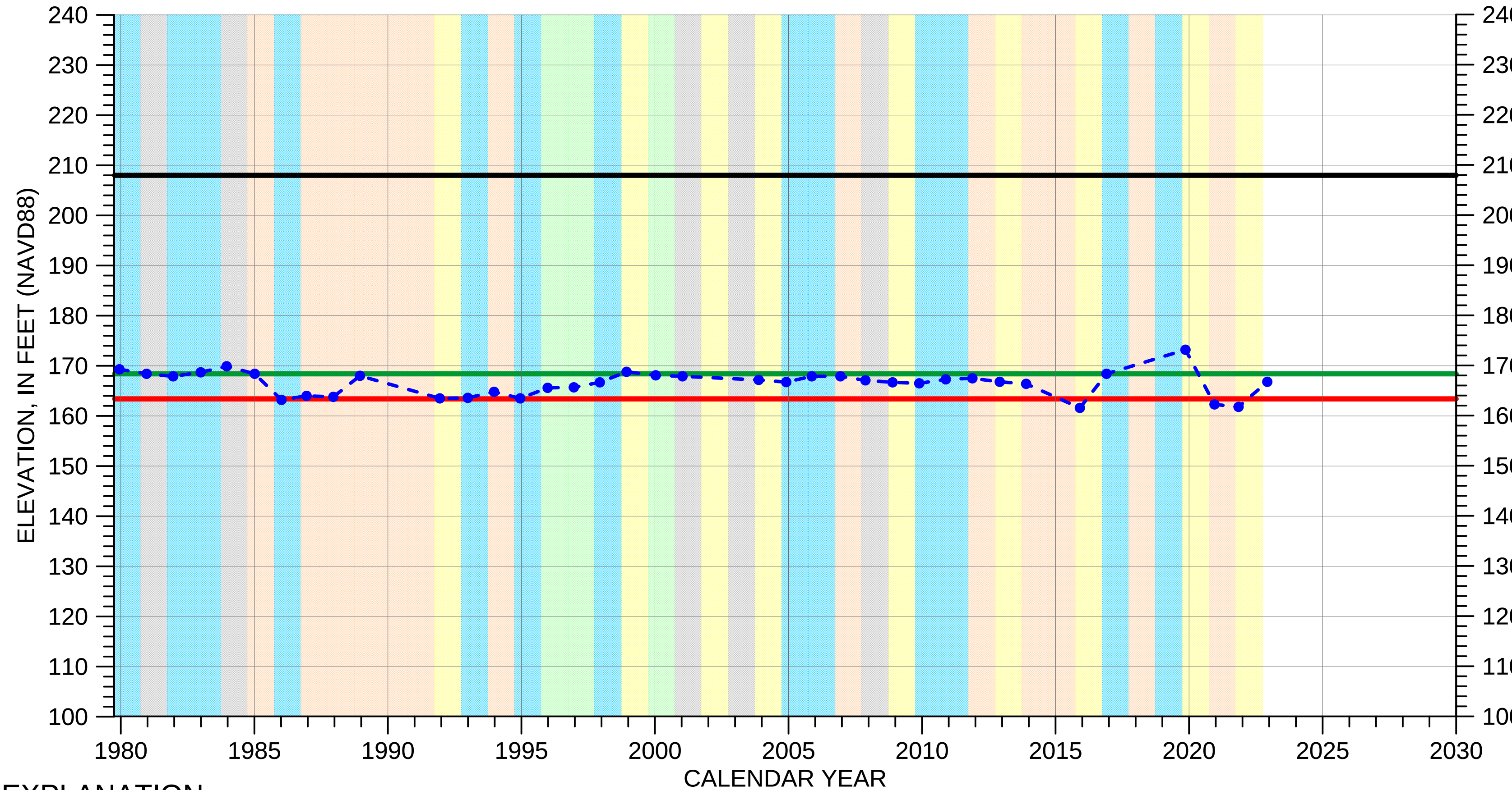
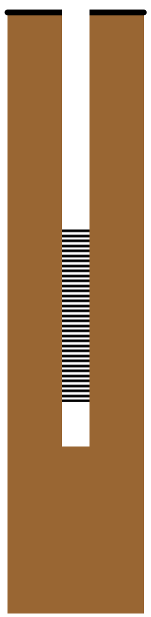
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-17B01

Langley Area Subbasin





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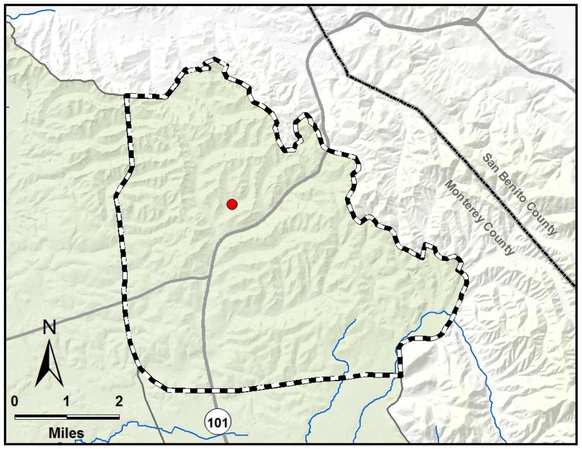
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

