Salinas Valley Groundwater Basin
Forebay Aquifer Subbasin
Water Year 2021 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
ASCMA ....Arroyo Seco Cone Management Area
ASGSA ....Arroyo Seco Groundwater Sustainability Agency
CBI....................Consensus Building Institute
CCRWQCB.......Central Coast Regional Water Quality Control Board
CCWC...............Clark Colony Water Company
CCWG...............Central Coast Wetlands Group
COC ....Constituent(s) of concern
DAC ....Disadvantaged Communities
DDW ....Division of Drinking Water
D-TAC ....Drought Operations Technical Advisory Committee
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 water
JPA....................Joint Powers Authority
MCL..................Maximum Contaminant Level
MCWRA...........Monterey County Water Resources Agency
mg/L..................milligram/Liter
MOU ....Memorandum of Understanding
SGMA...............Sustainable Groundwater Management Act
SMC ....Sustainable Management Criteria/Criterion
SMCL................Secondary Maximum Contaminant Level
Subbasin............Forebay Aquifer Subbasin
SVBGSA...........Salinas Valley Basin Groundwater Sustainability Agency
SVIHM..............Salinas Valley Integrated Hydrologic Model
SWRCB.............State Water Resources Control Board
WY ....Water Year

EXECUTIVE SUMMARY

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA), working together with the Arroyo Seco Groundwater Sustainability Agency (ASGSA), is required to submit an annual report for the Forebay Aquifer Subbasin (Subbasin) to the California Department of Water Resources (DWR) by April 1 of each year following the SVBGSA's 2022 adoption and submittal of its Groundwater Sustainability Plan (GSP or Plan). This report fulfills that requirement for the Salinas Valley – Forebay Aquifer Subbasin (Subbasin) for Water Year (WY) 2021. Because the Forebay GSP includes data up to 2019, this first annual report includes monitoring data for both WY 2020 and 2021, which is the period from October 1, 2019, to September 30, 2021.

As described in the GSP, DWR lists the Subbasin as a medium priority subbasin. The goal of the Forebay Subbasin GSP is to balance the needs of all water users in the Subbasin while complying with SGMA.

In WY 2021, groundwater conditions remained similar to conditions in recent years, with slight changes in conditions related to specific sustainability indicators. WY 2021 is classified as a dry year.

The groundwater data for WY 2021 are summarized below:

- Groundwater extractions for reporting year 2021 (November 1, 2020, through October 31, 2021) were approximately 150,400 acre-feet (AF). Groundwater extraction reporting is lagged by a year because it is not available until after the annual report submittal.
- Groundwater elevations decreased slightly during this dry water year, with all wells showing elevations above their minimum thresholds and 2 wells above their measurable objectives.
- There were 4 groundwater quality constituents of concern (COC) that exceeded their minimum thresholds in WY 2021, none of them due to GSA actions.
- No subsidence was detected in the Subbasin.
- SVBGSA established a monitoring network of shallow groundwater elevations for interconnected surface water. None of the monitoring wells exceeded their minimum thresholds, and 1 well surpassed the measurable objective.

The SVBGSA and ASGSA has taken numerous actions to implement the GSP. These include:

- **Coordination and engagement** – SVBGSA worked throughout the year with the Forebay Aquifer Subbasin Planning Committee and ASGSA to develop the Forebay Subbasin GSP, submitted to DWR in January 2022. SVBGSA and ASGSA met regularly through the Coordination Committee, and in April 2021 the agencies finalized and approved the Forebay Subbasin Groundwater Sustainability Plan Implementation Agreement between the SVBGSA and ASGSA. In addition, SVBGSA strengthened its relationship with Monterey County Water Resources Agency (MCWRA), contracted the Consensus-Building Institute (CBI) to develop a work program for meaningful engagement with underrepresented communities, and continued to regularly engage stakeholders through its Advisory Committee and Board of Directors.

- **Data and monitoring** – including selecting one data gap to request a monitoring well through DWR's Technical Support Services and participating in DWR's planning for an airborne electromagnetic (AEM) survey across the Salinas Valley.
- **Planning activities** – during WY 2021, SVBGSA continued to draft the Forebay Aquifer Subbasin GSP through working with the Forebay Aquifer Subbasin Planning Committee and in collaboration with ASGSA. SVBGSA reviewed DWR's recommended corrective action on the water quality undesirable result on the 180/400-Foot Aquifer Subbasin GSP, and addressed it in the Forebay Subbasin GSP.
- **Project implementation activities** – SVBGSA and MCWRA moved forward with actions to begin implementing the GSP, including:
    - Creating the Deep Aquifer Study Cooperative Funding Partnership and releasing the Request for Qualifications for the study.
    - Continuing to convene MCWRA's Drought Technical Advisory Committee (D-TAC).

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 – Forebay Aquifer Subbasin (Subbasin) for Water Year (WY) 2021.

The sustainability goal of the Forebay 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.

Because the Forebay GSP includes data up to 2019, this first annual report includes monitoring data for both WY 2020 and 2021, which is the period from October 1, 2019, to September 30, 2021. 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 2020 and 2021 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 Forebay Aquifer Subbasin Groundwater Sustainability Plan

The Forebay Subbasin falls partially within the jurisdiction of the Salinas Valley Groundwater Sustainability Agency (SVBGSA) and partially within the jurisdiction of the Arroyo Seco Groundwater Sustainability Agency (ASGSA). In accordance with the Forebay Implementation Agreement (2021), ASGSA manages the Arroyo Seco Cone Management Area (ASCMA) and SVBGSA manages the remaining area of the Subbasin as shown on Figure 1. Both implementation areas will be managed to a single GSP for the entire Forebay Subbasin.

In 2017, local GSA-eligible entities formed the SVBGSA to develop and implement the GSPs for the Salinas Valley. The SVBGSA is a Joint Powers Authority (JPA) 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.

The ASGSA was formed through agreement between the City of Greenfield and nearby landowners, consisting of the Clark Colony Water Company (CCWC) and contiguous surrounding lands.

The SVBGSA, in collaboration with ASGSA, developed the GSP for the Forebay Aquifer Subbasin, identified as California Department of Water Resources (DWR) subbasin 3-004.04. DWR has designated the Forebay Subbasin as a medium priority basin.

The SVBGSA developed the GSP for the Forebay 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 Upper Valley Aquifer Subbasin (DWR subbasin 3-004.05), the Langley Area Subbasin (DWR subbasin 3-004.09), and the Monterey Subbasin (DWR subbasin 3-004.10). This Annual Report covers all the 94,000 acres of the Forebay Subbasin, as shown on Figure 1.

1.3 Organization of This Report

This Annual Report corresponds to the requirements of GSP Regulations § 356.2. The Report 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 Report then addresses GSP implementation by reporting on actions taken to implement the Plan and progress toward interim milestones.

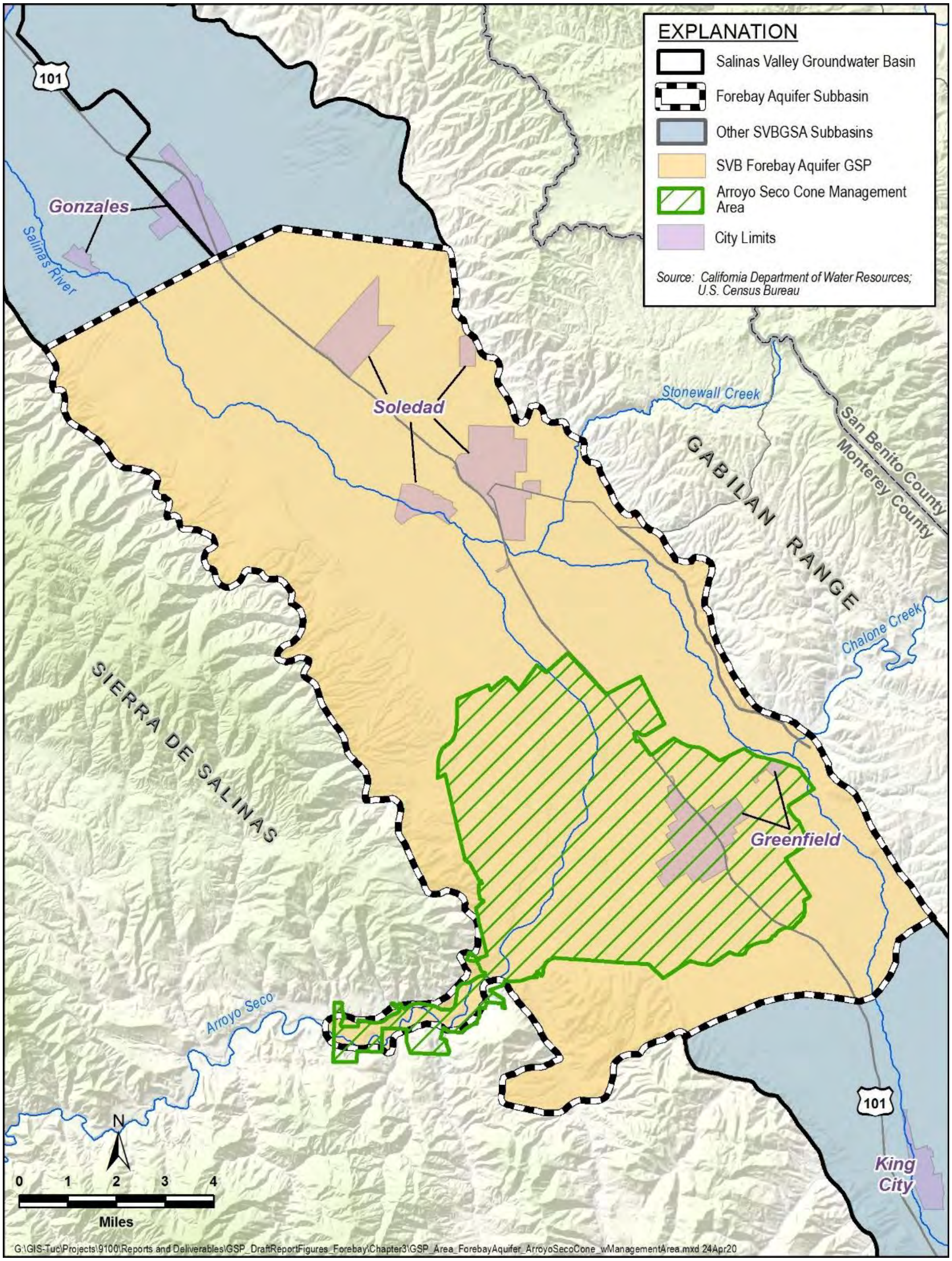

Figure 1. Forebay Aquifer Subbasin

2 SUBBASIN SETTING

The Forebay Aquifer Subbasin is located in the middle of Monterey County. The Salinas River runs through the Forebay Subbasin and its main tributary, the Arroyo Seco, joins it in the middle of the Subbasin. Historical flows in the Arroyo Seco formed a significant alluvial fan in the Subbasin, known as the Arroyo Seco Cone. The Subbasin contains portions of the municipalities of Greenfield and Soledad. The geology of the Forebay Subbasin is characterized by the intersection of the fluvial and marine dominated deposits of the main Salinas Valley and the Arroyo Seco alluvial fan originating in the Sierra de Salinas on the west side of the Subbasin. The eastern boundary of the Subbasin is the contact between the unconsolidated alluvial fan deposits and the mostly granitic rocks of the Gabilan Range. The western boundary of the Forebay Subbasin is the contact with the metamorphic and sedimentary rocks of the Sierra de Salinas. However, many reports indicate that groundwater recharge occurs through stream channels originating in the Gabilan Range. The northwestern boundary with the adjacent 180/400-Foot and Eastside Aquifer Subbasins generally coincides with the southeastern limit of confining conditions. The Salinas Valley Aquitard is not found in the Forebay Subbasin, but many of the sediments that define the 180/400-Foot Aquifers are generally found in the Subbasin. There is no reported hydraulic barrier between the Forebay and the 180/400-Foot or Eastside Aquifer Subbasins, but connection may be limited by the change from confined to unconfined conditions. The southeastern boundary with the adjacent Upper Valley Aquifer Subbasin is located south of Greenfield and generally coincides with the narrowing of the Valley floor and shallowing of the base of the groundwater basin (DWR, 2004).

2.1 Principal Aquifers and Aquitards

The Basin Fill Aquifer is the Forebay Subbasin's sole principal aquifer and it increases in thickness from the east to west, from Greenfield northward. Its sandy water-bearing layers roughly correlate and are hydraulically connected to the 180-Foot, 400-Foot, and Deep Aquifers in the neighboring 180/400-Foot Aquifer Subbasin (Kennedy/Jenks, 2004), and the Shallow and Deep aquifer zones in the neighboring Eastside Aquifer Subbasin. The deepest sediments of the Basin Fill Aquifer are the same sediments as, and potentially hydraulically connected to, the Deep Aquifers in the 180/400-Foot Aquifer Subbasin. The Basin Fill Aquifer also includes the Arroyo Seco Cone sediments that cross almost the entire width of the Salinas Valley in the Forebay Subbasin and are interfingered with the greater Basin sediments. The primary water-bearing sediments of the Arroyo Seco Cone consist of relatively uniform and highly permeable coarse alluvial fill that are generally more coarse-grained than those found in the main valley's fluvial and marine deposits.

2.2 Natural Groundwater Recharge and Discharge

Groundwater can discharge from aquifers where surface water and groundwater are interconnected and gaining streamflow conditions occur. There are potential locations of interconnected surface water mainly along the Salinas River and partially along the Arroyo Seco. 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 9.18 inches of rainfall in WY 2020 and 5.79 inches in WY 2021. For comparison, the average rainfall from WY 1980 to WY 2021 at this gage is 11.98 inches of precipitation.

SVBGSA adopts 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 2020 was a dry-normal year and WY 2021 was a dry year.

3 2021 DATA AND SUBBASIN CONDITIONS

This section details the Subbasin conditions and WY 2021 data. Where WY 2021 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.

The Forebay Subbasin includes the ASCMA that is managed by ASGSA. As in the chapter on Groundwater Conditions in the GSP (Chapter 5), groundwater conditions here do not separate ASCMA from the greater Forebay Subbasin. Instead, groundwater conditions are discussed for the entire Subbasin to reflect the single sustainability goal for the Subbasin.

3.1 Water Supply and Use

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

The water supply in the Forebay Subbasin is a combination of groundwater and surface water. Groundwater is the main water source in the Subbasin. The Salinas River and its tributaries, like the Arroyo Seco, provide surface water for use directly through diversions and indirectly through recharge to groundwater. Surface water is also diverted from the Arroyo Seco for CCWC. No recycled water is used in the Subbasin.

3.1.1 Groundwater Extraction

Urban and agricultural groundwater extractions are 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.

Table 1 presents groundwater extractions by water use sector, including the method of measurement and accuracy of measurement in the Forebay Subbasin. Urban use data from MCWRA aggregates municipal wells, small public water systems, and industrial wells. Agricultural use accounted for 95% of groundwater extraction in 2021; urban and industrial use accounted for 5%. It is important to note that the reporting year varies according to user: agricultural pumping is reported to MCWRA for the period November 1 through October 31, whereas urban pumping is reported to MCWRA 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 2021 was 150,400 acre-feet per year (AF/yr.) in the Subbasin. This total is for the Forebay Subbasin not the MCWRA Forebay Subarea; therefore, the pumping total is not identical to what MCWRA publishes in their annual Groundwater Extraction Summary

Reports. Figure 2 illustrates the general location and volume of groundwater extractions in the Subbasin.

Table 1. 2021 Groundwater Extraction by Water Use Sector (AF/yr.)

Water Use Sector	Groundwater Extraction	Method of Measurement	Accuracy of Measurement
Urban	7,600	MCWRA's Groundwater Reporting Program allows 3 different reporting methods: water flowmeter, electrical meter, or hour meter. For 2021, 84% of extractions were calculated using a flowmeter, 16% electrical meter and <1%-hour meter.	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%.
Agricultural	142,800		
Managed Wetlands	0	N/A	N/A
Managed Recharge	0	N/A	N/A
Natural Vegetation	0	*De minimis* and not estimated.	Unknown
Total	**150,400**		

Note: Agricultural pumping is reported on a 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.

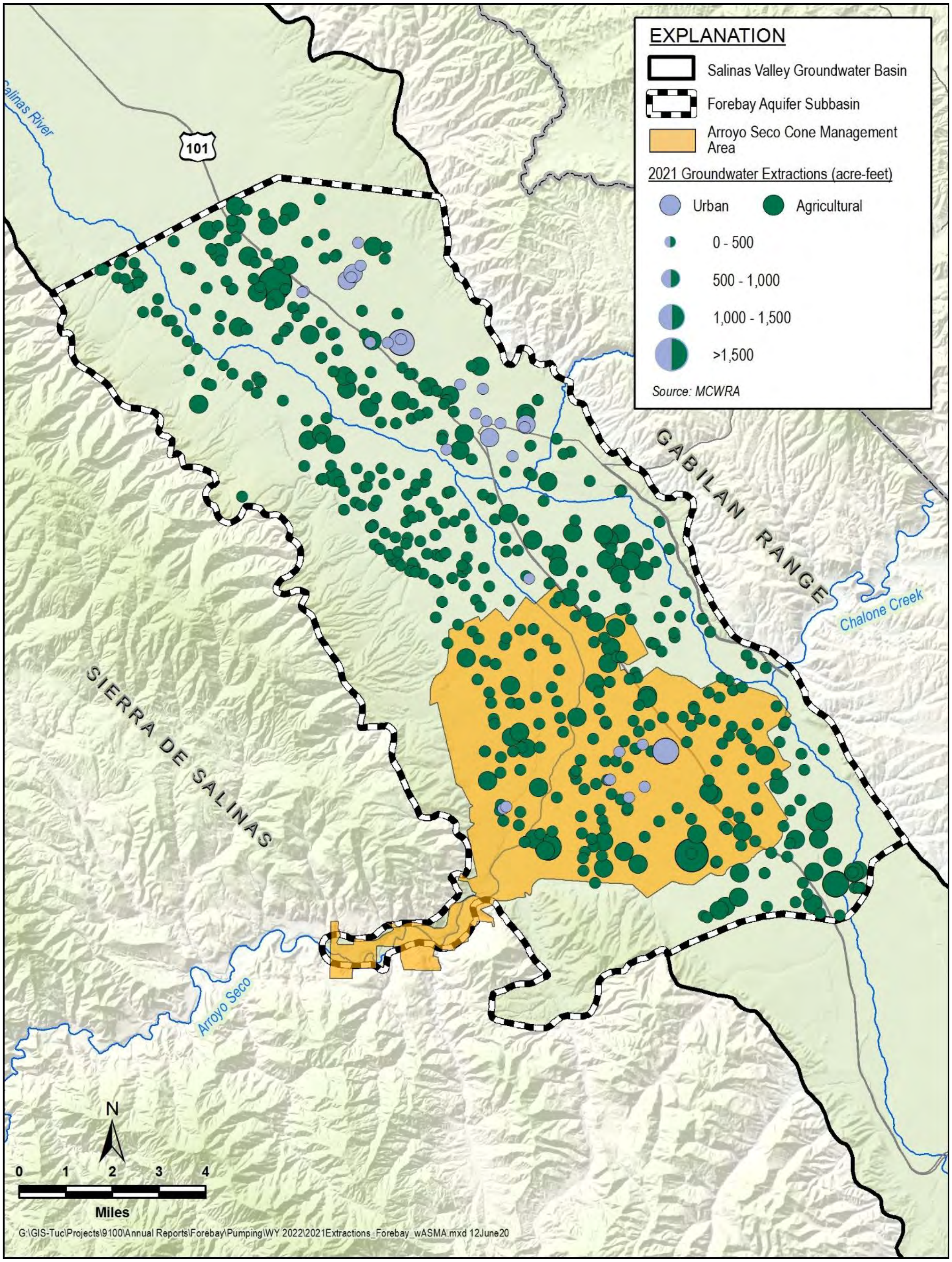

Figure 2. General Location and Volume of Groundwater Extractions

3.1.2 Surface Water Supply

Salinas River diversion data are obtained from the State Water Resources Control Board (SWRCB) Electronic Water Rights Information Management System (eWRIMS) website. These data are reported annually and include diversions from the Salinas River and the Arroyo Seco River. Surface water diversions reported in eWRIMS were approximately 16,400 AF/yr in WY 2021. Of these diversions, CCWC diverted approximately 1,500 AF/yr. All diverted surface water is used for irrigation and is reported as a Statement of Diversion and Use.