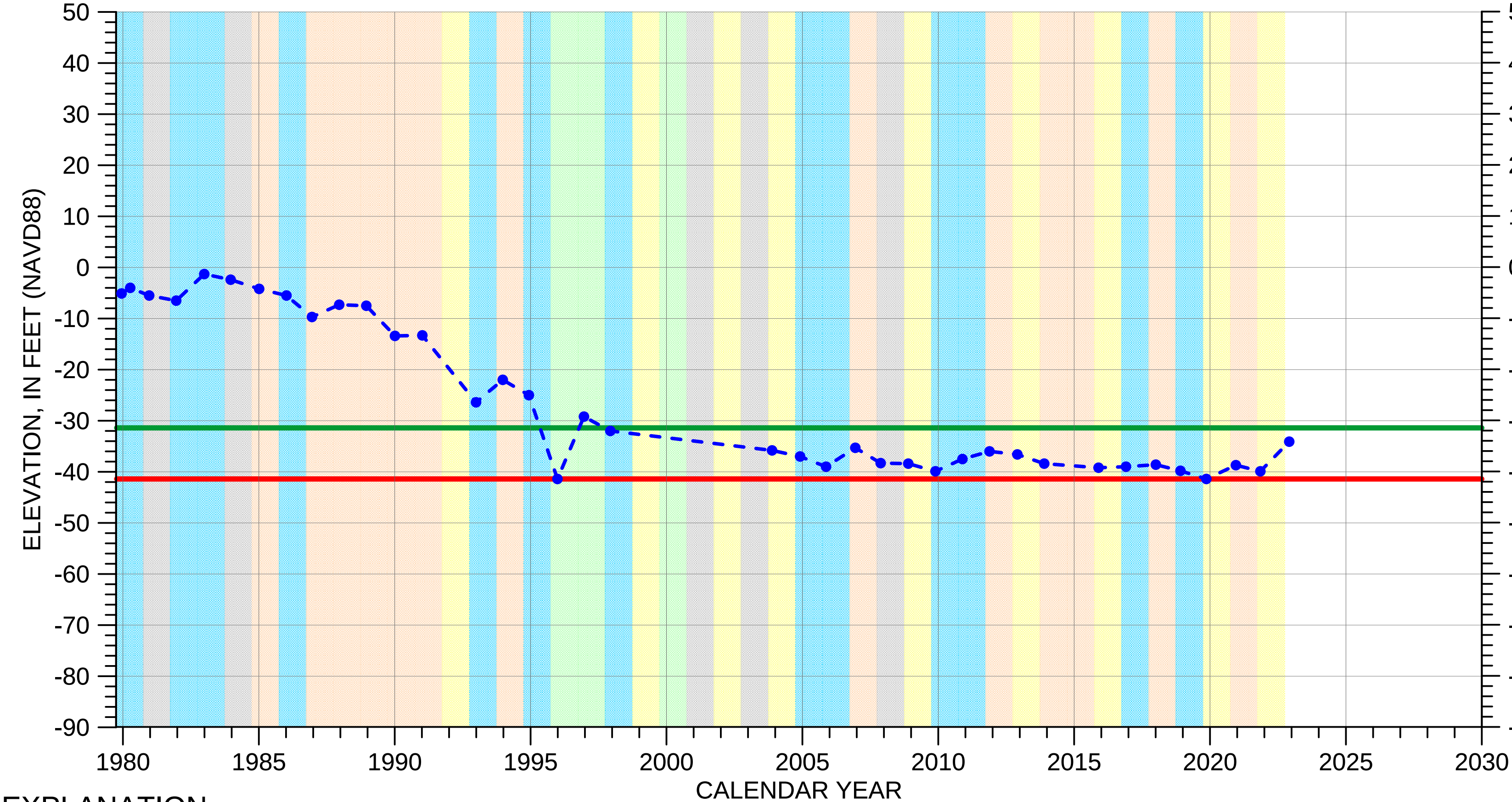
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-17F02

Langley Area Subbasin



Perforated from
-24 to -64 feet msl

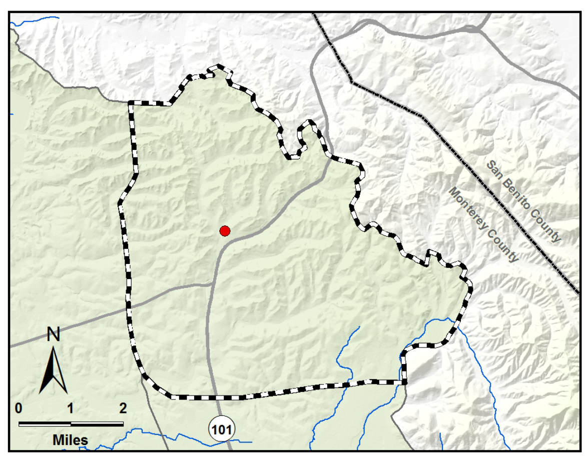
Well bottom
-172 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (221 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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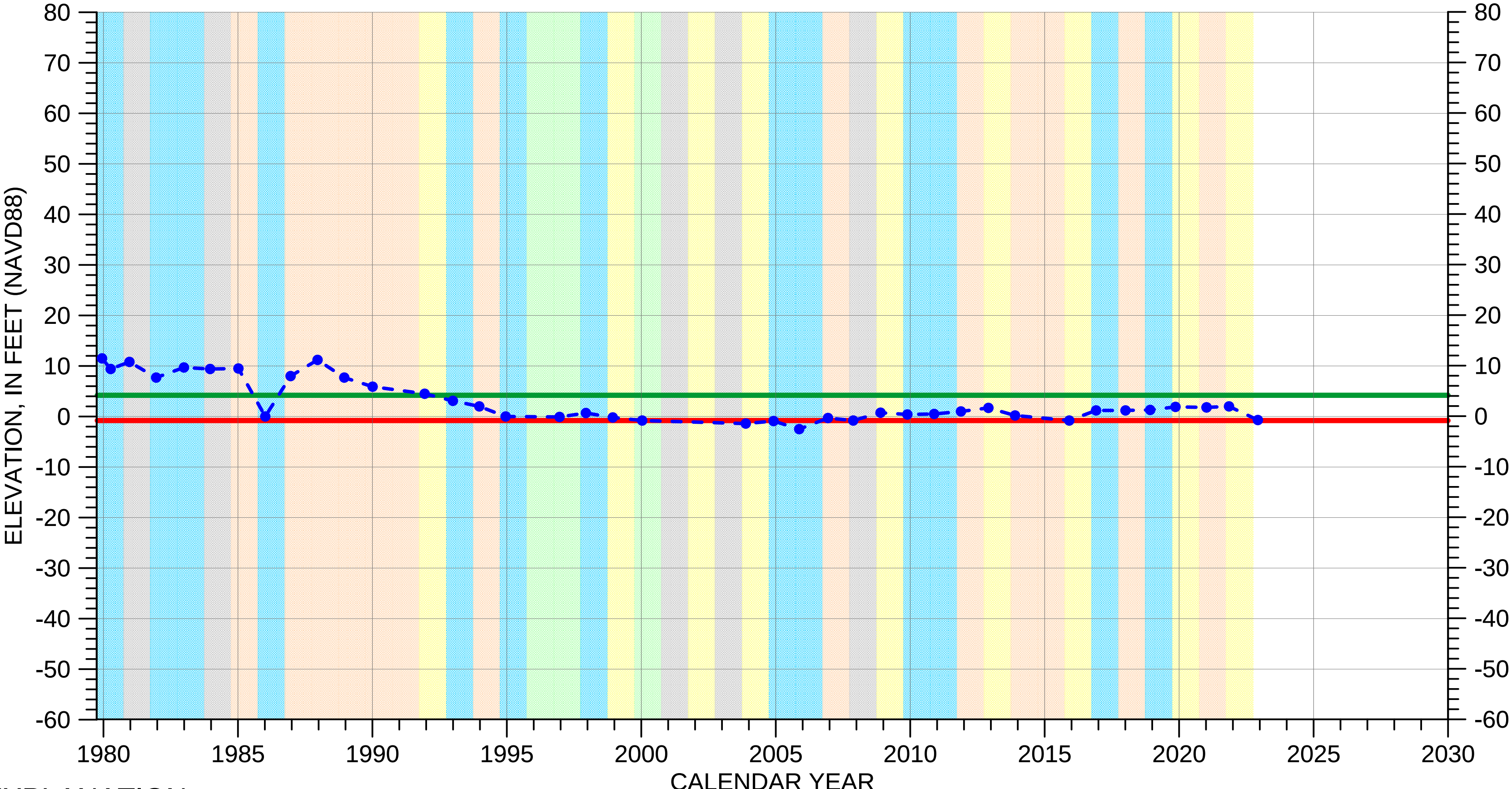
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-19H01

Langley Area Subbasin

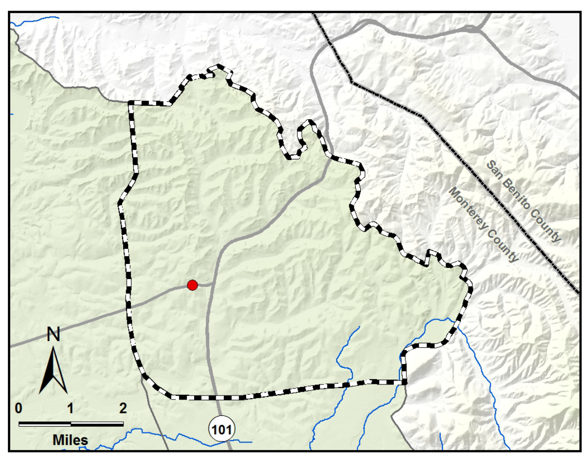


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (140 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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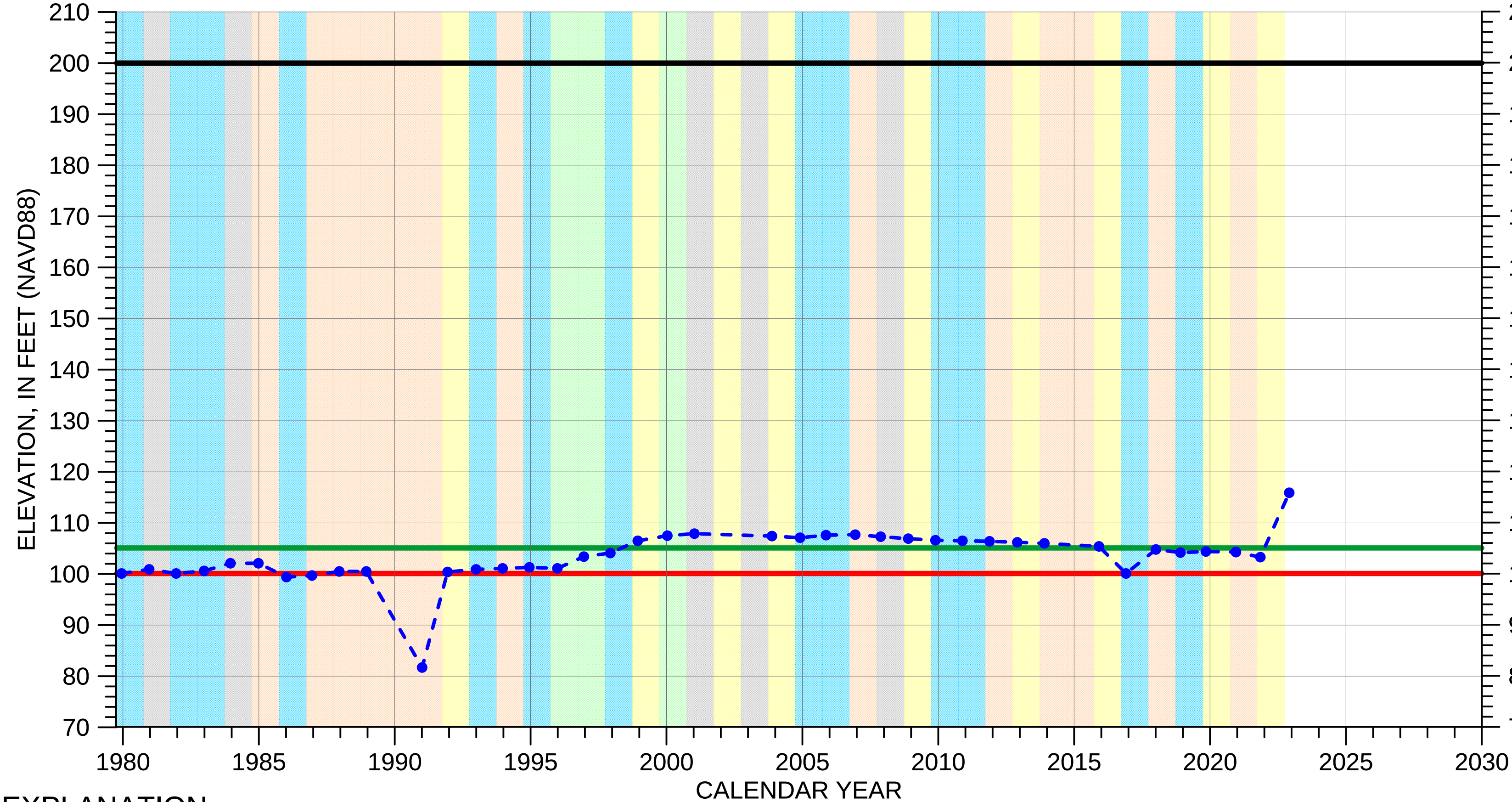
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-20B02