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 SWRCB as surface water diversions and to MCWRA as groundwater pumping. To avoid double counting, all surface water diversions reported as a Statement of Diversion and Use—except CCWC's—is excluded from the total water use count for the Subbasin. Therefore, total surface water use for the Subbasin is adjusted from the 16,400 AF/yr reported in eWRIMS to 1,500 AF/yr. It is possible that not all of the 14,900 AF/yr surface water diversions excluded are being reported to both SWRCB and MCWRA, in which case total water use may be up to that amount greater than calculated here. 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. SVBGSA will continue to work with stakeholders to refine the methodology used to resolve double counting.

Total water use was approximately 151,900 AF/yr in WY 2021, as shown on Table 2.

Table 2. Total Water Use by Water Use Sector in WY 2021 (AF)

Water Use Sector	Groundwater Extraction	Surface Water Use	Recycled Water	Method of Measurement	Accuracy of Measurement
Urban	7,600	0	0	Direct	Estimated to be +/- 5%.
Agricultural	142,800	1,500	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	150,400	1,500	0		
TOTAL	**151,900**				

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 current groundwater elevation monitoring network in the Forebay Subbasin contains 39 wells. All 39 wells are representative monitoring sites and monitored by MCWRA. Locations of groundwater elevation representative monitoring network wells within the Subbasin are shown on Figure 3.

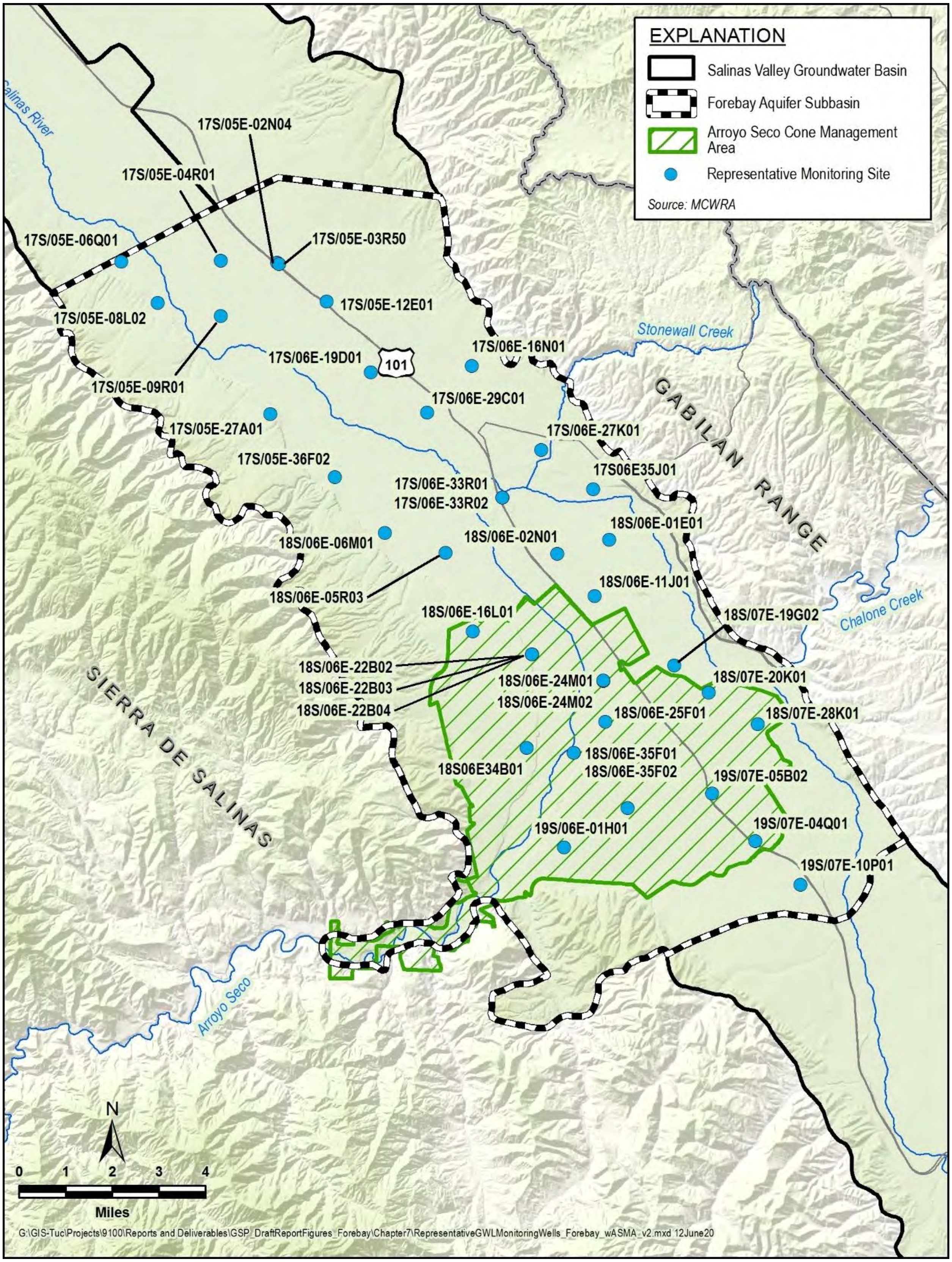

Figure 3. Locations of Representative Groundwater Elevation Monitoring Sites

Fall 2021 groundwater elevation data are presented in Table 3. The fall 2020 groundwater elevations are also included in Table 3. to provide all data since GSP submittal. In accordance with the GSP, this report uses groundwater elevations measured in the fall in order to approximate neutral groundwater conditions that are not heavily influenced by either summer irrigation pumping or winter rainfall recharge. These 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. These fall contours are further discussed in Section 3.2.1.

Table 3. Groundwater Elevation Data

Monitoring Site	WY 2020 elevation data (ft)	WY 2021 elevation data (ft)
17S/05E-02N04	105.2	103.1
17S/05E-03R50	105.3	104.1
17S/05E-04R01	100.5	97.1
17S/05E-06Q01	95.3	91.4
17S/05E-08L02	110.5	106.9
17S/05E-09R01	110.7	108.0
17S/05E-12E01	104.6	104.6
17S/05E-27A01	134.4	131.2
17S/05E-36F02	136.4	135.2
17S/06E-16N01	88.8	105.2
17S/06E-19D01	134.8	133.2
17S/06E-27K01	156.1	155.1
17S/06E-29C01	146.4	141.1
17S/06E-33R01	161.3	161.3
17S/06E-33R02	161.1	157.9
17S/06E-35J01	173.6	170.0
18S/06E-01E01	169.6	172.9
18S/06E-02N01	163.2	160.0
18S/06E-05R03	153.6	148.7
18S/06E-06M01	161.5	161.2
18S/06E-11J01	177.3	172.3
18S/07E-19G02	173.9	168.8
19S/07E-10P01	223.3	225.0
Arroyo Seco Cone Management Area		
18S/06E-16L01	165.6	159.4
18S/06E-22B02	170.6	168.2
18S/06E-22B03	177.7	173.5
18S/06E-22B04	177.2	171.8
18S/06E-24M01	181.8	180.0
18S/06E-24M02	182.5	181.5
18S/06E-25F01	188.8	183.8
18S/06E-34B01	190.1	186.5

Monitoring Site	WY 2020 elevation data (ft)	WY 2021 elevation data (ft)
18S/06E-35F01	189.2*	189.2*
18S/06E-35F02	187.7	187.7
18S/07E-20K01	183.4	180.9
18S/07E-28K01	202.7*	202.7*
19S/06E-01H01	202.9	199.9
19S/06E-11C01	199.9	190.5
19S/07E-04Q01	219.9	219.5
19S/07E-05B02	209.2	205.1

*Groundwater elevation was estimated.

During GSP implementation, SVBGSA is working to fill a data gap with an additional well to include in the monitoring network.

3.2.1 Groundwater Elevation Contours

SVBGSA received groundwater elevation contour maps from MCWRA for the Forebay Subbasin for fall 2021 and developed new contour maps for August 2021. The August contours represent seasonal low conditions and the fall contours represent seasonal high conditions. 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 monitors groundwater elevations in the fall. Groundwater elevation contours for seasonal high and low groundwater conditions in the Forebay Subbasin are shown on Figure 4 and Figure 5, respectively. The contours indicate that groundwater flow directions are similar in the Forebay Subbasin during both seasonal low and seasonal high conditions, with groundwater elevations declining from the southeast to the northwest.

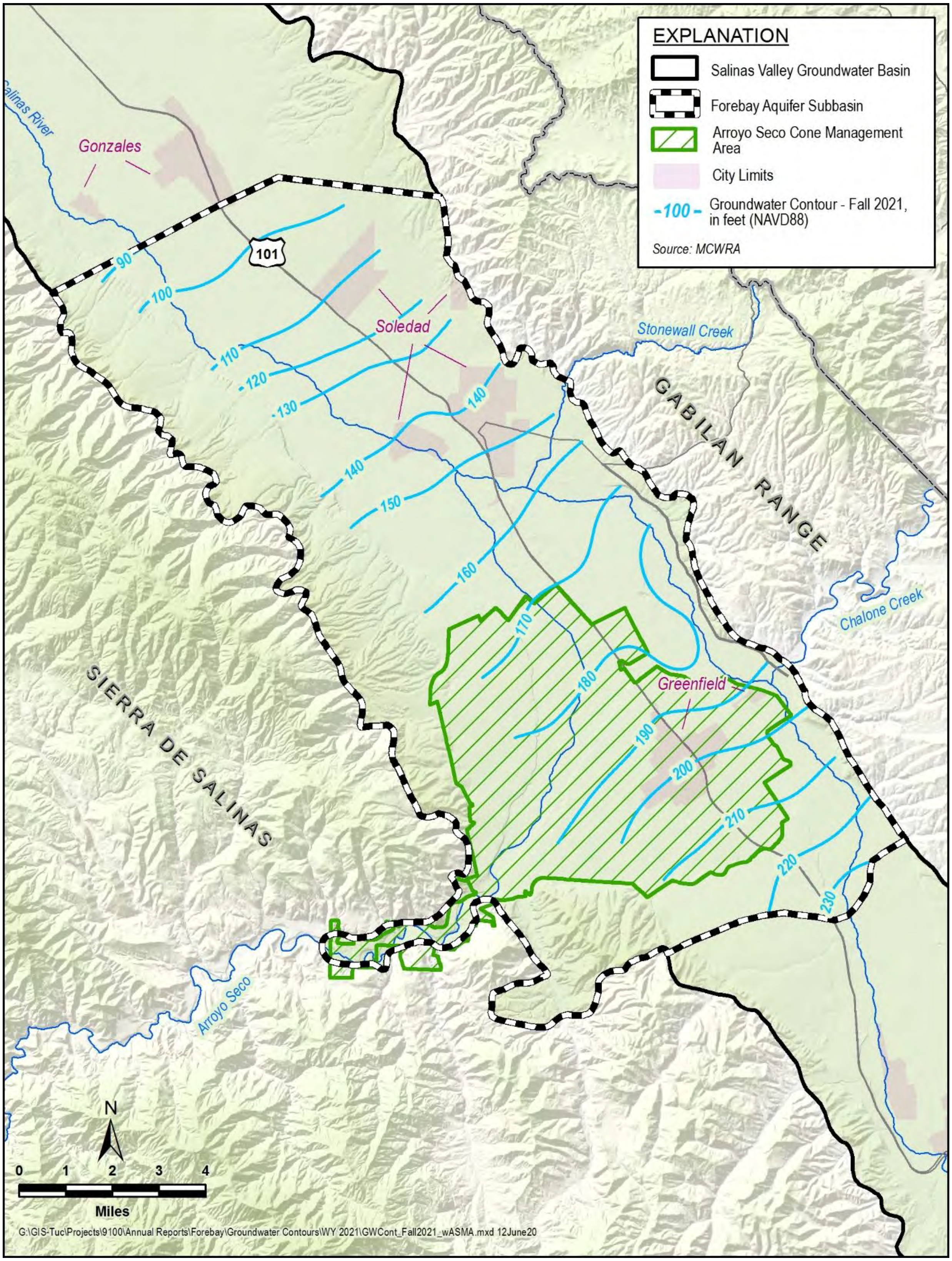

Figure 4. Seasonal High Groundwater Elevation Contour Map for the Forebay Aquifer Subbasin

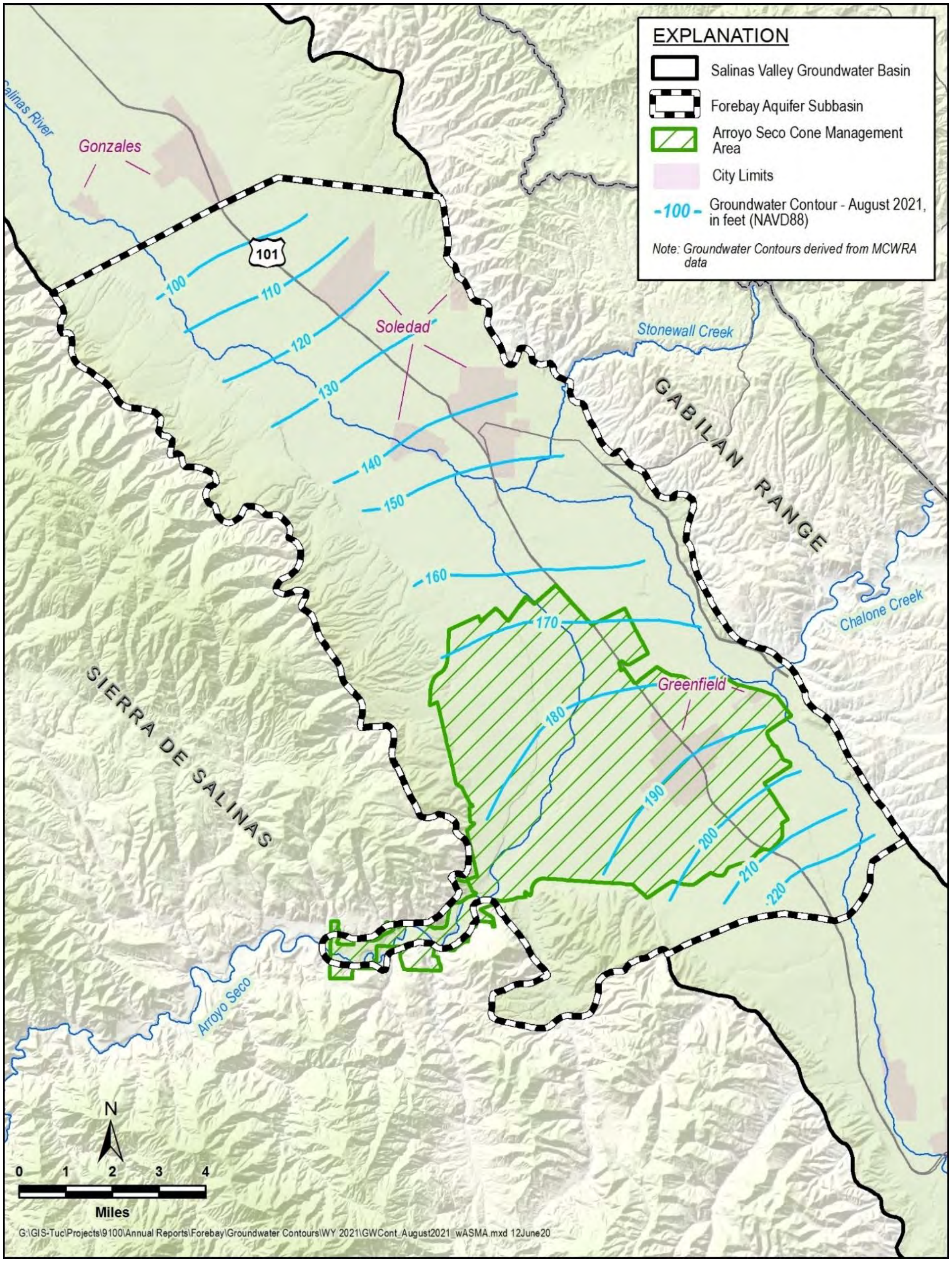

Figure 5. Seasonal Low Groundwater Elevation Contour Map for the Forebay Aquifer Subbasin

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 Basin Fill Aquifer of the Forebay 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 Basin Fill Aquifer have generally remained stable throughout the Subbasin, dropping during periods of drought but later rebounding again. Hydrographs for all representative monitoring sites are included in Appendix A.

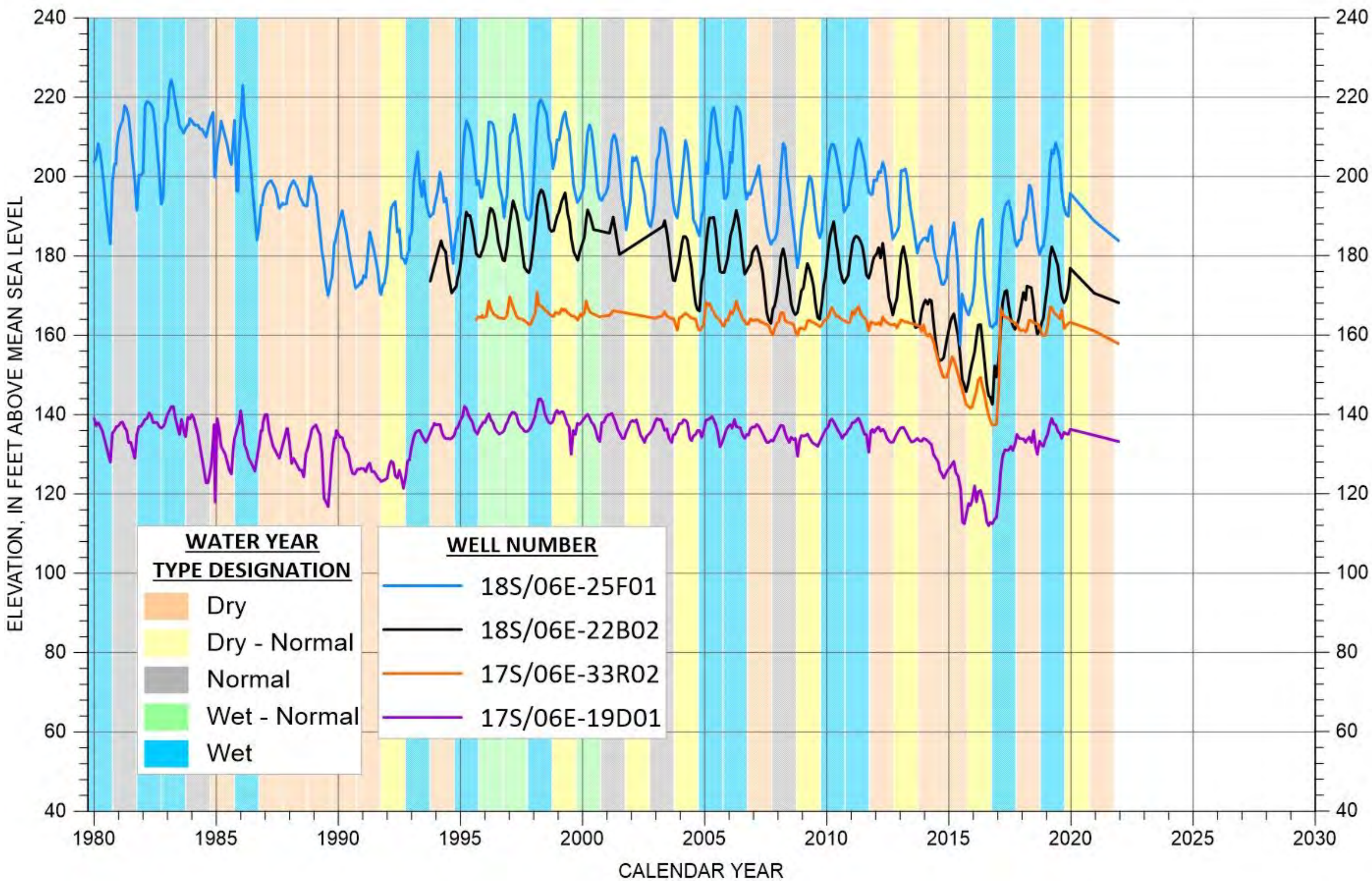

Figure 6. Groundwater Elevation Hydrographs for Selected Monitoring Wells

3.3 Change in Groundwater Storage

The Forebay 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 Forebay GSP includes data up to 2019, the change in storage calculation for the 2 years after the data presented in the GSP was calculated using groundwater elevation contours produced by SVBGSA using data from MCWRA for fall 2019 and fall 2021. MCWRA uses groundwater elevations from November to December to produce their contours. 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 Forebay Aquifer Subbasin from WY 2019 to WY 2021 was estimated by subtracting the fall 2019 groundwater elevations shown on Figure 7 from the fall 2021 groundwater elevations (Figure 4). This change was then multiplied by the storage coefficient for the Forebay Aquifer. MCWRA's *State of the Basin Report* approximates the storage coefficient to 0.12 for the Forebay Subarea (Brown and Caldwell, 2015). The resulting change in storage represents change over the 2-year period; this value is divided by 2 for the average annual change. The estimated change in storage due to groundwater elevation changes, in AF per acre, in the Forebay Subbasin is depicted on Figure 8. 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 8.