Langley Area Subbasin

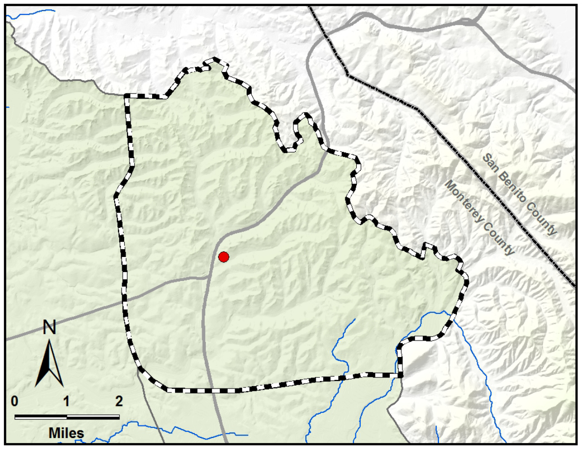


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Perforated interval unknown

Well bottom elevation unknown

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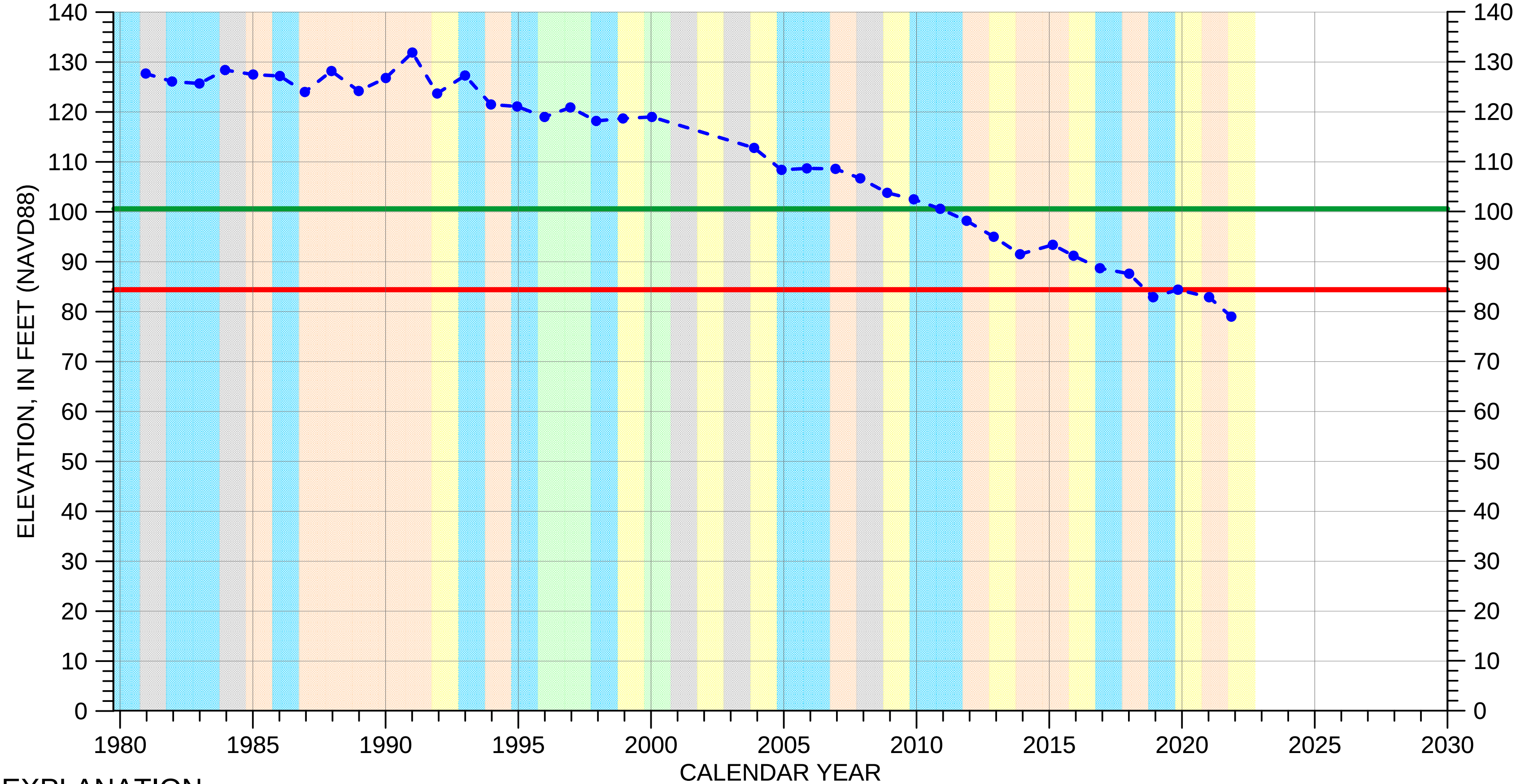
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-22F01

Langley Area Subbasin

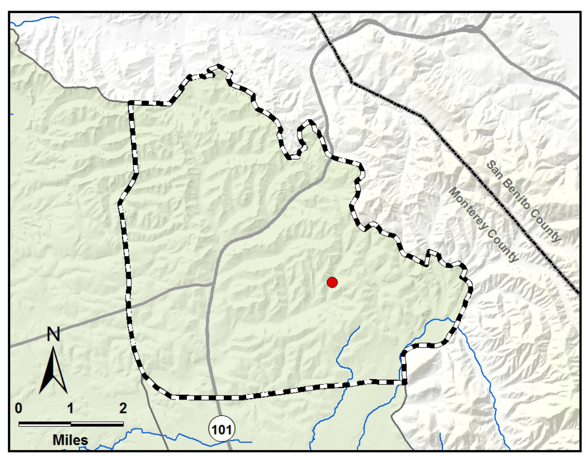


EXPLANATION

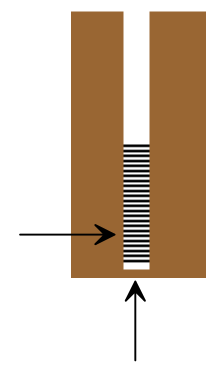
- Groundwater Elevation
- Suspect Measurement
- Land Surface (236 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Multiple perforated intervals from -24 to -84 feet msl

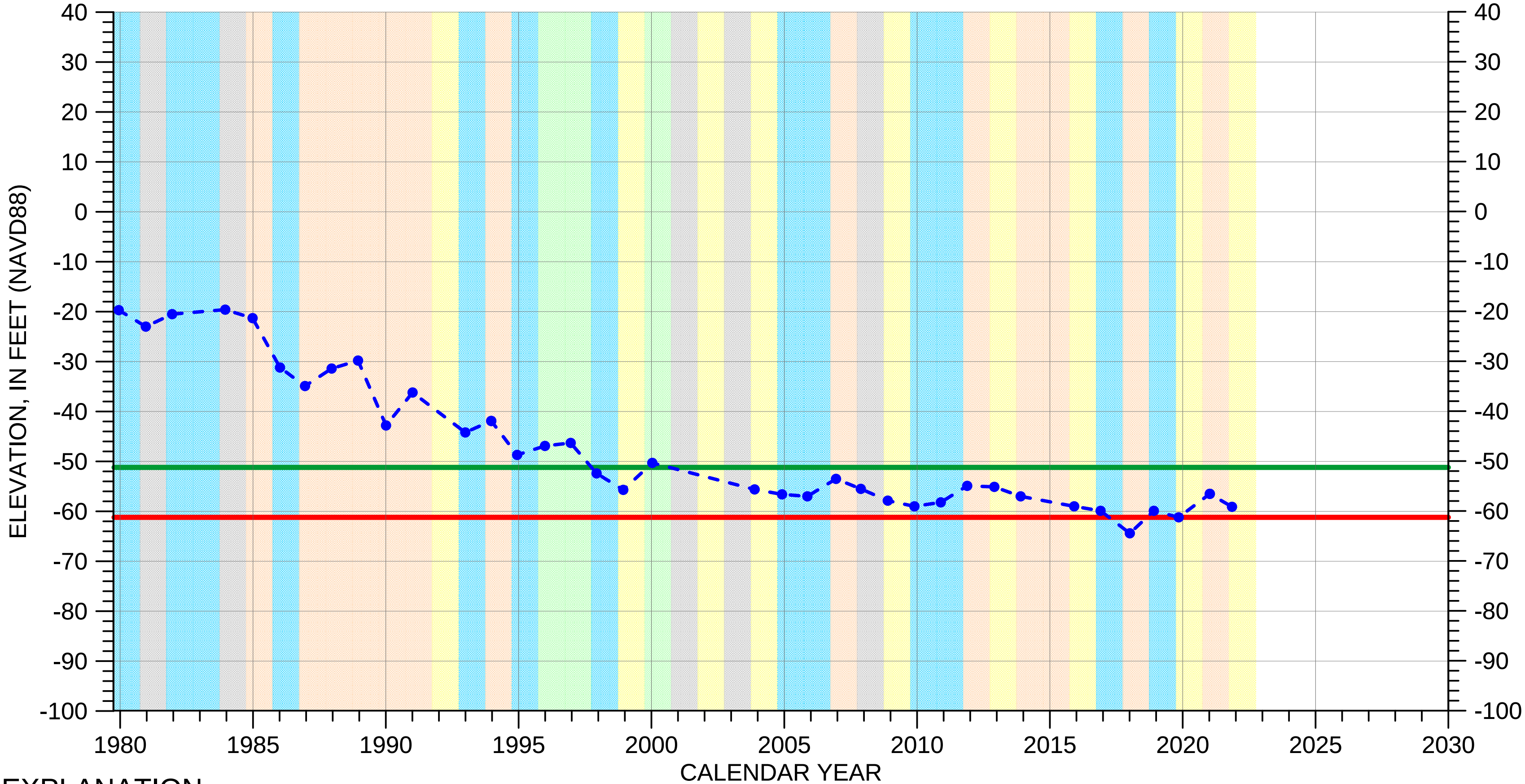


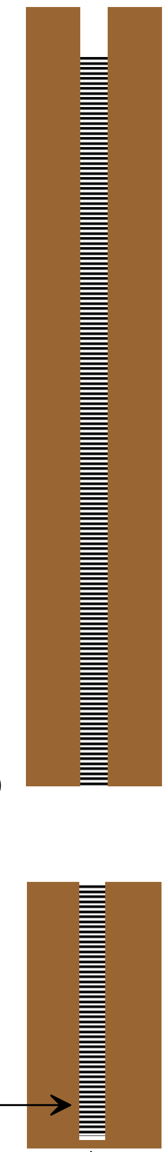
Well bottom -98 feet msl

C:\Users\tpontifex\Documents\Salinas Valley Basin GSA\Hydrographs\GRFs_test\13S_03E-22F01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-29A01