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 2019 to fall 2021 decreased at an average annual rate of 11,700 AF/yr. in the Forebay Subbasin. The negative signs in Table 4. indicate decline in groundwater levels or loss in storage.

Table 4. Parameters Used for Estimating Change in Groundwater Storage

Component	Values
Area of contoured portion of Subbasin (acres)	87,700
Storage coefficient	0.12
Average change in groundwater elevation from fall 2019 to fall 2021 (feet)	-2.22
Change in groundwater storage from fall 2019 to fall 2021 (AF)	-23,400
Total average annual change in groundwater storage (AF/yr.)	**-11,700**

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

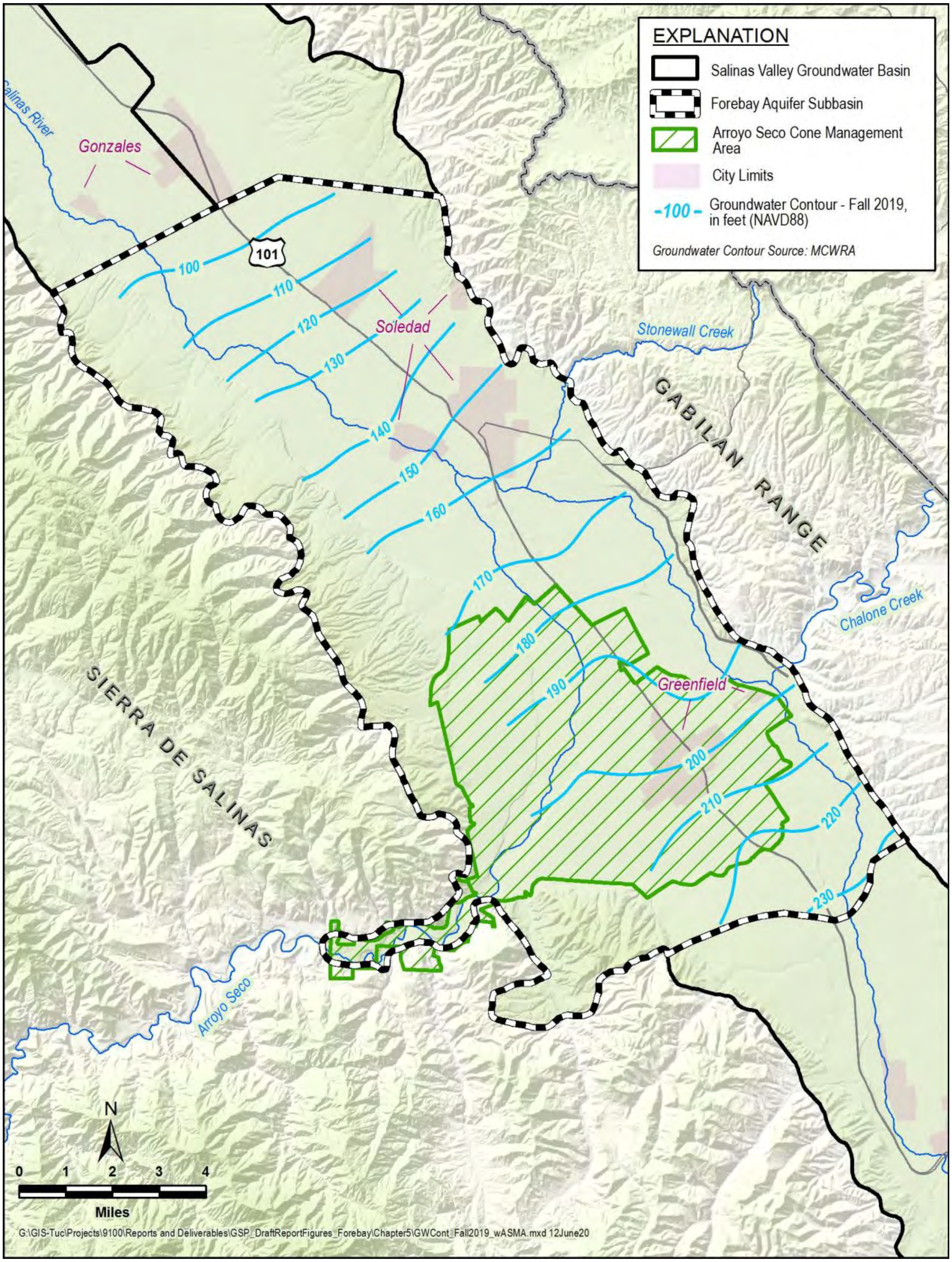

Figure 7. Fall 2019 Groundwater Elevation Contour Map for the Forebay Aquifer Subbasin

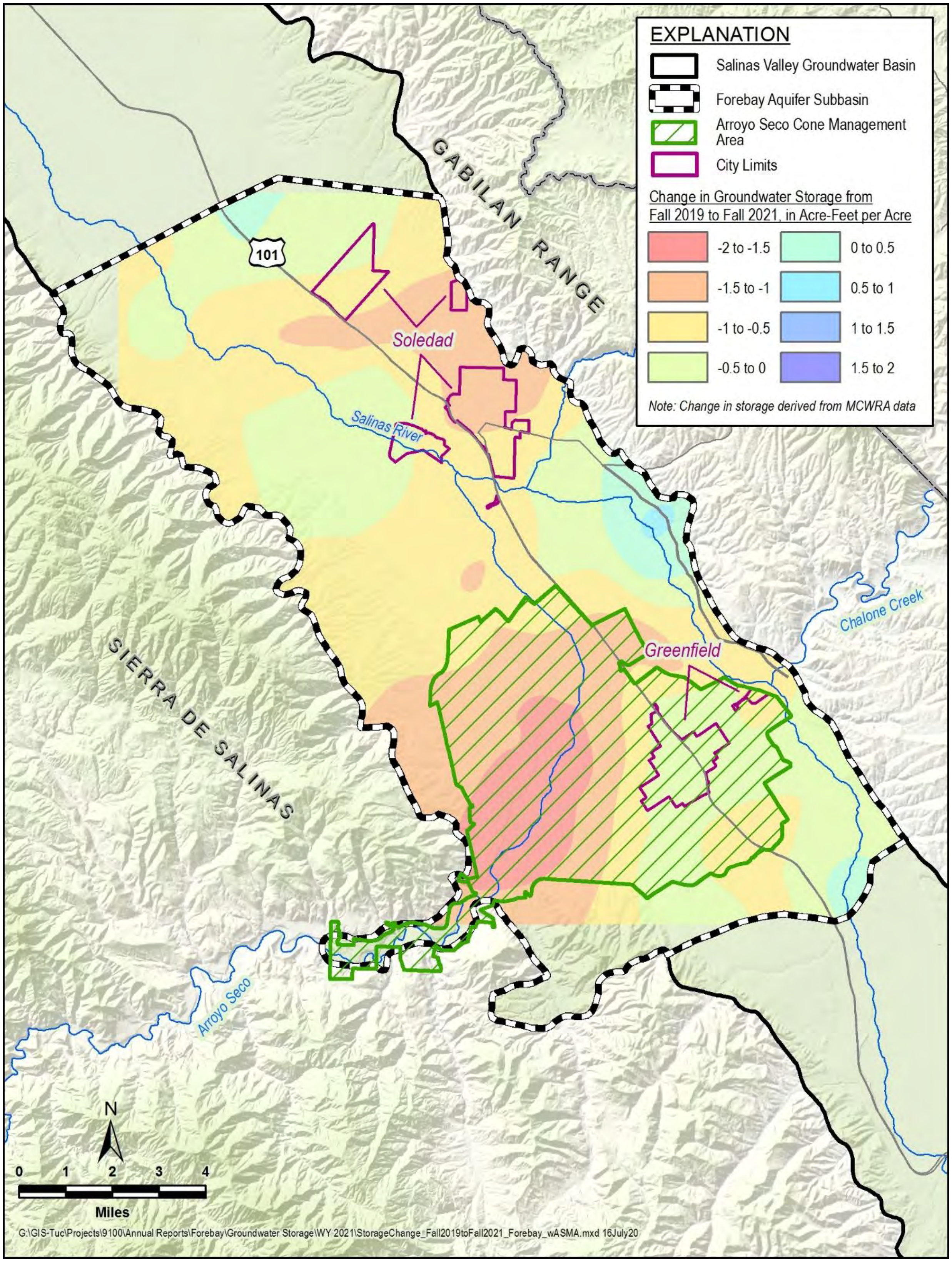

Figure 8. Average Annual Change in Groundwater Storage Between WY 2019 and WY 2021 in the Forebay Aquifer Subbasin

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 9. The annual and cumulative groundwater storage changes included on Figure 9 are based on Subbasin-wide average groundwater elevation changes. This figure includes groundwater extraction from 1995 to 2022, 1995 to 2016 average historical extraction, and the 2070 projected extraction from Chapter 6 of the GSP. Pumping increased slightly since the previous reporting year in reporting year 2021, but is lower than the historical average and projected pumping. The orange line represents cumulative storage change since 1944 (e.g., zero represents groundwater conditions in 1944, and each year the annual change in storage is added to produce the cumulative change in storage). The green line represents the annual change in storage from the previous year, such that the 1995 annual change in storage value is based on change in storage from 1994. In WY 2021, annual change in groundwater storage increased, as shown by the green line, but not enough to cause the cumulative change in storage since 1944 to increase, as shown by the orange line.

Figure 9. Groundwater Use and Annual and Cumulative Change in Groundwater Storage

3.4 Groundwater Quality

Degradation of groundwater quality is measured in public water system supply wells using data from the SWRCB Division of Drinking Water (DDW). Under the Irrigated Lands Regulatory Program (ILRP), water quality degradation is monitored for on-farm domestic wells and agricultural supply (irrigation) wells. Water quality data for both programs can be found on SWRCB's GeoTracker GAMA groundwater information system. The constituents of concern (COC) 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 COCs for agricultural supply wells include those that may lead to reduced crop production and are outlined in the Central Coast Regional Water Quality Control Board (CCRWQCB)'s Basin Plan. As discussed in the GSP, each set of wells has its own COCs. Table 5 and Figure 10 show the number of wells that were sampled and that have exceeded the regulatory standard in WY 2021 for the COCs in the Forebay Subbasin listed in the GSP. The COCs that exceeded their regulatory limit in WY 2021 include 1,2,3-trichloropropane, manganese, and nitrate.

Table 5. WY 2021 Groundwater Quality Data

Constituents of Concern (COC)	Regulatory Exceedance Standard	Standard Units	Number of Wells Sampled for COC in WY 2021	Number of Wells Exceeding Regulatory Standard in WY 2021
DDW Wells				
1,2-Dibromo-3-chloropropane	0.2	UG/L	0	0
1,2,3-Trichloropropane	0.005	UG/L	5	1
Beryllium	4	UG/L	1	0
Chloride	500	MG/L	1	0
Di(2-ethylhexyl) phthalate	4	UG/L	3	0
Dinoseb	7	UG/L	7	0
Iron	300	UG/L	2	0
Lindane	0.2	UG/L	0	0
Manganese	50	UG/L	3	1
Nitrate (as nitrogen)	10	MG/L	32	3
Polychlorinated Biphenyls	0.5	MG/L	0	0
Specific Conductance	1600	UMHOS/CM	3	0
Sulfate	500	MG/L	1	0
Thallium	2	UG/L	1	0
Total Dissolved Solids	1000	MG/L	3	0
Vinyl Chloride	0.5	UG/L	5	0
ILRP On-Farm Domestic Wells				
Iron	300	UG/L	0	0
Manganese	50	UG/L	0	0
Nitrate (as nitrogen)	10	MG/L	9	4
Nitrate + Nitrite (sum as nitrogen)	10	MG/L	0	0
Specific Conductance	1600	UMHOS/CM	1	0
Sulfate	500	MG/L	1	0
Total Dissolved Solids	500	MG/L	1	0
ILRP Irrigation Supply Wells				
Iron	5	MG/L	0	0
Manganese	0.2	MG/L	0	0

Note: MG/L= milligram/Liter, UG/L = micrograms/Liter, UMHOS/CM = micromhos/centimeter

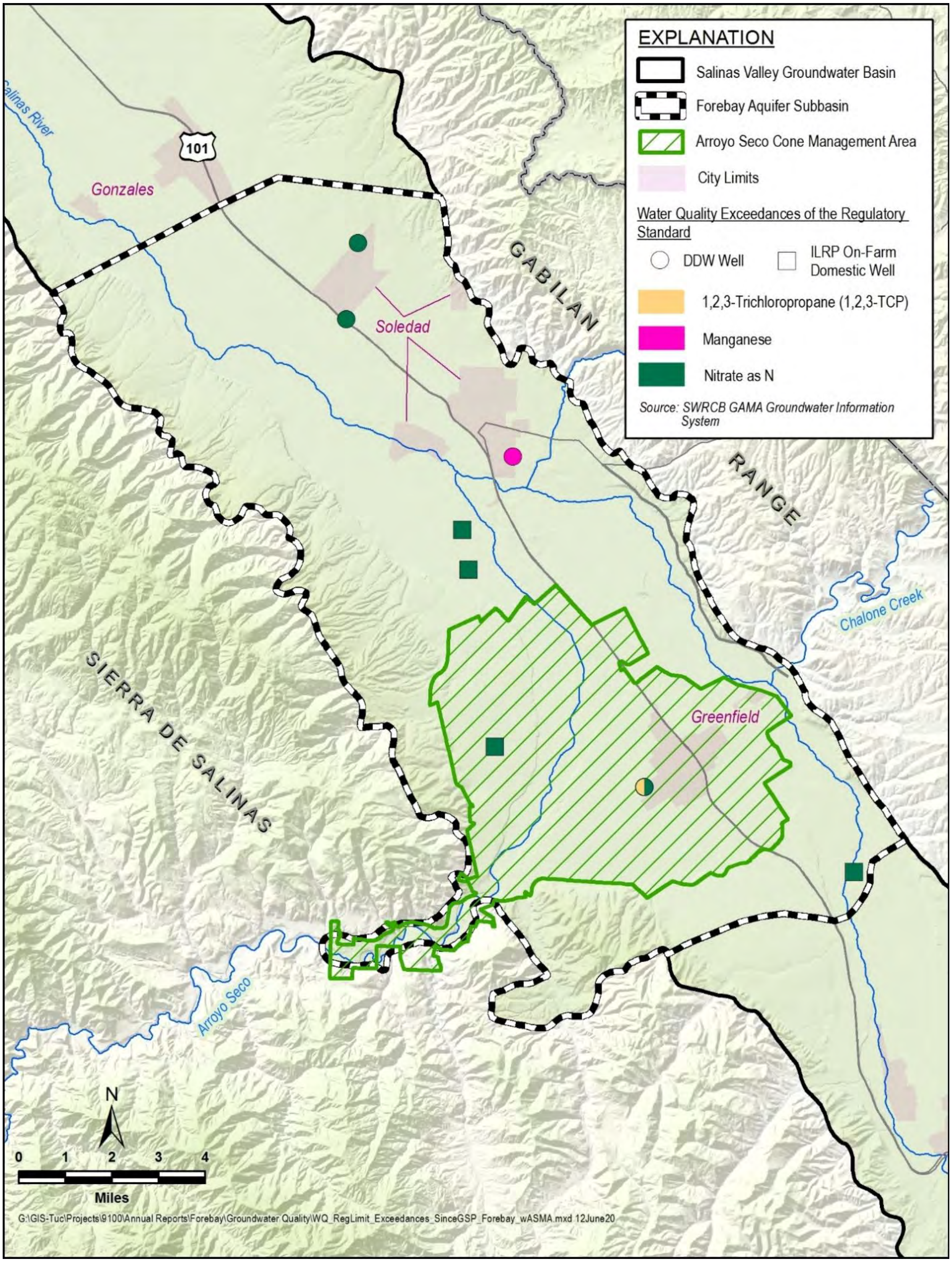

Figure 10. Wells with an Exceedance of the Regulatory Standard in WY 2021

3.5 Subsidence

Subsidence is measured using Interferometric Synthetic-Aperture Radar (InSAR) data. These data are provided by DWR on the SGMA data viewer portal (DWR, 2021). Figure 11 shows the annual subsidence for the Forebay Subbasin from October 2020 to October 2021. Data continue to show negligible subsidence. All land movement was within the estimated error of measurement of +/- 0.1 foot.