Langley Area Subbasin



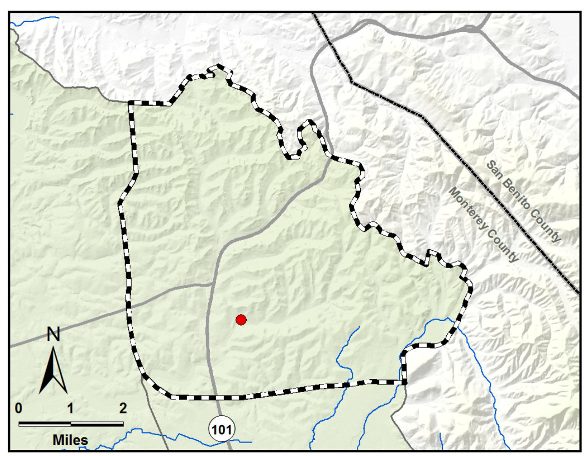


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (71 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



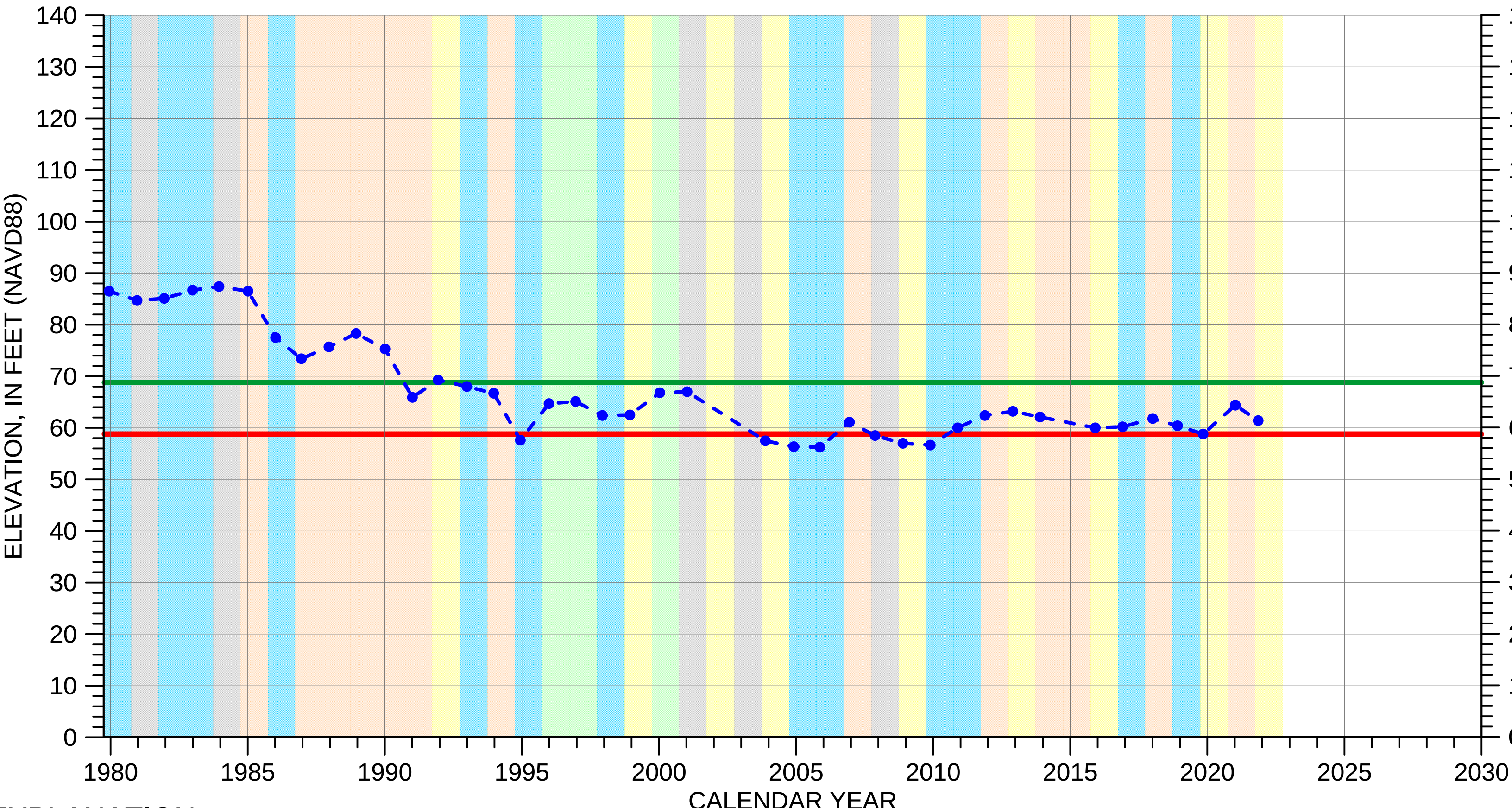
Perforated from
31 to -122 feet msl

Well bottom
-130 feet msl

C:\Users\tpontifex\Documents\Salinas Valley Basin GSA\Hydrographs\GRFs_test\13S_03E-29A01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-29K01

Langley Area Subbasin

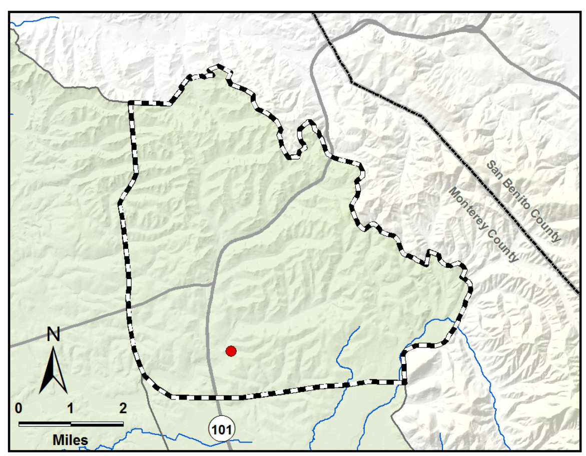


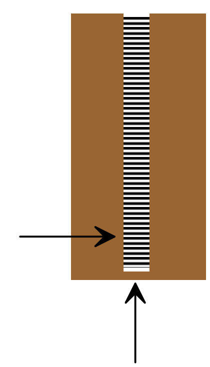
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (171 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