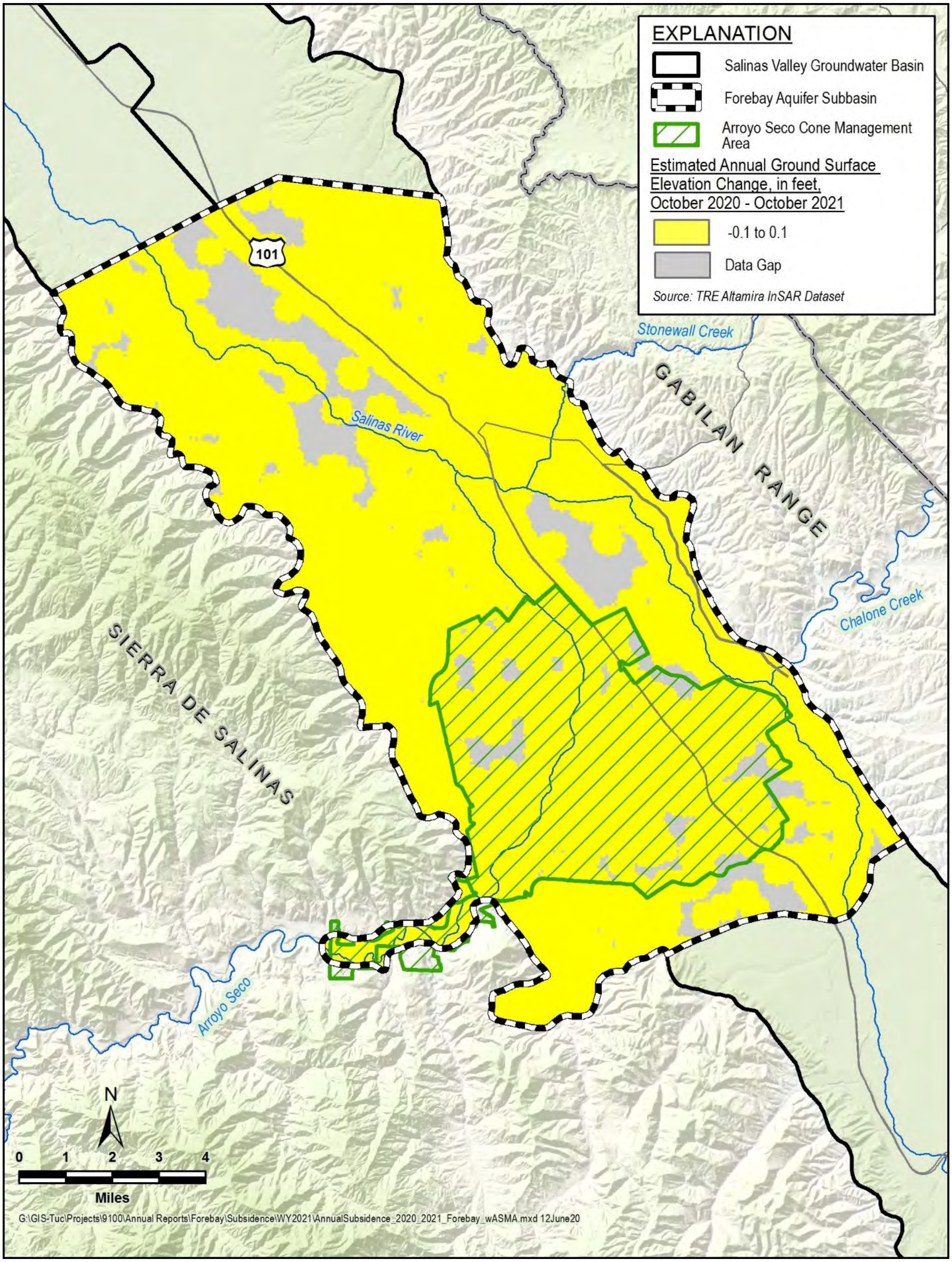

Figure 11. Annual Subsidence

3.6 Depletion of Interconnected Surface Water

As described in Section 4.4.5.1 of the GSP, the locations of interconnected surface water (ISW) in the Forebay Subbasin are mainly along the Salinas River and the Arroyo Seco. SVBGSA is including 3 existing shallow wells in the ISW monitoring network to monitor interconnection in the Subbasin. These wells will be supplemented with a new shallow well that will be installed along the Arroyo Seco. The 3 existing monitoring wells and the 2020 and 2021 shallow groundwater elevations are listed in Table 6.

Table 6. Shallow Groundwater Elevation Data

Monitoring Well	WY 2020 Elevation Data (ft)	WY 2021 Elevation Data (ft)
17S/06E-33R02	161.1	157.9
18S/06E-03P01	167.3	175.4
18S/07E-32G02	207.8*	203.0

*Groundwater elevation estimated.

Depletion of ISW along the Salinas River due to groundwater pumping was estimated using the Salinas Valley Integrated Hydrologic Model (SVIHM[1]), as described in Section 5.5.2 of the GSP. This analysis defines a peak conservation release period from June to September, reflecting when most conservation releases are made. However, releases can be made at any point during the full MCWRA conservation release period that occurs from April to October. Depletion of interconnected sections of the Salinas River is estimated separately for the peak conservation release period of June through September, and the non-peak conservation release period of October through May. Depletion of interconnected sections of other surface water bodies is estimated for the entire year. Along the Salinas River, average depletion of ISW is estimated to be 9,300 AF/yr. during peak conservation release period and 20,400 AF/yr. during the non-peak period. Average annual depletion of ISW along other surface water bodies in the Subbasin, mainly the Arroyo Seco, is estimated to be 2,100 AF/yr.

[1] These data (model and/or model results) are preliminary or provisional and are subject to revision. This model and model results are being provided to meet the need for timely best science. The model has not received final approval by the U.S. Geological Survey (USGS). No warranty, expressed or implied, is made by USGS or the U.S. Government as to the functionality of the model and related material nor shall the fact of release constitute any such warranty. The model is provided on the condition that neither USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the model.

4 ANNUAL PROGRESS TOWARD IMPLEMENTATION OF THE GSP

4.1 WY 2021 Groundwater Management Activities

This section details groundwater management activities that have occurred in WY 2021, independent of GSP implementation. These include activities of SVBGSA and MCWRA that promote groundwater sustainability and are important for reaching the GSP sustainability goal.

In WY 2021, SVBGSA and MCWRA undertook 4 main categories of activities to further groundwater sustainability goals: coordination and engagement, data and monitoring, planning, and project and implementation activities.

4.1.1 Coordination and Engagement

SVBGSA continued robust stakeholder engagement and strengthened collaboration with key agencies and partners. SVBGSA worked throughout the year with the Forebay Aquifer Subbasin Planning Committee and the ASGSA to develop the Forebay Subbasin GSP, submitted to DWR in January 2022. SVBGSA and ASGSA met regularly through the Coordination Committee that consisted of 2 Board members from each agency, and in April 2021 the agencies finalized and approved the Forebay Subbasin Groundwater Sustainability Plan Implementation Agreement between the SVBGSA and ASGSA.

SVBGSA also identified the need for an Integrated Implementation Committee to guide development of an Integrated Implementation Plan for 6 Subbasins within the Salinas Valley. The Integrated Implementation Committee will provide input on basin wide and regional projects and management actions and resolve neighboring basin concerns. The intent of the Committee is to ensure the Salinas Valley Basin is on a cohesive path to sustainability. Over the course of WY 2021, SVBGSA held 12 Valley-wide Board meetings and 11 Valley-wide Advisory Committee Meetings.

SVBGSA and MCWRA also 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 have scoped the roles of the 2 agencies and are developing a Memorandum of Understanding (MOU) to be reviewed by each agency Board. The MOU will further outline how the 2 agencies 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 National Marine Fisheries Service on the effect of groundwater extraction on surface water depletion and steelhead and its habitat

- Monterey County Health Department on data and the existing well permitting and water quality monitoring programs
- CCRWQCB on data and future coordination with the multiple agencies involved in water quality
- Integrated Regional Water Management Plan, including coordinating with CCWG on watershed coordinator grant

SVBGSA contracted with Consensus Building Institute (CBI) to conduct a work program to help SVBGSA better define a meaningful engagement strategy with Disadvantaged Communities (DACs) and to develop a work plan that aligned with GSP development and ultimately with SVBGSA long term goals around groundwater sustainability. CBI conducted interviews to gage primary groundwater issues of concern in DACs, identified possible SVBGSA focus with DACs, confirmed barriers to engagement with DACs, and identified outreach and education materials and approaches to achieve success with these communities over the long term. DACs are an important stakeholder for the SVBGSA to develop meaningful and long-term relationships with regard to groundwater sustainability.

4.1.2 Data and Monitoring

SVBGSA also undertook several efforts to further increase data collection and monitoring. During WY 2021:

- SVBGSA assessed data gaps and selected 2 to request be filled through DWR's Technical Support Services. SVBGSA evaluated land ownership and access. In doing so, SVBGSA worked with MCWRA to ensure the wells will be strategically located and contribute data that is useful for all agencies.
- 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 participated in DWR's planning for flying AEM across the Salinas Valley. SVBGSA undertook communication and engagement with stakeholders, and it gave feedback on flight lines.

4.1.3 Planning

Throughout WY 2021, SVBGSA worked with the 10 members of the Forebay Planning Committee to draft the Forebay Subbasin GSP. SVBGSA engaged the Committee in an iterative process of chapter development: first educating the Committee on chapter topics, then facilitating discussions on each topic, and finally reviewing draft chapters. Stakeholders were involved in understanding the Subbasin, setting SMC, and developing a list of potential projects and management actions. It received public comments throughout the process and in September 2021 it initiated a 45-day public comment period for the full GSP. At the conclusion of the planning process in August 2021 for the Forebay GSP the SVBGSA will have held more than 38 planning meetings and technical workshops on each aspect of the Forebay Subbasin GSP.

In addition to regularly scheduled committee meetings, a series of workshops were held for the Forebay Subbasin Planning Committee as detailed in Table 7. These workshops were informational for committee members, stakeholders, and the general public and cover pertinent topics to be included in the GSPs. Workshops were timed to specific chapter development for the GSP. Subject matter experts were brought in as necessary to provide the best available information to Subbasin Planning Committee members.

Table 7. Subject Matter Workshops Held During GSP Preparation

Topic	Date
Brown Act and Conflict of Interest	July 22, 2020
Sustainable Management Criteria	July 28, 2020
Water Law	August 10, 2020
Salinas Valley Watershed Overview	August 26, 2020
Web Map Workshop	September 30, 2020
Town Hall – Domestic Wells & Drinking Water	October 28, 2020
Pumping Allocations	November 18, 2020
Funding Mechanisms	January 27, 2021
Water Budgets	February 24, 2021
Communications and Implementation	March 31, 2021
Technical Modeling Workshop – SVIHM & SVOM	June 30, 2021

As an agency, SVBGSA GSP planning efforts during WY 2021 focused on developing 4 additional GSPs besides the Forebay GSP, and the GSP Update for the adjacent 180/400-Foot Aquifer Subbasin that is currently under development. While SVBGSA developed these plans through a bottom-up process working with subbasin planning committees, it ensured that they aligned with the Forebay Subbasin GSP, particularly with regards to selecting SMC that would not prevent the Forebay Subbasin from avoiding undesirable results. For example, all adjacent subbasin GSPs selected groundwater level minimum thresholds that are based on not exceeding recent low levels. SVBGSA coordinated with Arroyo Seco GSA throughout plan development.

In June 2021, SVBGSA received DWR's review and approval of the 180/400-Foot Aquifer Subbasin GSP. Since the Forebay Subbasin GSP and other Salinas Valley GSPs were under development, SVBGSA took action immediately to address the corrective action on the water quality undesirable result. SVBGSA sought legal advice, revised the undesirable result for the GSPs, and brought the revised language to the partner GSAs, subbasin planning committees, Advisory Committee, and Board of Directors for approval. This language was included in the Forebay Subbasin GSP.

4.1.4 GSP Implementation Activities

The SVBGSA submitted the Forebay Aquifer Subbasin GSP in January 2022. SVBGSA and MCWRA undertook several activities during WY 2021 that contribute to GSP Implementation:

Deep Aquifers Study: In WY 2021, SVBGSA solicited contributions to fund the Deep Aquifers Study from local agencies and stakeholders. In October 2021, SVBGSA secured the $850,000 needed for the study when the Board approved the Agreement for Contribution to Funding the Deep Aquifer Investigation to be entered into with the following agencies and entities for the Deep Aquifer Study: Monterey County; Monterey County Water Resources Agency; Castroville Community Services District; Marina Coast Water District; City of Salinas; Alco Water; California Water Service; and irrigated agriculture entities include the Salinas Valley Water Coalition. SVBGSA drafted the Request for Qualifications and released it in September 2021.

Drought Technical Advisory Committee (D-TAC): During WY 2021, MCWRA continued to convene D-TAC. D-TAC completed the development of standards and guiding principles for managing the operations of Nacimiento and San Antonio reservoirs during multi-year drought periods. The MCWRA Board of Directors adopted the standards and guiding principles on February 16, 2021. Moving forward, D-TAC will meet any time a drought trigger occurs to develop a recommended release schedule for Nacimiento and San Antonio Reservoirs.

4.2 Sustainable Management Criteria

The Forebay Aquifer Subbasin GSP includes descriptions of significant and unreasonable conditions, minimum thresholds, interim milestones, measurable objectives, and undesirable results for each of DWR’s 5 sustainability indicators relevant to this Subbasin. The SVBGSA and ASGSA determined locally defined significant and unreasonable conditions based on public meetings and staff discussions. Although the ASCMA and the greater Forebay Subbasin are managed by different GSAs, both areas will be managed cooperatively to meet the sustainability goal of the entire Subbasin. The undesirable results for all sustainability indicators are defined consistently throughout the Subbasin. 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.

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 management of groundwater. 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.

Average hydrogeologic conditions are the anticipated future groundwater conditions in the Subbasin, averaged over the planning horizon and accounting for anticipated climate change. 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 12 show the anticipated average precipitation for 2030 and 2070, accounting for reasonable future climatic change (DWR, 2018). Measured annual precipitation for WY 2020 and 2021 are shown as the 2 blue dots, and the dashed blue line shows the average measured precipitation since 2020 data in the GSP. This figure shows that WY 2021 was below the average hydrologic conditions expected for the Subbasin. Furthermore, average rainfall 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 2021 was dry and therefore it is more likely that minimum thresholds are exceeded in 2021. Because the Subbasin is not expected to achieve sustainability until 2042, the current minimum threshold exceedances do not imply unsustainable groundwater management. However, areas with current minimum threshold exceedances should be monitored and should demonstrate progress toward measurable objectives as conditions approach expected average conditions.

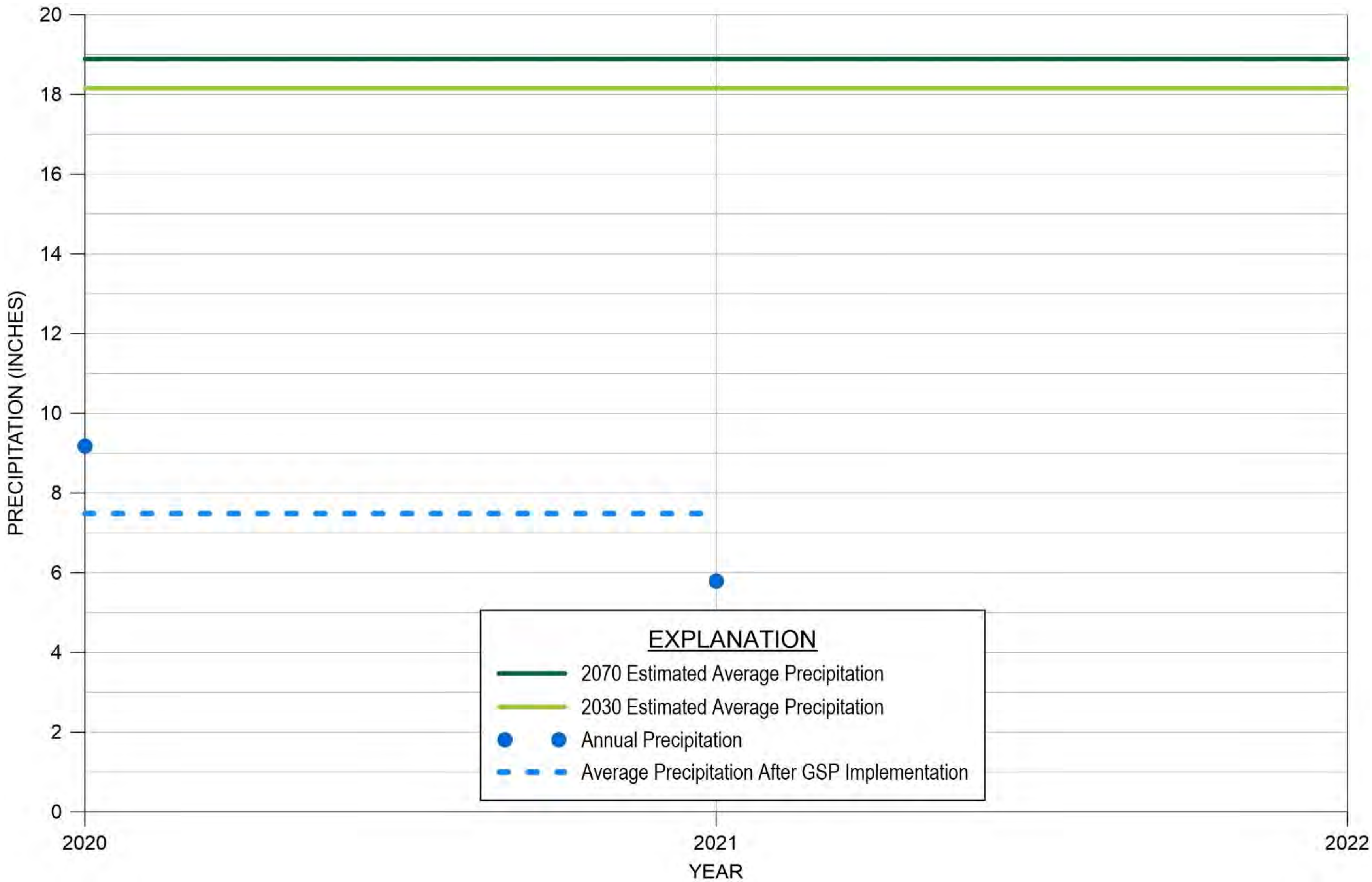

Figure 12. Comparison of Average Precipitation Since GSP Data and Estimated Future Average Precipitation

4.2.1 Chronic Lowering of Groundwater Levels SMC

4.2.1.1 Minimum Thresholds

Section 8.6.2.1 of the Forebay Subbasin GSP describes the information and methodology used to establish minimum thresholds for chronic lowering of groundwater levels. In the Forebay Subbasin, the minimum thresholds were set to December 2015 groundwater elevations. The minimum threshold values for each well within the groundwater elevation monitoring network are provided in Table 8. December 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. In WY 2021, no wells in the Subbasin exceeded their minimum thresholds as indicated by the yellow and green cells below.

Table 8.Groundwater Elevation Data, Minimum Thresholds, and Measurable Objectives (in feet)

Below minimum threshold		Above minimum threshold		Above measurable objective	
Monitoring Site	**Minimum Threshold**	**WY 2020 elevation data**	**WY 2021 elevation data**	**Interim Milestone at Year 2027**	**Measurable Objective (goal to reach at 2042)**
17S/05E-02N04	89.7	105.2	103.1	106.8	108.5
17S/05E-03R50	89.7	105.3	104.1	108.4	111.5*
17S/05E-04R01	82.7	100.5	97.1	101.9	101.8
17S/05E-06Q01	76.7	95.3	91.4	98.0	97.9
17S/05E-08L02	92.5	110.5	106.9	111.8	109.4*
17S/05E-09R01	93.1	110.7	108.0	112.6	112.8*
17S/05E-12E01	95.9*	104.6	104.6	105.6	105.2
17S/05E-27A01	116.9	134.4	131.2	135.1	134.6
17S/05E-36F02	120.9	136.4	135.2	137.6	136.6
17S/06E-16N01	75.3*	88.8	105.2	99.9	109.4
17S/06E-19D01	118.6	134.8	133.2	136.1	135.5
17S/06E-27K01	137.9	156.1	155.1	158.3	156.2
17S/06E-29C01	129.9	146.4	141.1	147.0	144.8
17S/06E-33R01	141.9	161.3	161.3	162.6	160.7
17S/06E-33R02	142.0	161.1	157.9	162.4	159.7
17S/06E-35J01	151.5	173.6	170.0	173.5	171.2
18S/06E-01E01	149.3	169.6	172.9	173.0	174.1
18S/06E-02N01	142.2	163.2	160.0	166.5	164.0
18S/06E-05R03	136.1	153.6	148.7	156.0	154.0

18S/06E-06M01	144.8	161.5	161.2	163.3	162.6
18S/06E-11J01	154.4	177.3	172.3	181.1	177.1
18S/07E-19G02	151.2	173.9	168.8	175.3	175.7
19S/07E-10P01	204.5	223.3	225.0	228.8	227.8
Arroyo Seco Cone Management Area					
18S/06E-16L01	140.4	165.6	159.4	167.9	168.4
18S/06E-22B02	153.2	170.6	168.2	177.9	180.8
18S/06E-22B03	157.2	177.7	173.5	186.4	183.8
18S/06E-22B04	156.2	177.2	171.8	183.2	182.4
18S/06E-24M01	161.9	181.8	180.0	191.8	187.4
18S/06E-24M02	162.0	182.5	181.5	192.0	187.4
18S/06E-25F01	167.9	188.8	183.8	196.6	199.0
18S/06E-34B01	167.2	190.1	186.5	194.2	199.5
18S/06E-35F01	165.9	189.2*	189.2*	191.6	198.9
18S/06E-35F02	166.5	187.7	187.7	203.3	203.6
18S/07E-20K01	160.6	183.4	180.9	186.2	183.7
18S/07E-28K01	176.0	202.7*	202.7*	201.8	199.3
19S/06E-01H01	181.3	202.9	199.9	204.3	207.0
19S/06E-11C01	175.6	199.9	190.5	204.6	206.3
19S/07E-04Q01	207.1	219.9	219.5	224.4	223.9
19S/07E-05B02	189.2	209.2	205.1	210.1	210.0

*Groundwater elevation was estimated.