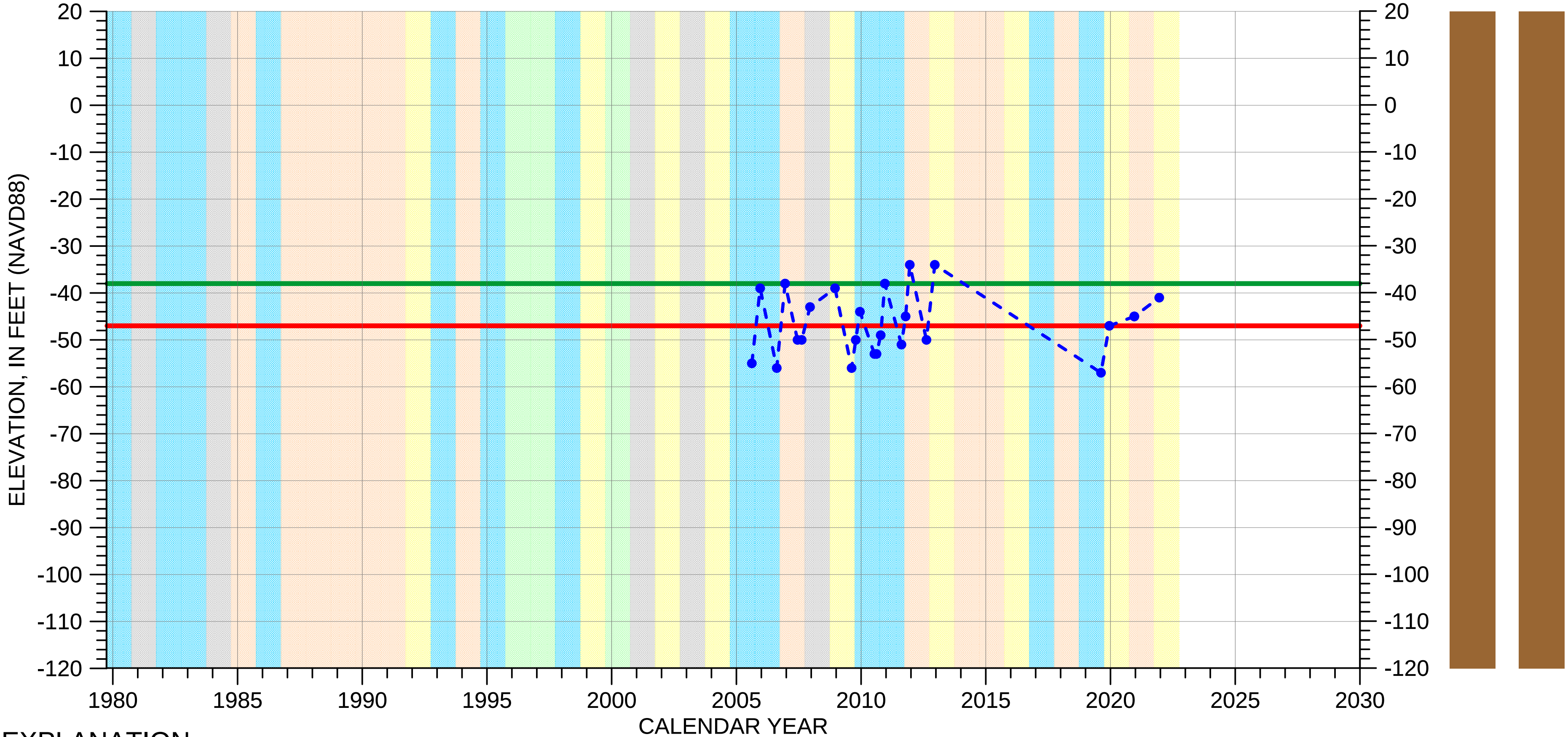
Perforated from
43 to -156 feet msl

Well bottom
-164 feet msl

C:\Users\tpontifex\Documents\Salinas Valley Basin GSA\Hydrographs\GRFs_test\13S_03E-29K01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-32H01

Langley Area Subbasin

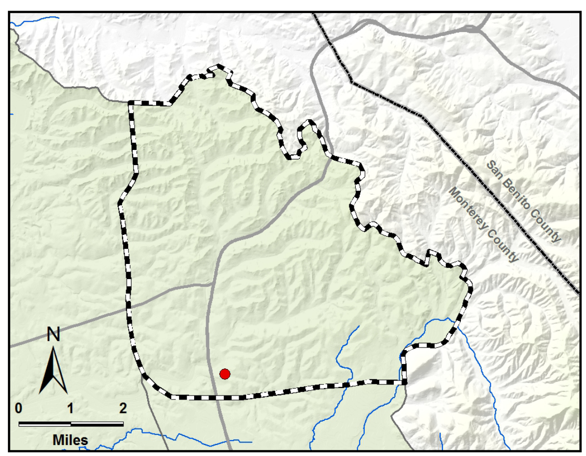


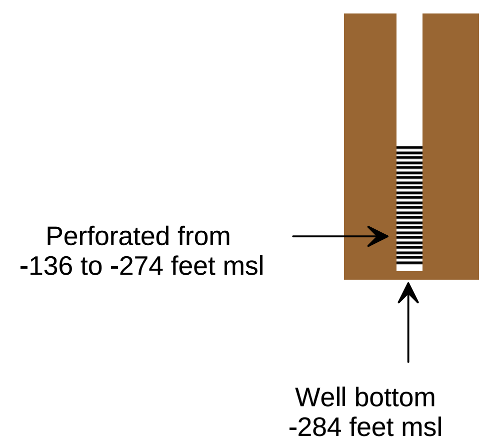
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (116 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