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 8.Two wells had groundwater elevations higher than their measurable objective in WY 2021 and are represented by the green cells in Table 8.

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 8.The WY 2021 groundwater elevations in 2 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 is:

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

Based on the data in Table 8, none of the RMS wells exceed the 20-year planning horizon undesirable result. Groundwater elevation minimum threshold exceedances, compared with the 2042 undesirable result, is shown on Figure 13. If a value is in the shaded red area, it would constitute undesirable results in 2042 and be enforceable after this point. This graph will be updated annually with new data to demonstrate the sustainability indicator’s direction toward sustainability.

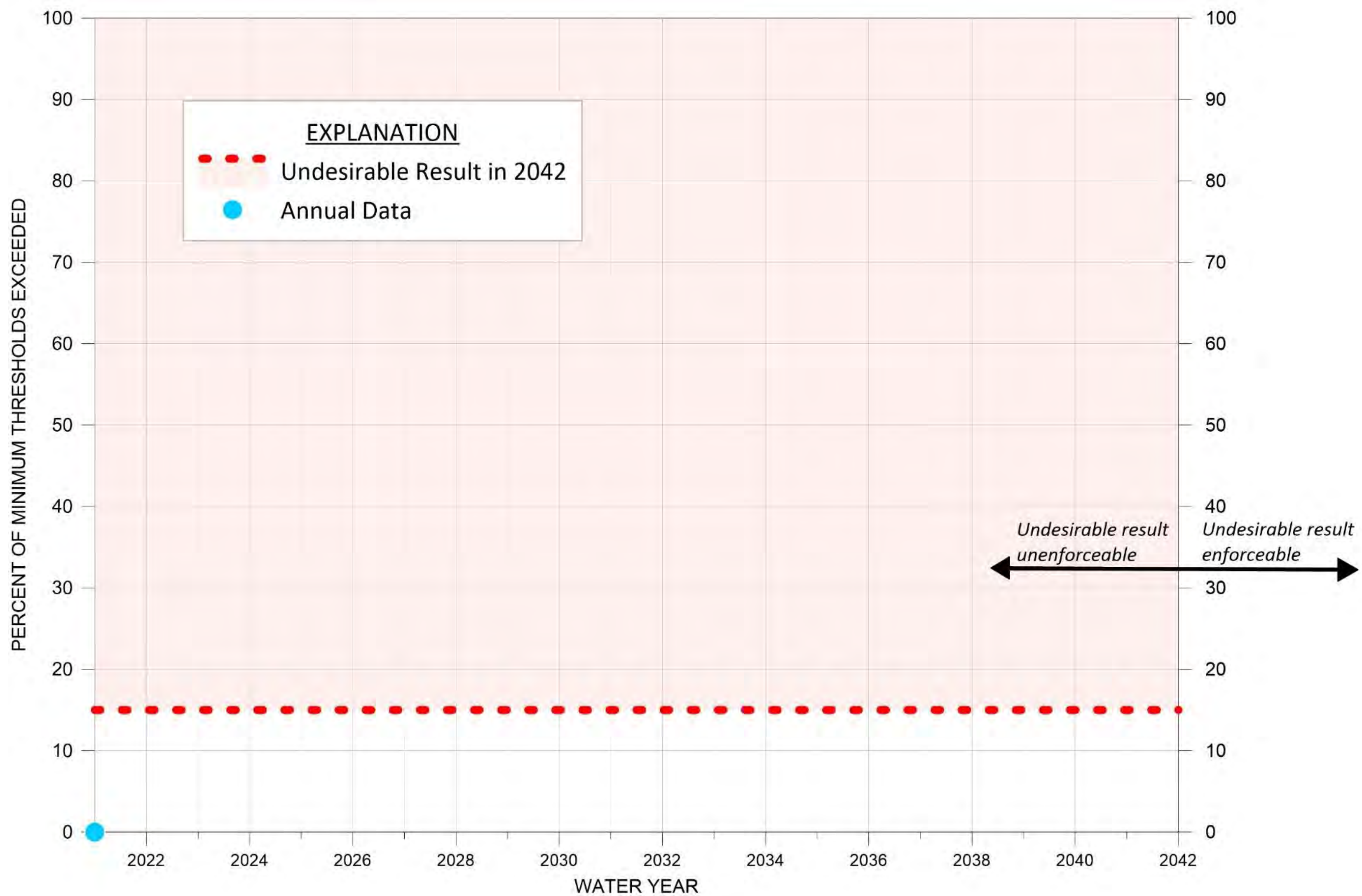

Figure 13. Groundwater Elevation Exceedances Compared to 2042 Undesirable Result

4.2.2 Reduction in Groundwater Storage SMC

4.2.2.1 Minimum Threshold

The minimum threshold for reduction in groundwater storage is set to the amount of groundwater that is in storage when groundwater elevations are at their minimum thresholds. The minimum threshold for reduction in storage is 267,000 AF below the measurable objective. Section 8.7.2.1 of the Forebay Subbasin GSP describes the information and methodology used to establish the minimum threshold for reduction of groundwater storage. Although pumping is not the metric for establishing change in groundwater storage, the GSAs are committed to pumping at or less than the Subbasin's long-term sustainable yield. SGMA allows 20 years to reach sustainability.

4.2.2.2 Measurable Objective and Interim Milestones

The measurable objective for reduction in groundwater storage is 0 when groundwater elevations are at their measurable objectives. Section 8.7.3.1 of the Forebay Subbasin GSP describes the information and methodology used to establish the measurable objective for reduction of groundwater storage. In WY 2021 the amount of groundwater in storage was 35,700 AF below the measurable objective. Since WY 2019, the amount of groundwater in storage decreased by 35,000 AF.

4.2.2.3 Undesirable Result

The reduction of storage undesirable result is:

There is an exceedance of the minimum threshold.

In WY 2021 the groundwater in storage was approximately 232,000 AF above the minimum threshold; therefore, an undesirable result does not exist. Figure 14 shows groundwater extractions compared to the 2042 change in storage undesirable results goal. Values in the shaded red area are above the 2042 undesirable result. This graph will be updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

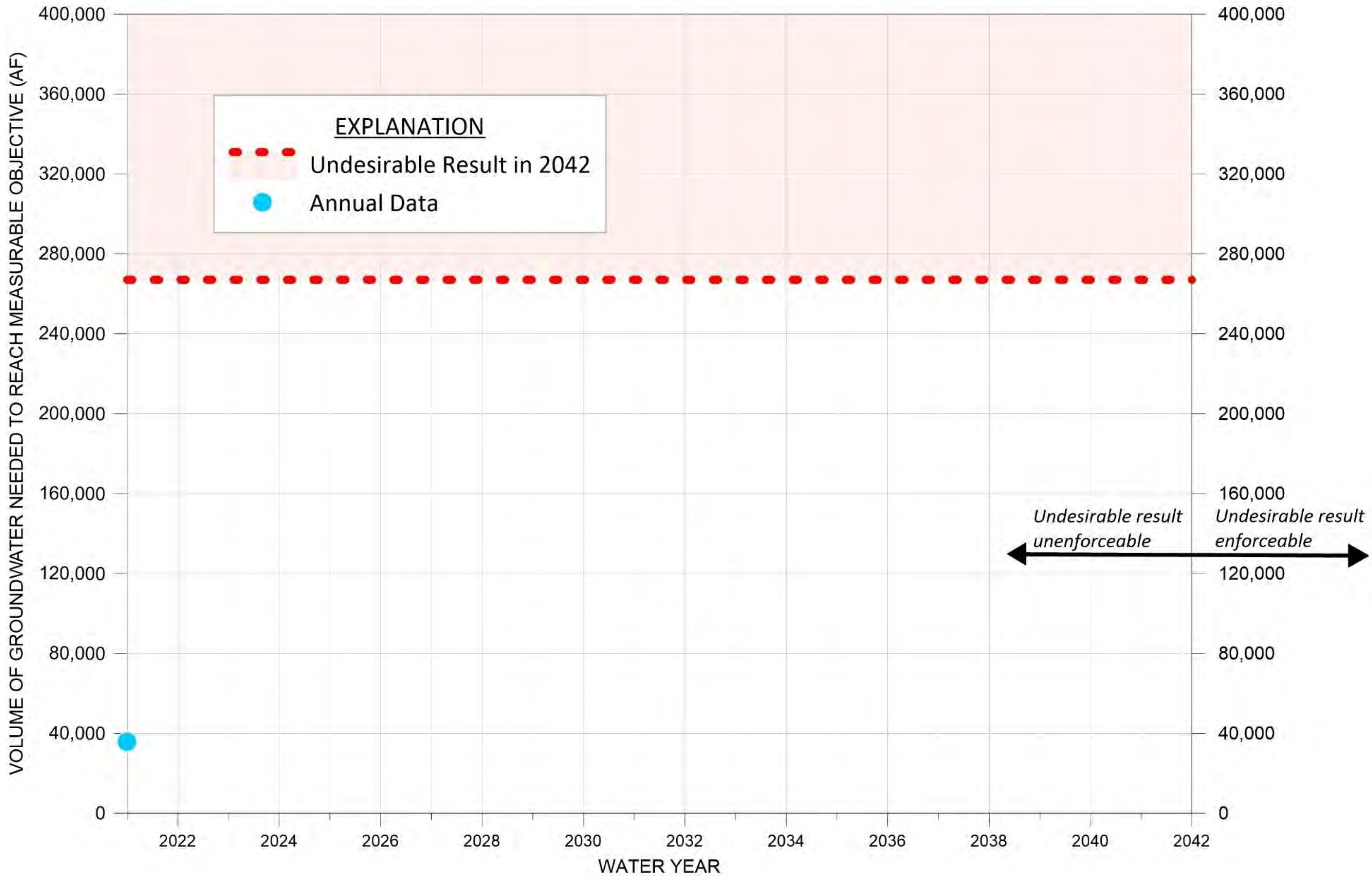

Figure 14. Groundwater in Storage Compared to the Groundwater Storage 2042 Undesirable Result

4.2.3 Degraded Groundwater Quality SMC

4.2.3.1 Minimum Thresholds

The degraded groundwater quality minimum threshold for each constituent of concern is based on the number of supply wells that had higher concentrations of constituents than the regulatory standards for drinking water and irrigation water during the last sampling. Section 8.8.2.1 of the Forebay Subbasin GSP describes the information and methodology used to establish minimum thresholds for degraded groundwater quality. The minimum threshold values for each well within the groundwater quality monitoring network are provided in Table 9. Table 9. also shows the WY 2021 exceedances of the regulatory standard discussed in Section 3.4 and the running total of regulatory standard exceedances used to measure against the minimum thresholds. Only the latest sample for each COC at each well is used for the running total. The minimum thresholds are set at zero additional exceedances of each constituent, based on the exceedances in 2019. These conditions were determined to be significant and unreasonable because groundwater quality in exceedance of these will 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 will reduce grower's yields and profits.

In WY 2021, there were 4 exceedances of the minimum thresholds. COCs with minimum thresholds exceedances are highlighted in orange in Table 9. The last column in Table 9 includes the number of exceedances above the minimum thresholds, and the COCs that exceeded the minimum threshold are highlighted in orange. The negative numbers in the last column indicate a drop in the total number of wells that exceed the regulatory limit, as compared to 2019 when the minimum threshold was established.

Table 9. Minimum Thresholds and Measurable Objectives for Degradation of Groundwater Quality

Constituent of Concern (COC)	Minimum Threshold/ Measurable Objective (existing exceedances of Regulatory Standard in 2019)	WY 2021 Exceedances of Regulatory Standard (new exceedances based on wells monitored in WY 2021)	Total Exceedances of Regulatory Standard	Number of Supply Wells Exceeding the Minimum Threshold
DDW Wells				
1,2-Dibromo-3-chloropropane	3	0	3	0
1,2,3-Trichloropropane	2	1	3	1
Beryllium	1	0	1	0
Chloride	1	0	1	0

Constituent of Concern (COC)	Minimum Threshold/ Measurable Objective (existing exceedances of Regulatory Standard in 2019)	WY 2021 Exceedances of Regulatory Standard (new exceedances based on wells monitored in WY 2021)	Total Exceedances of Regulatory Standard	Number of Supply Wells Exceeding the Minimum Threshold
Di(2-ethylhexyl) phthalate	1	0	1	0
Dinoseb	3	0	3	0
Iron	6	0	6	0
Lindane	1	0	1	0
Manganese	4	1	5	1
Nitrate (as nitrogen)	5	3	8	3
Polychlorinated Biphenyls	1	0	1	0
Specific Conductance	1	0	1	0
Sulfate	1	0	1	0
Thallium	1	0	1	0
Total Dissolved Solids	4	0	4	0
Vinyl Chloride	4	0	4	0
ILRP On-Farm Domestic Wells				
Iron	8	0	8	0
Manganese	2	0	2	0
Nitrate (as nitrogen)	162	4	165	1
Nitrate + Nitrite (sum as nitrogen)	62	0	57	0
Nitrite	1	0	1	0
Specific Conductance	71	0	68	0
Sulfate	34	0	34	0
Total Dissolved Solids	90	0	90	0
ILRP Irrigation Supply Wells				
Iron	1	0	1	0
Manganese	2	0	2	0

4.2.3.2 Measurable Objectives and Interim Milestones

The measurable objectives for degradation of groundwater quality represent a target number of groundwater quality exceedances in the Subbasin. SGMA does not require the improvement of groundwater quality. Therefore, the Forebay GSP includes measurable objectives identical to the minimum thresholds, as defined in Table 9. Interim milestones are also set at the minimum threshold levels. Although there were 4 groundwater quality minimum threshold exceedances in WY 2021, the groundwater quality data already meet the 2027 interim milestones because these exceedances are not due to GSA actions.

4.2.3.3 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 is:

> *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 9. shows 4 constituents exceeded their minimum thresholds in WY 2021. Since SVBGSA and ASGSA have 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 exceed the 20-year planning horizon undesirable result. The groundwater quality minimum threshold exceedances, compared with the 2042 undesirable results, are shown on Figure 15. If a value is in the shaded red area, it would constitute undesirable result in 2042. This graph is updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

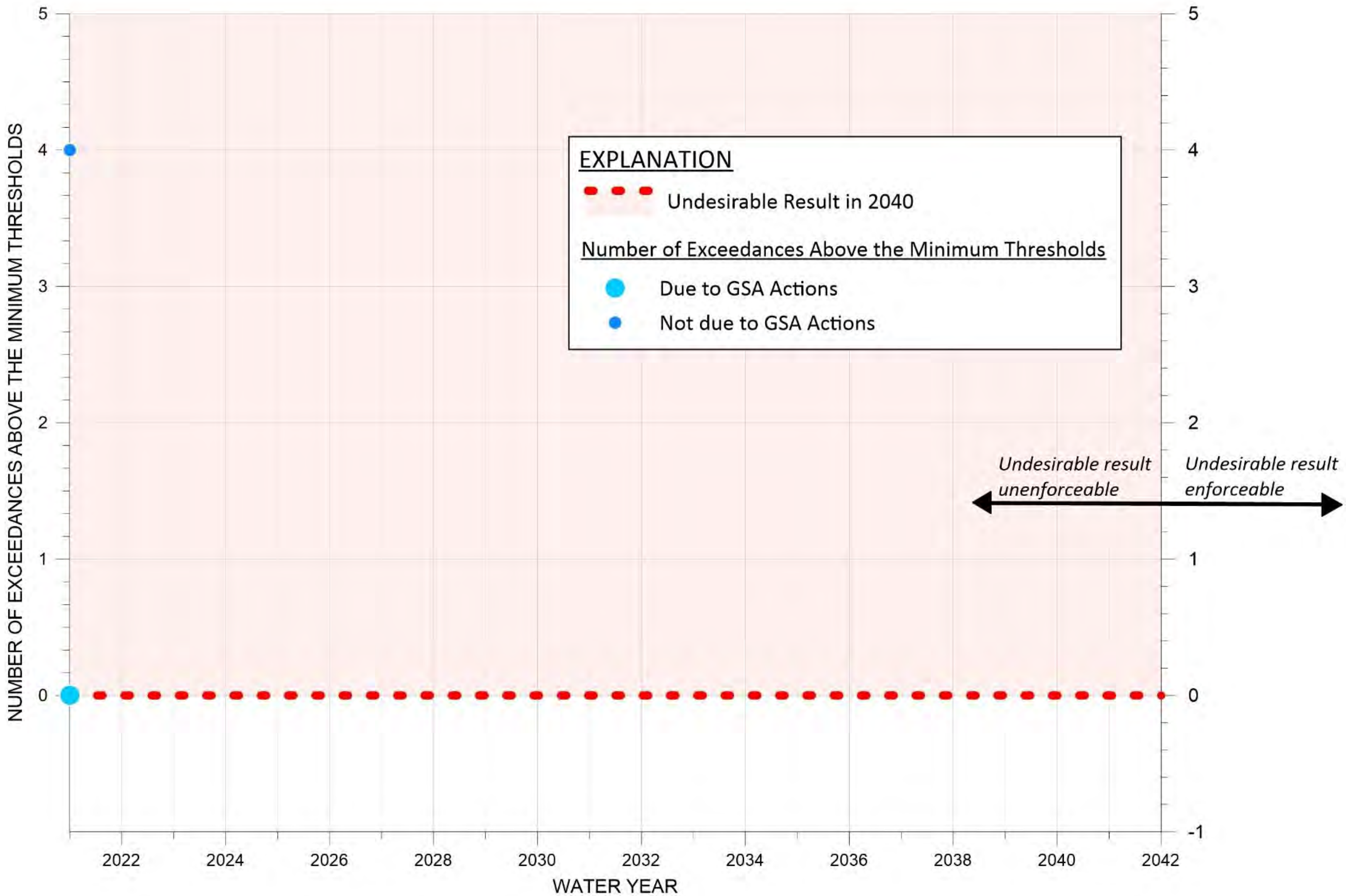

Figure 15. Groundwater Quality Minimum Threshold Exceedances Compared to the 2042 Groundwater Quality Undesirable Result

4.2.4 Land Subsidence SMC

4.2.4.1 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 8.9.2.1 of the Forebay 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 2020 to October 2021 demonstrated to be less than the minimum threshold of 0.1 foot per year, as shown on Figure 12.

4.2.4.2 Measurable Objectives and Interim Milestones

The measurable objectives for ground surface subsidence represent target subsidence rates in the Subbasin. Because the minimum thresholds of zero net long-term subsidence are 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 2020 to October 2021 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.

4.2.4.3 Undesirable Result

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

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

Data from October 2020 to October 2021 showed subsidence was below the minimum threshold of 0.1 foot per year. The latest land subsidence data, therefore, does not exceed the 20-year planning horizon undesirable result. Maximum measured subsidence in the Subbasin, compared with the 2042 change in subsidence undesirable results goal, is shown on Figure 16**Error! Reference source not found.Error! Reference source not found.Error! Reference source not found.**. If a value is in the shaded red area, it would constitute undesirable result in 2042.

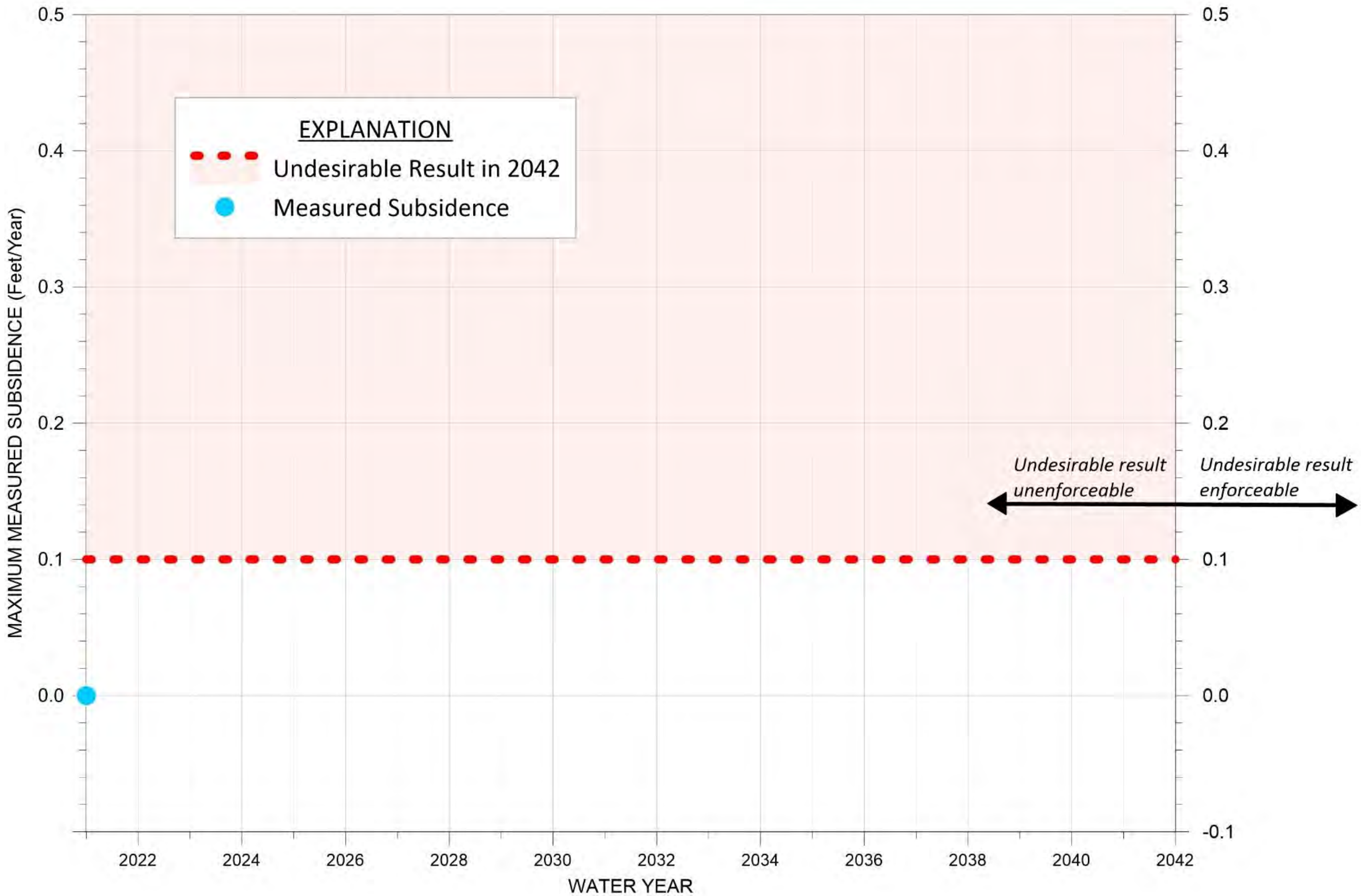

Figure 16. Maximum Measured Subsidence Compared to the 2042 Undesirable Result

4.2.5 Depletion of Interconnected Surface Water SMC

4.2.5.1 Minimum Thresholds

As described in Section 8.10.2.1 of the GSP, 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 minimum thresholds. ISW minimum thresholds were set to December 2015 shallow groundwater elevations and are included in Table 10. Shallow 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. In WY 2021, none of the existing monitoring wells exceeded their minimum threshold. When the new monitoring well is drilled, SMC will be determined using interpolated values from the groundwater elevation contour maps.

Minimum thresholds are not established for times when flow in a river is due to conservation releases from a reservoir. Conservation releases are meant to recharge the Salinas Valley groundwater basin; therefore, depletion of conservation releases is a desired outcome, and the minimum thresholds and measurable objectives do not apply to these flows.

Table 10. Shallow Groundwater Elevation Data, ISW Minimum Thresholds, and ISW Measurable Objectives (in feet)

Below minimum threshold		Above minimum threshold		Above measurable objective	
Monitoring Site	Minimum Threshold	WY 2020 elevation data	WY 2021 elevation data	Interim Milestone at Year 2027	Measurable Objective (goal to reach at 2042)
17S/06E-33R02**	142.0	161.1	157.9	160.8	159.7
18S/06E-03P01	147.0	167.3	175.4	168.1	170.3
18S/07E-32G02	186.6	207.8*	203.0	209.4	214.1*

*Groundwater elevation estimated.

**Monitoring well is also an RMS for chronic lowering of groundwater elevations, and SMC for groundwater level and ISW are identical.

4.2.5.2 Measurable Objectives and Interim Milestones

The measurable objectives for depletion of ISW target groundwater elevations are higher than the minimum thresholds. The measurable objectives are established to maintain consistency with the chronic lowering of groundwater elevation minimum thresholds, which are also established based on groundwater elevations. The measurable objectives for existing monitoring wells are listed in Table 10 and are set to 2015 shallow groundwater elevations plus 75% of the distance between 2015 and 1998 groundwater elevations. The green cell in Table 10. represents the well with WY 2021 groundwater elevations higher than the measurable objective.

Table 8 also lists the 2027 interim milestones, which are set at 5-year intervals to help reach measurable objectives. The WY 2021 groundwater elevations in 1 well is already higher than the 2027 interim milestones.

4.2.5.3 Undesirable Result

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

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

Table 10 shows that there are no exceedances of the ISW minimum thresholds; therefore, the WY 2021 shallow groundwater elevations do not exceed the 20-year planning horizon undesirable result. The ISW minimum threshold exceedances, compared with the 2042 undesirable results, is shown on Figure 17. If a value is in the shaded red area, it would constitute undesirable result in 2042. This graph is updated annually with new data to demonstrate the sustainability indicator’s direction toward sustainability.

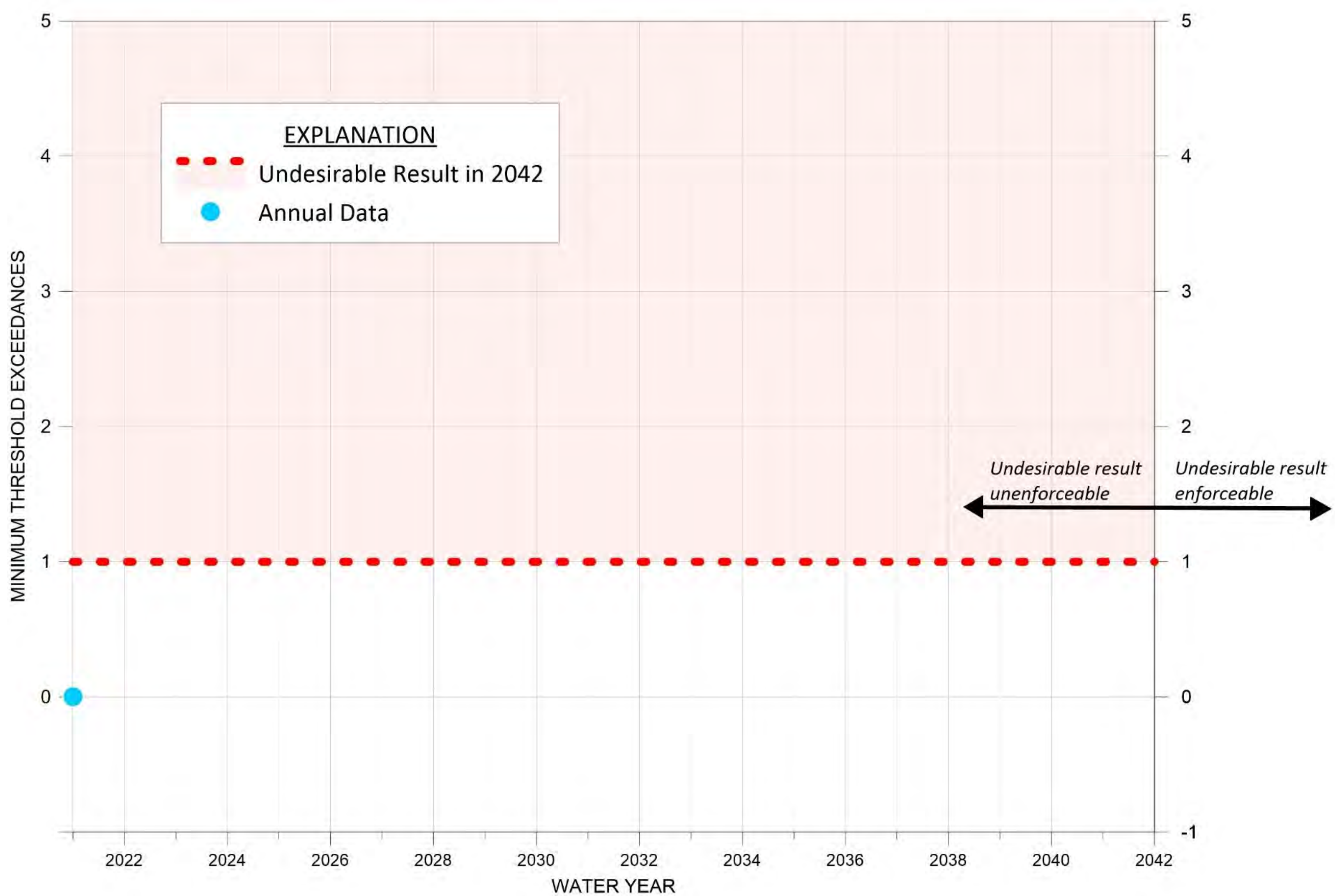

Figure 17. Shallow Groundwater Elevation Exceedances Compared to 2042 Undesirable Result

5 CONCLUSION

This 2021 Annual Report updates data and information for the Forebay Subbasin GSP from WY 2019 to WY 2021 with the best available data. It covers GSP implementation activities up to September 30, 2021. 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 2021 was classified as dry. Groundwater elevations decreased in WY 2021, with most wells showing elevations above their minimum thresholds but still below their measurable objectives. Change in groundwater storage, as measured by groundwater elevation changes, decreased from WY 2019 and WY 2021 but was greater than the minimum threshold. Groundwater quality data showed 4 exceedances of minimum thresholds. Negligible subsidence was observed in WY 2021. Finally, the existing shallow wells used to monitor depletion of ISW were all above their minimum thresholds.

Since GSP submittal, the SVBGSA has continued to actively engage stakeholders and has started planning activities to implement the GSP. The SVBGSA continues to engage stakeholders through its participatory subbasin planning committees, Advisory Committee, and Board of Directors. It has also begun to fill data gaps and start implementing management actions in the Forebay Subbasin GSP.

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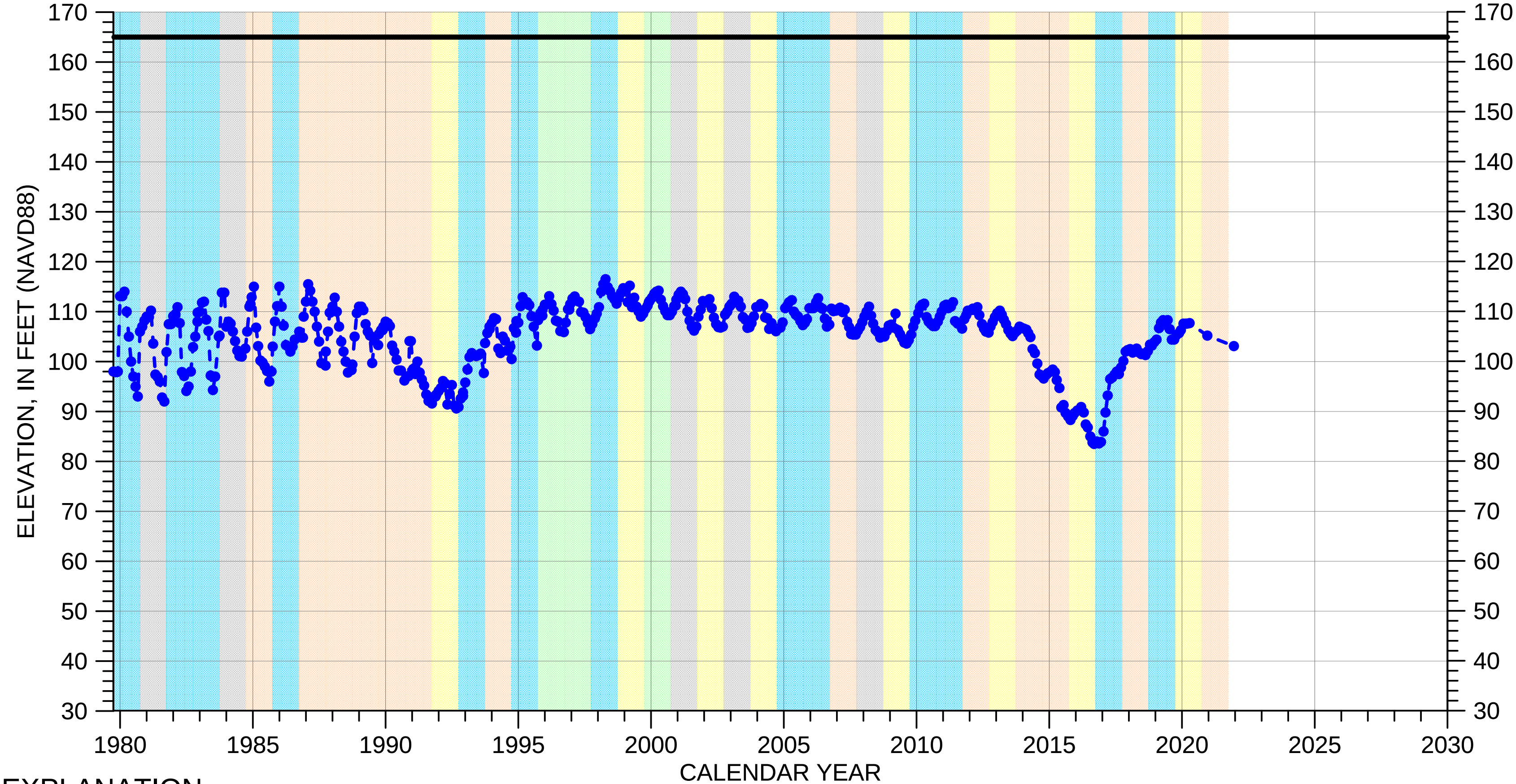
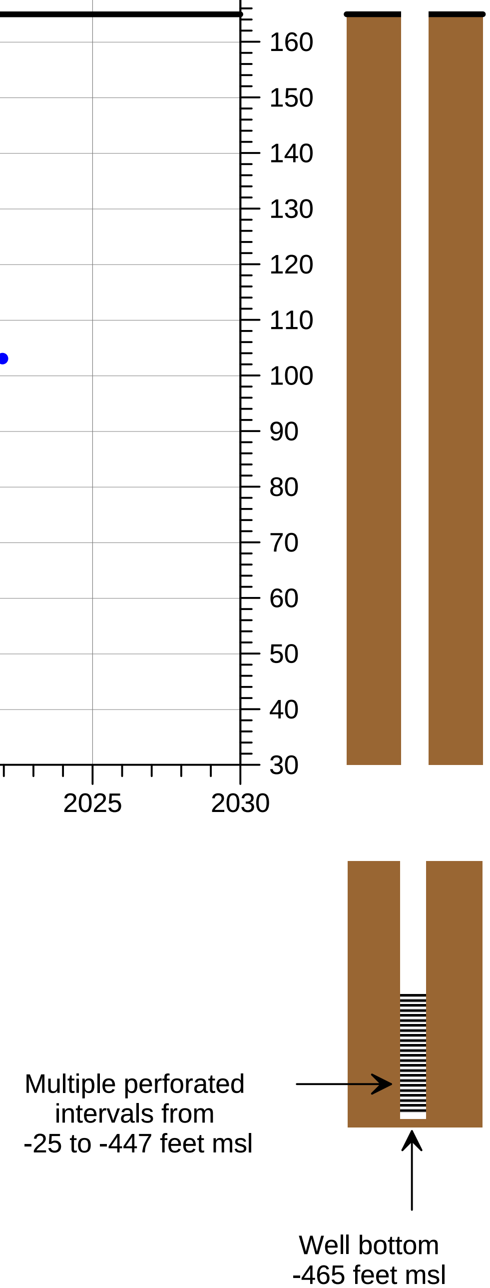
APPENDIX A. HYDROGRAPHS OF REPRESENTATIVE MONITORING SITE WELLS

Appendix A. Hydrographs of Representative Monitoring Site Wells

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-02N04

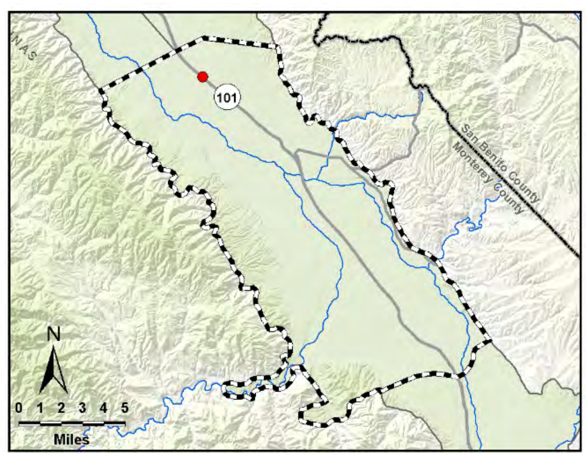
Forebay Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