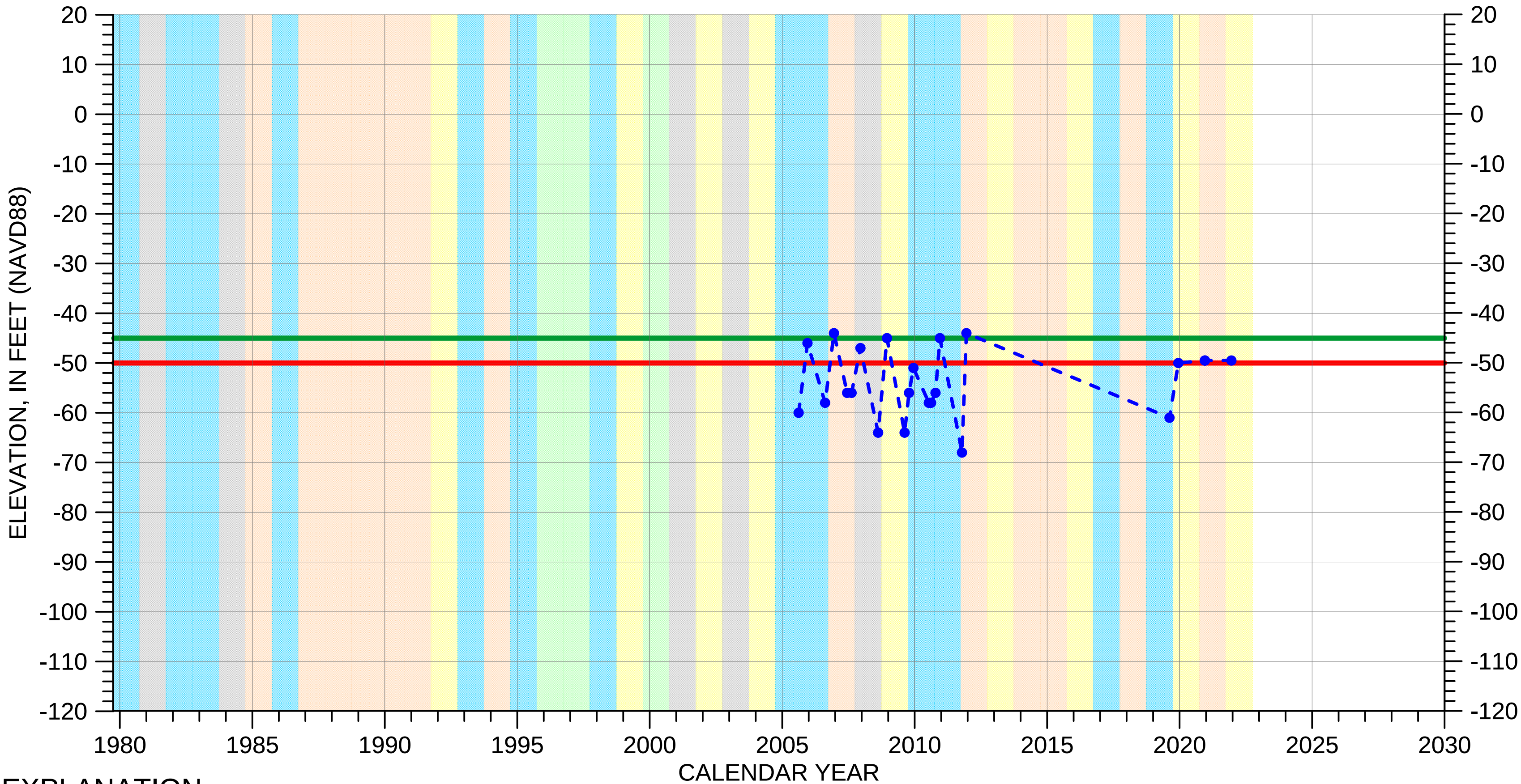




C:\Users\tpontifex\Documents\Salinas Valley Basin GSA\Hydrographs\GRFs_test\13S_03E-32H01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/03E-33T50

Langley Area Subbasin

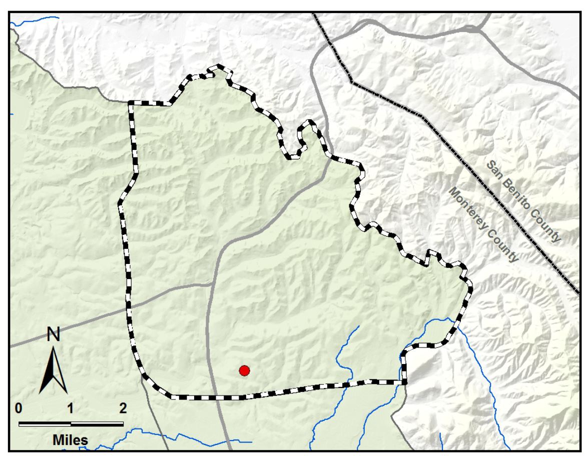


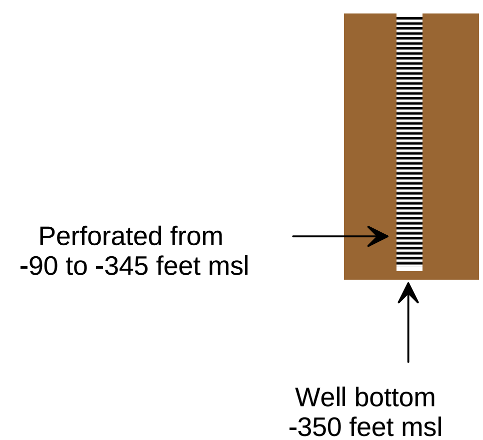
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (150 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





C:\Users\tpontifex\Documents\Salinas Valley Basin GSA\Hydrographs\GRFs_test\13S_03E-33T50.grf