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

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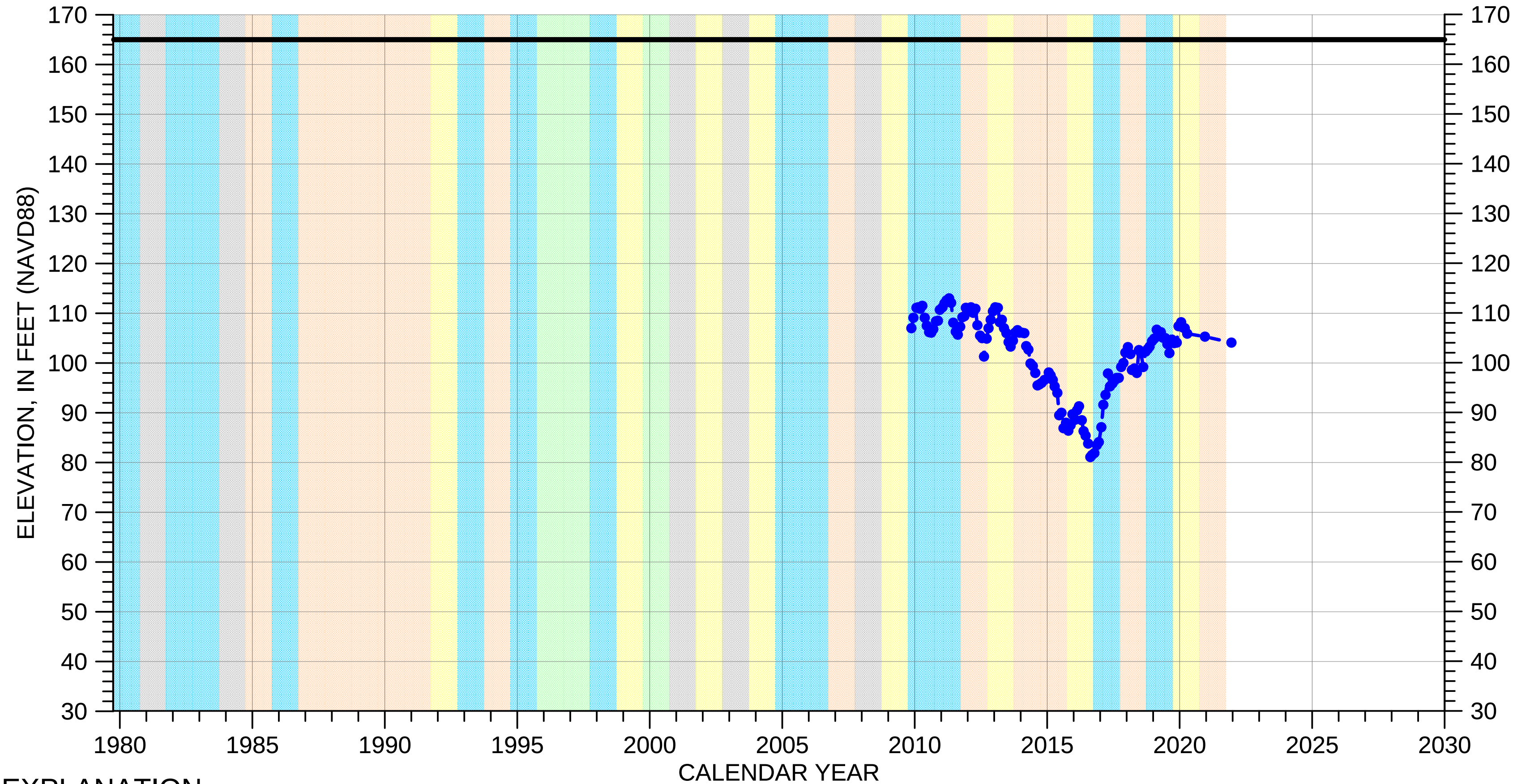
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-03R50

Forebay Aquifer Subbasin



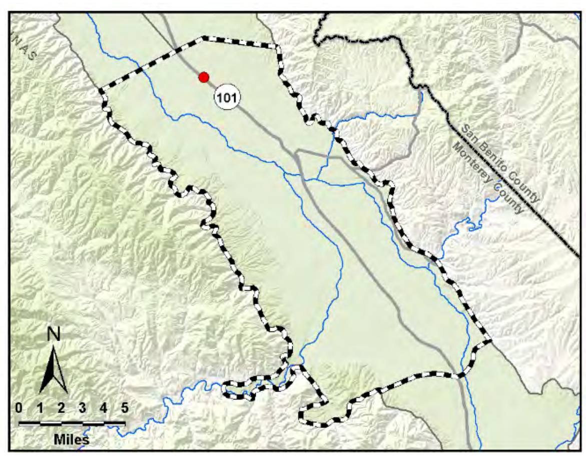
Perforated interval unknown

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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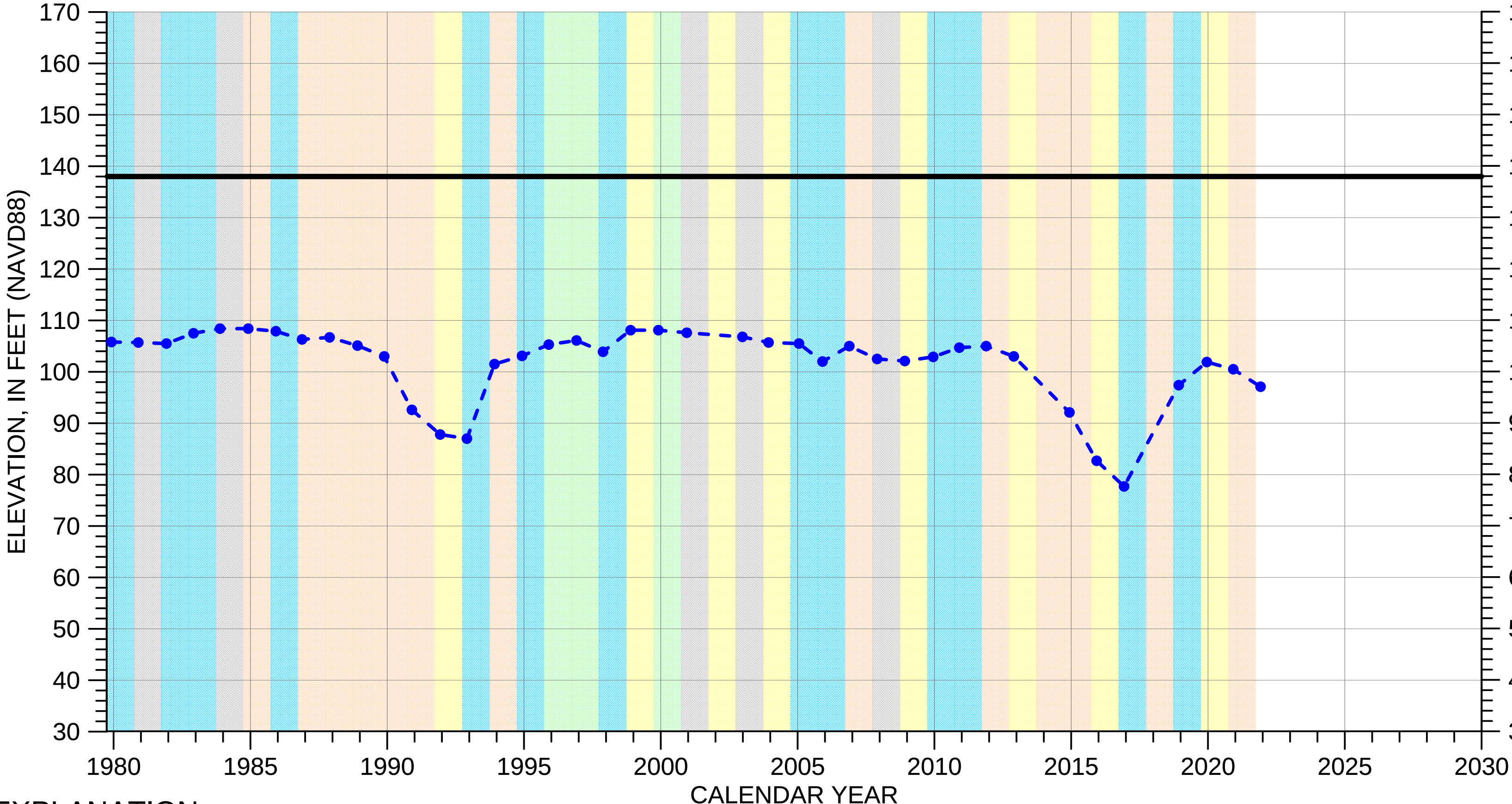
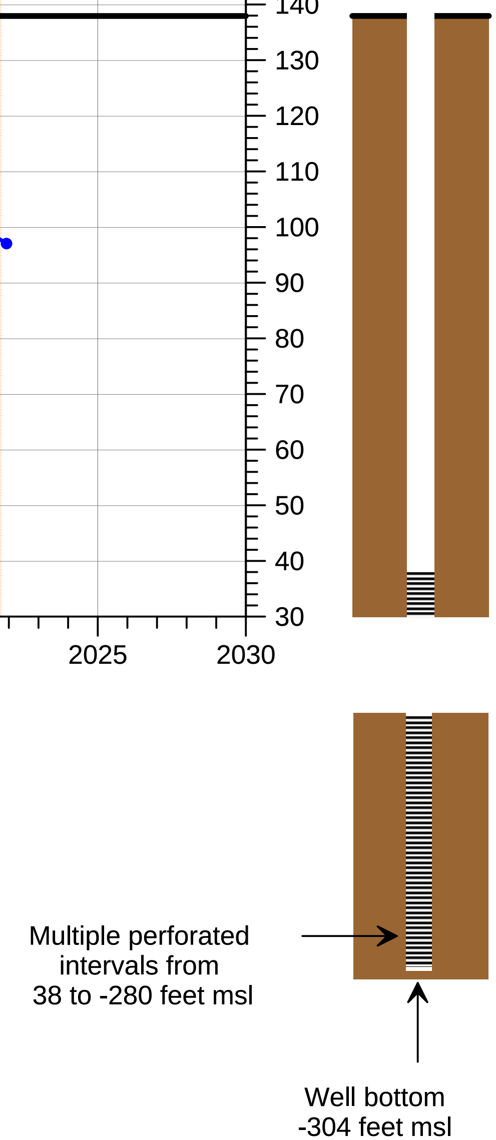
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-04R01

Forebay Aquifer Subbasin



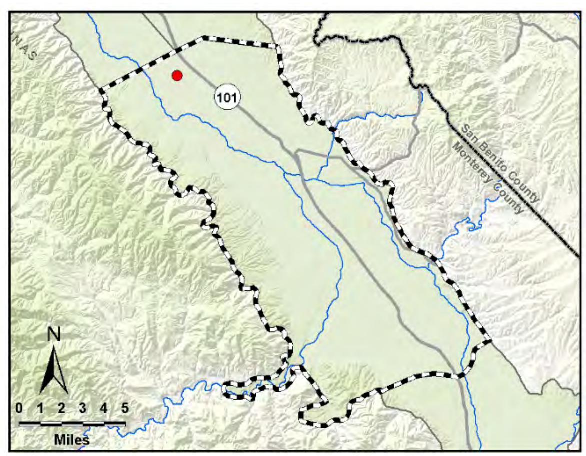


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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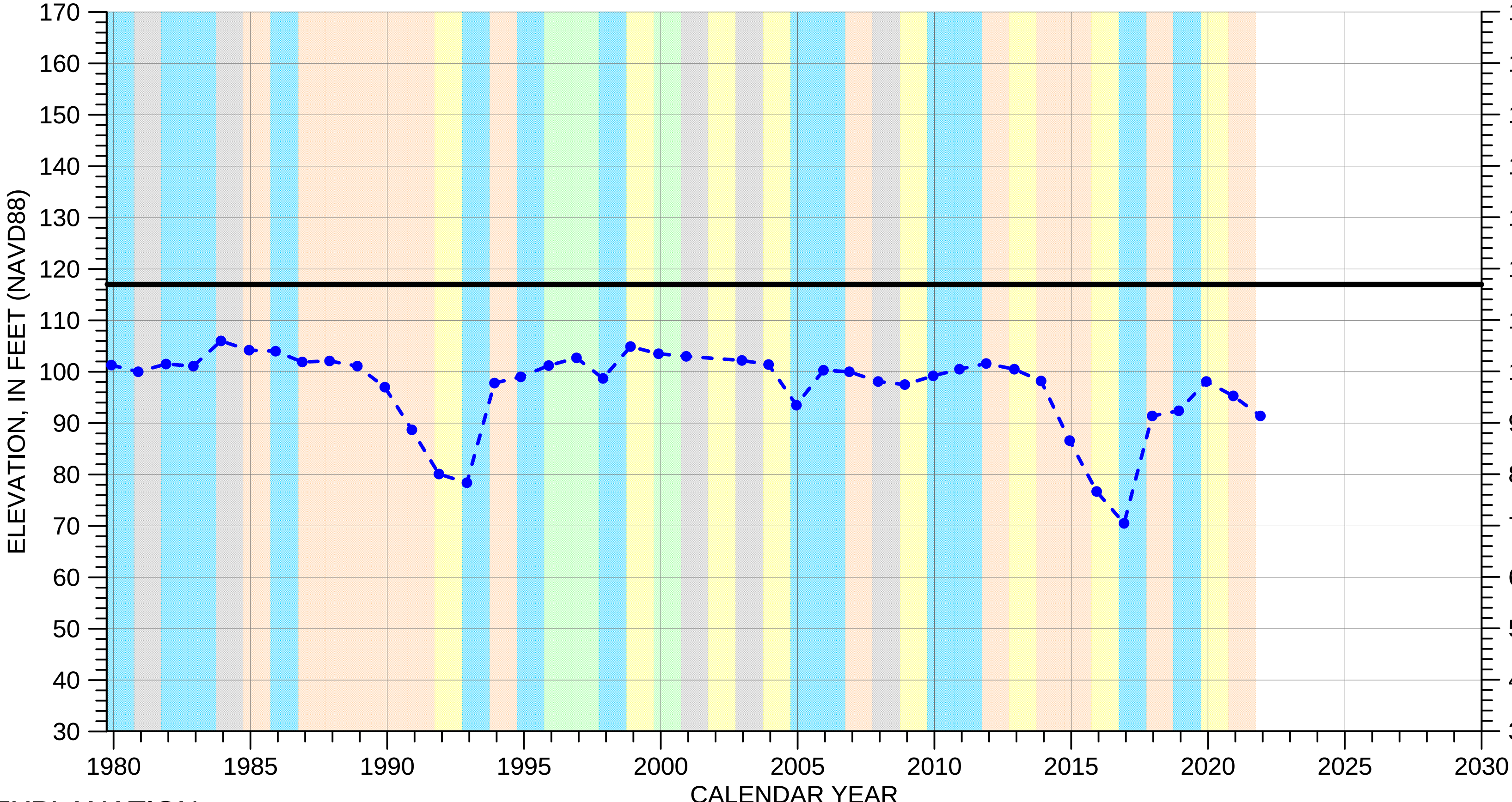
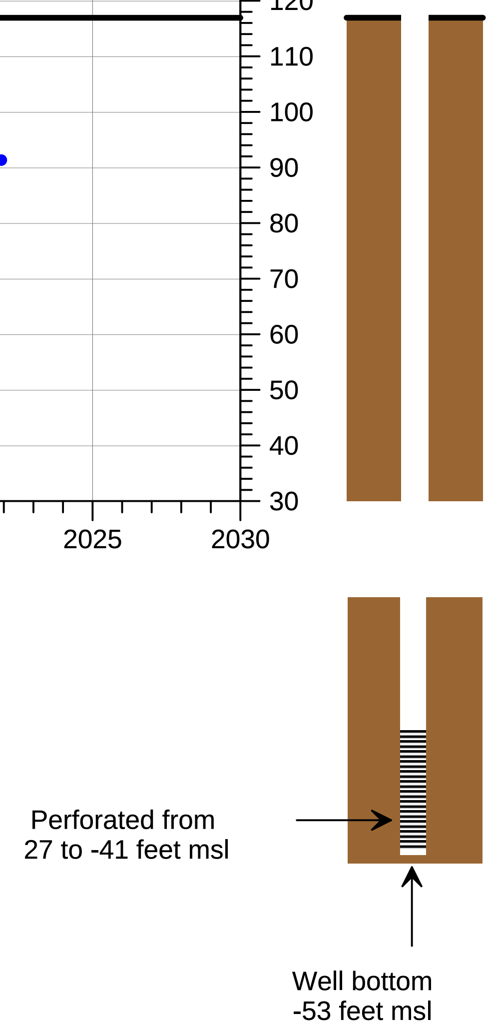
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-06Q01

Forebay Aquifer Subbasin





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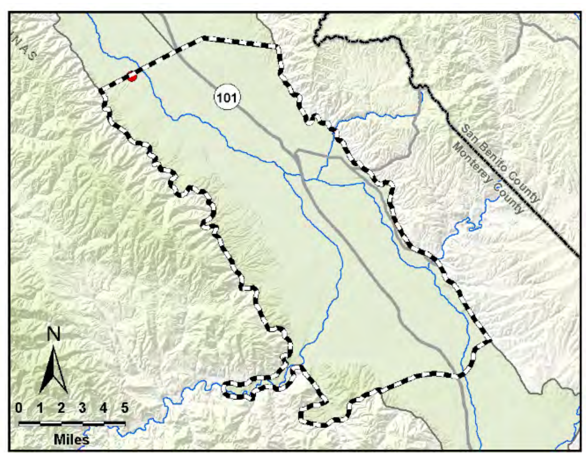
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

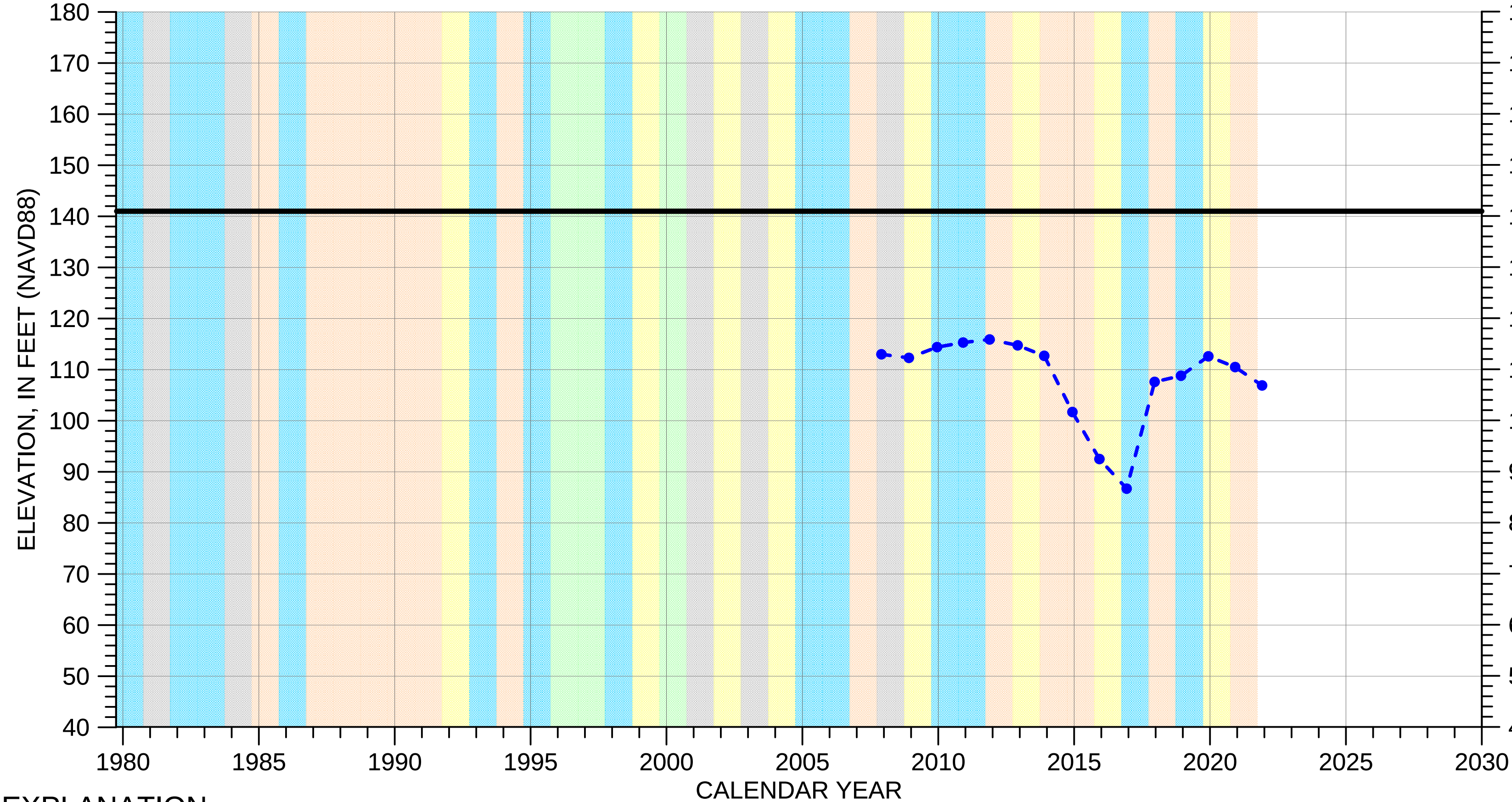


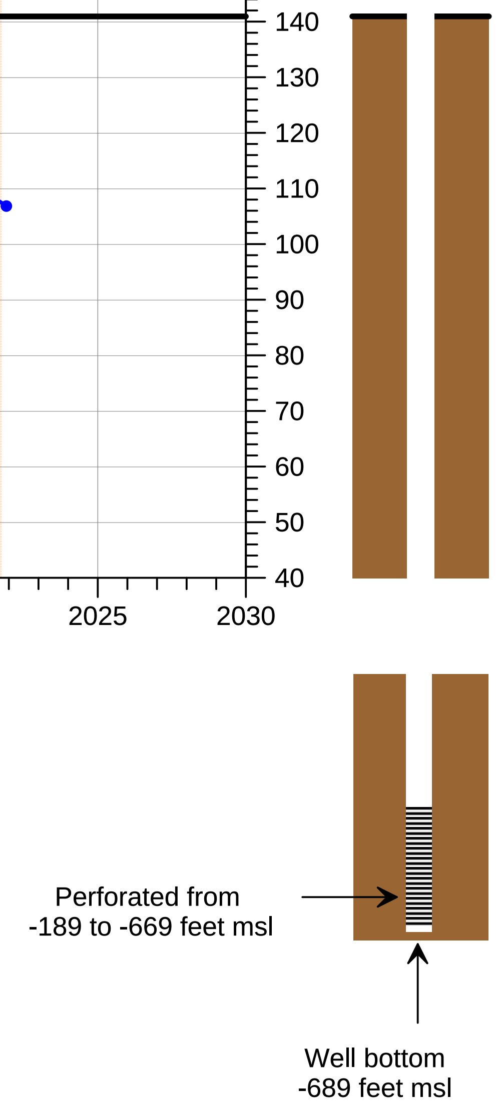
WATER YEAR TYPE DESIGNATION

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

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-08L02

Forebay Aquifer Subbasin





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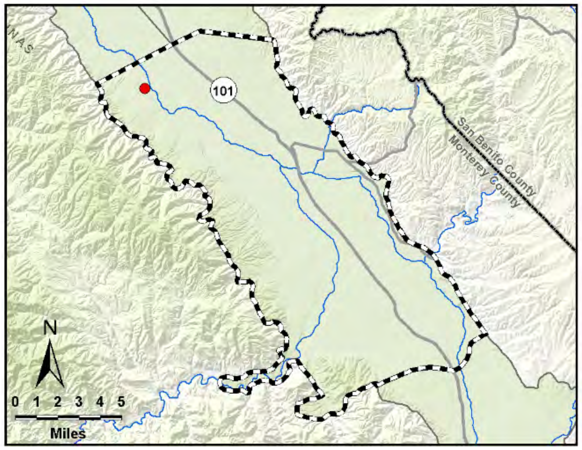
EXPLANATION

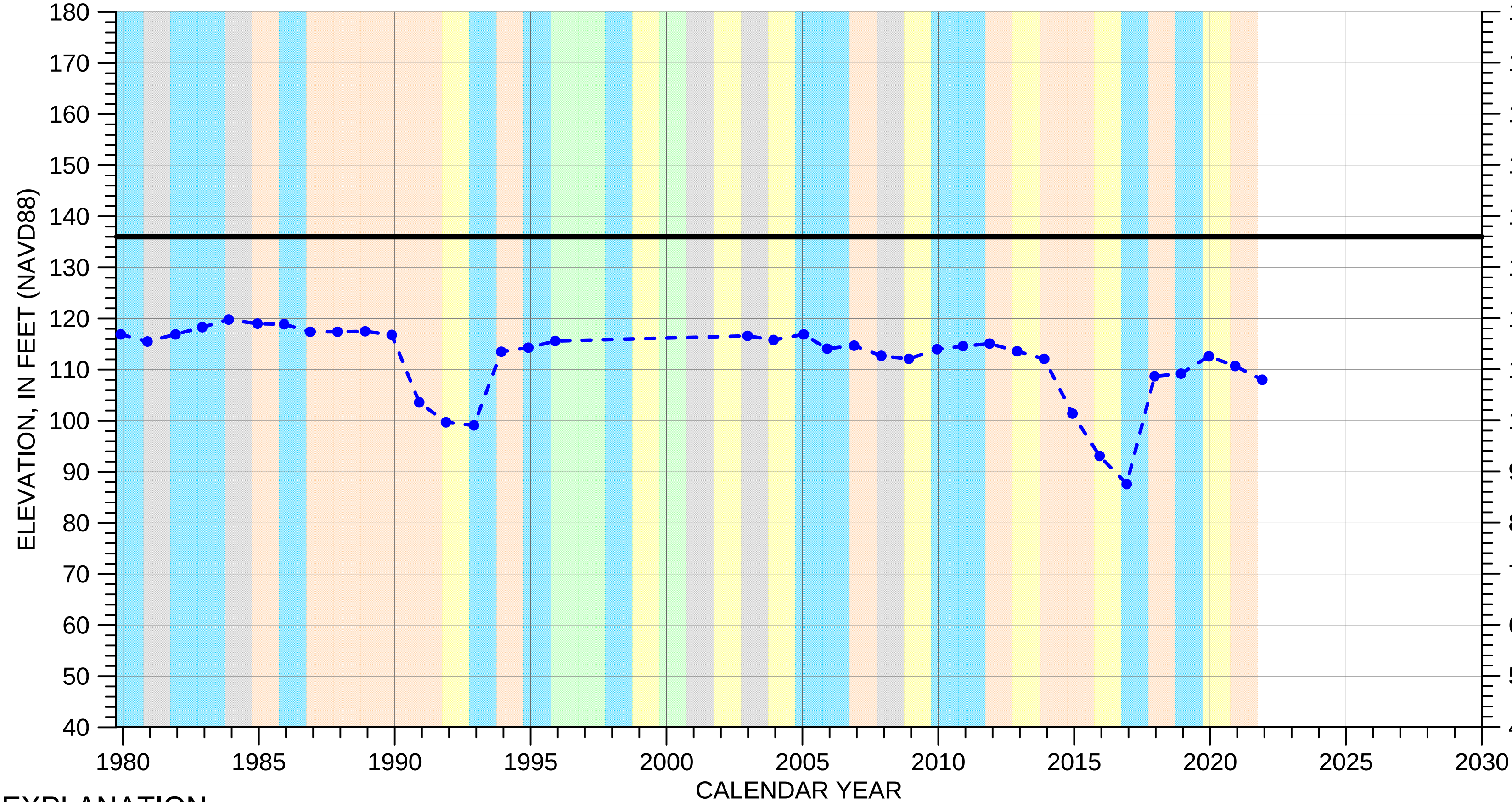
- Groundwater Elevation
- Suspect Measurement
- Land Surface

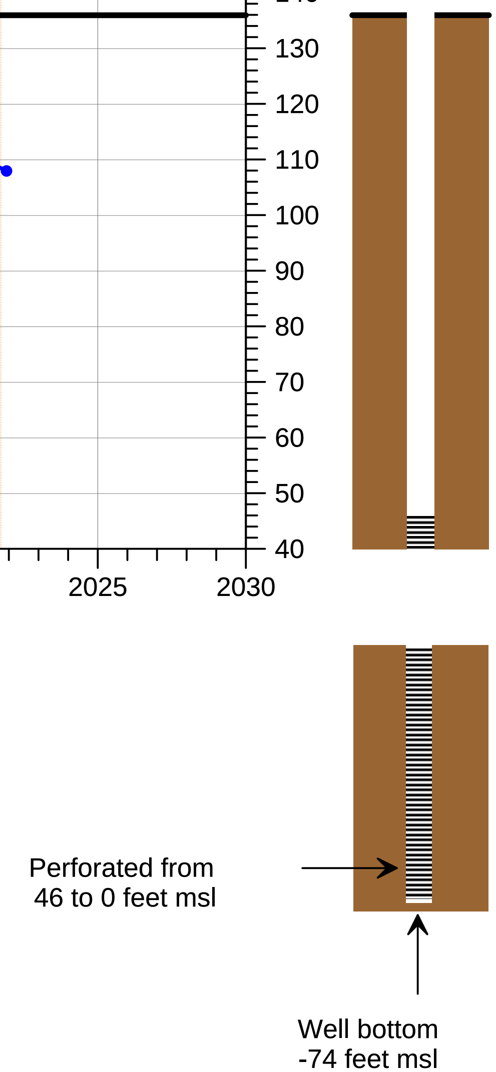
WATER YEAR TYPE DESIGNATION

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



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-09R01 Forebay Aquifer Subbasin



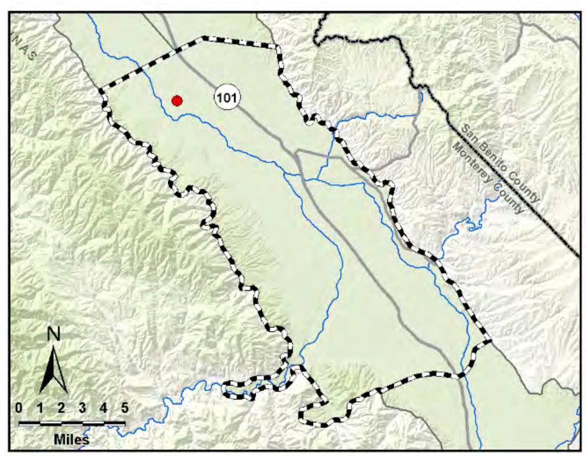


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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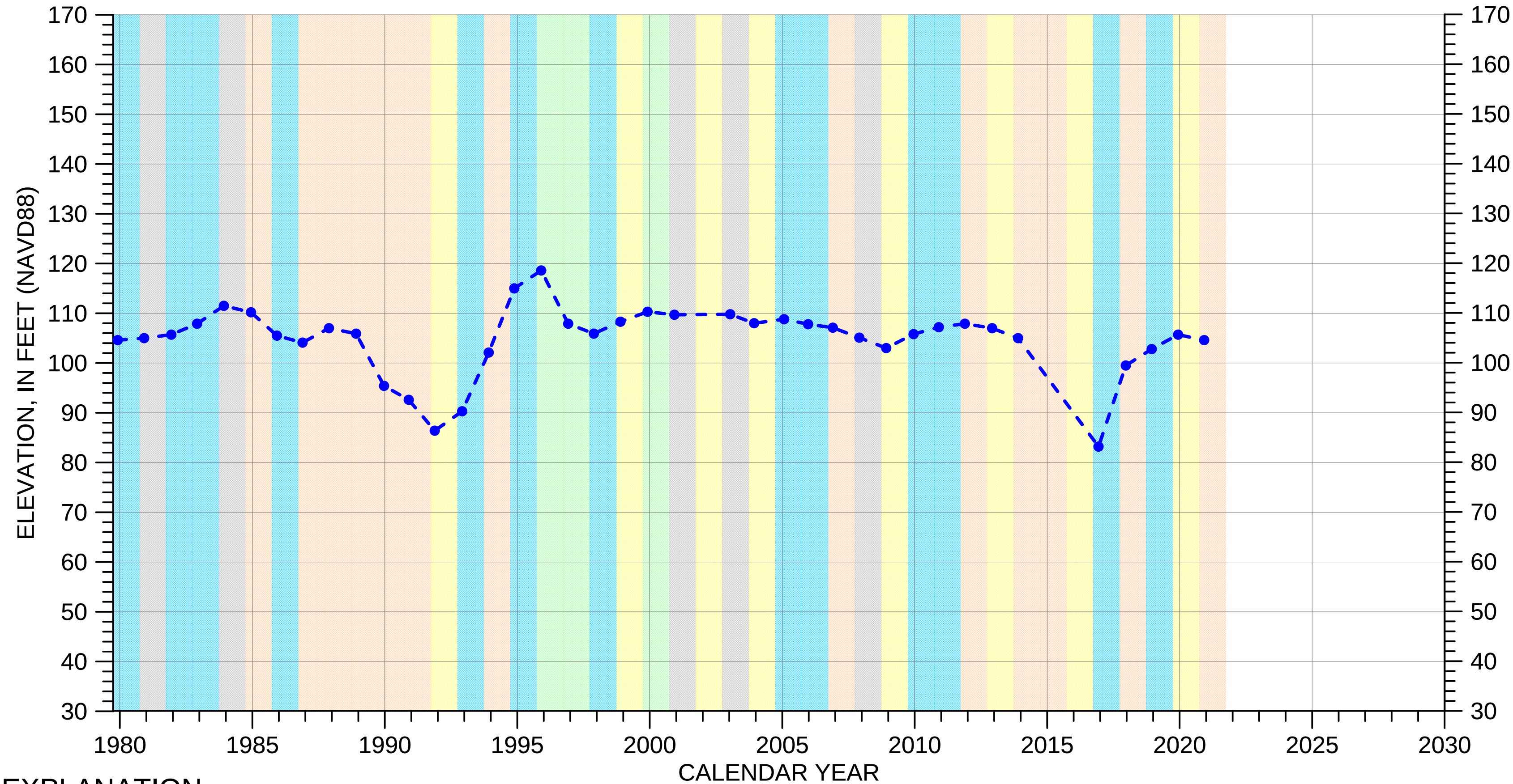
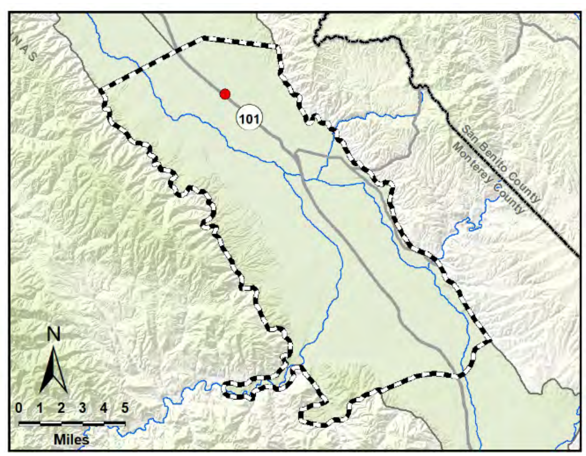
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-12E01

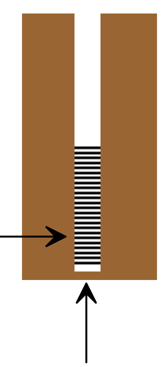
Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (171 FT MSL)





WATER YEAR TYPE DESIGNATION

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

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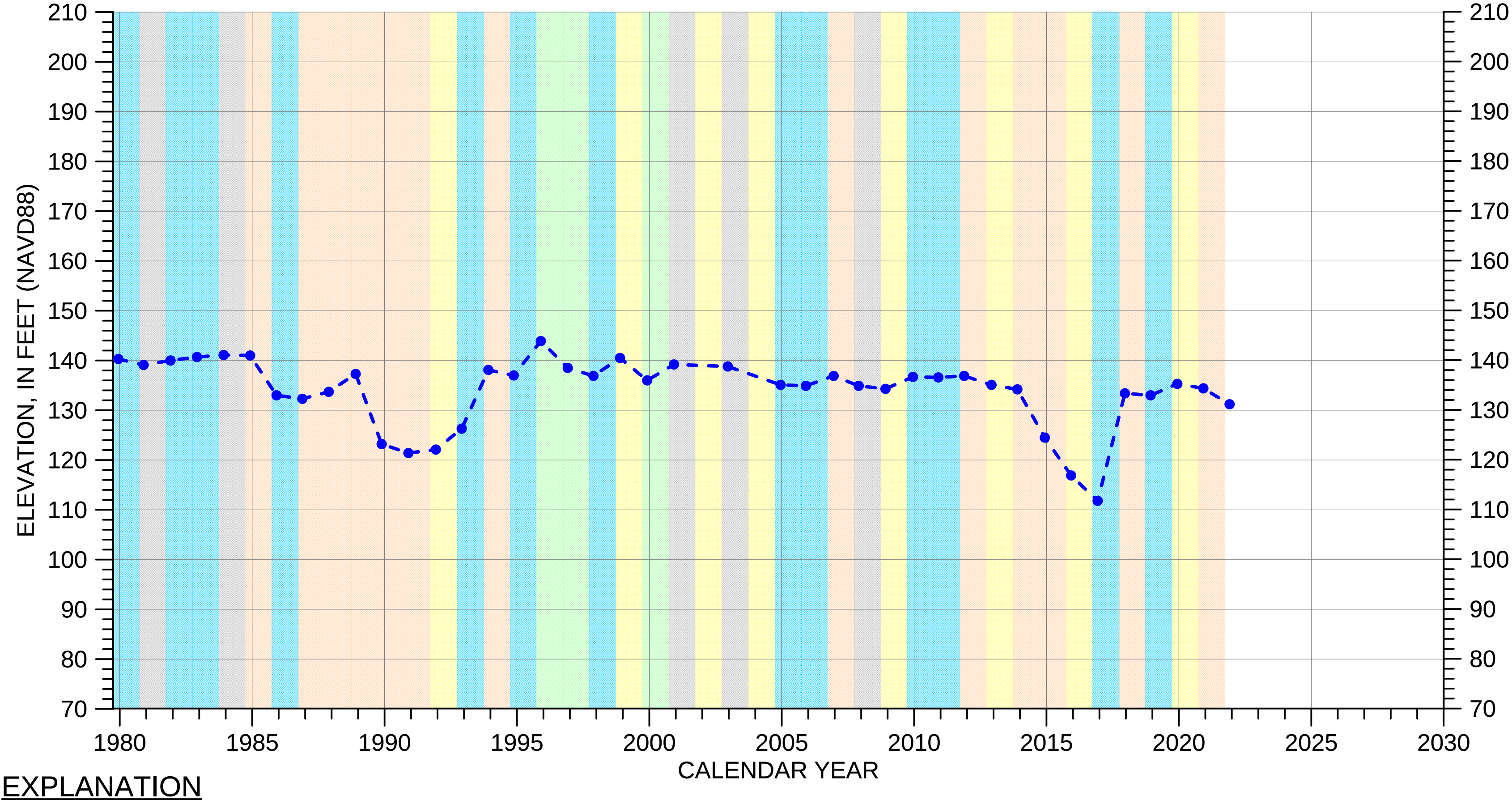
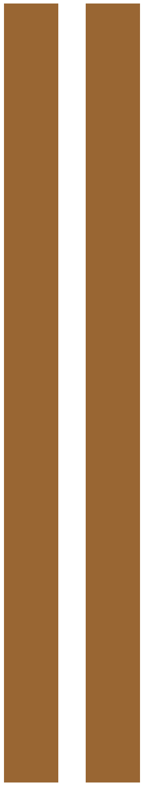
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-27A01

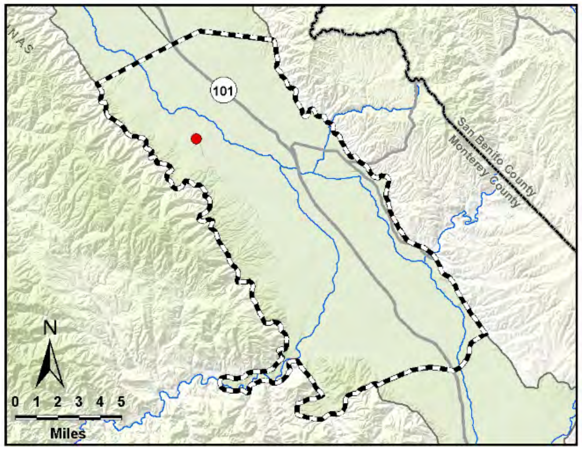
Forebay Aquifer Subbasin



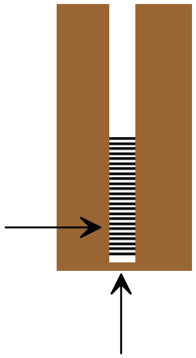


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (263 FT MSL)



Perforated from 41 to 7 feet msl



Well bottom -2 feet msl

WATER YEAR TYPE DESIGNATION

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

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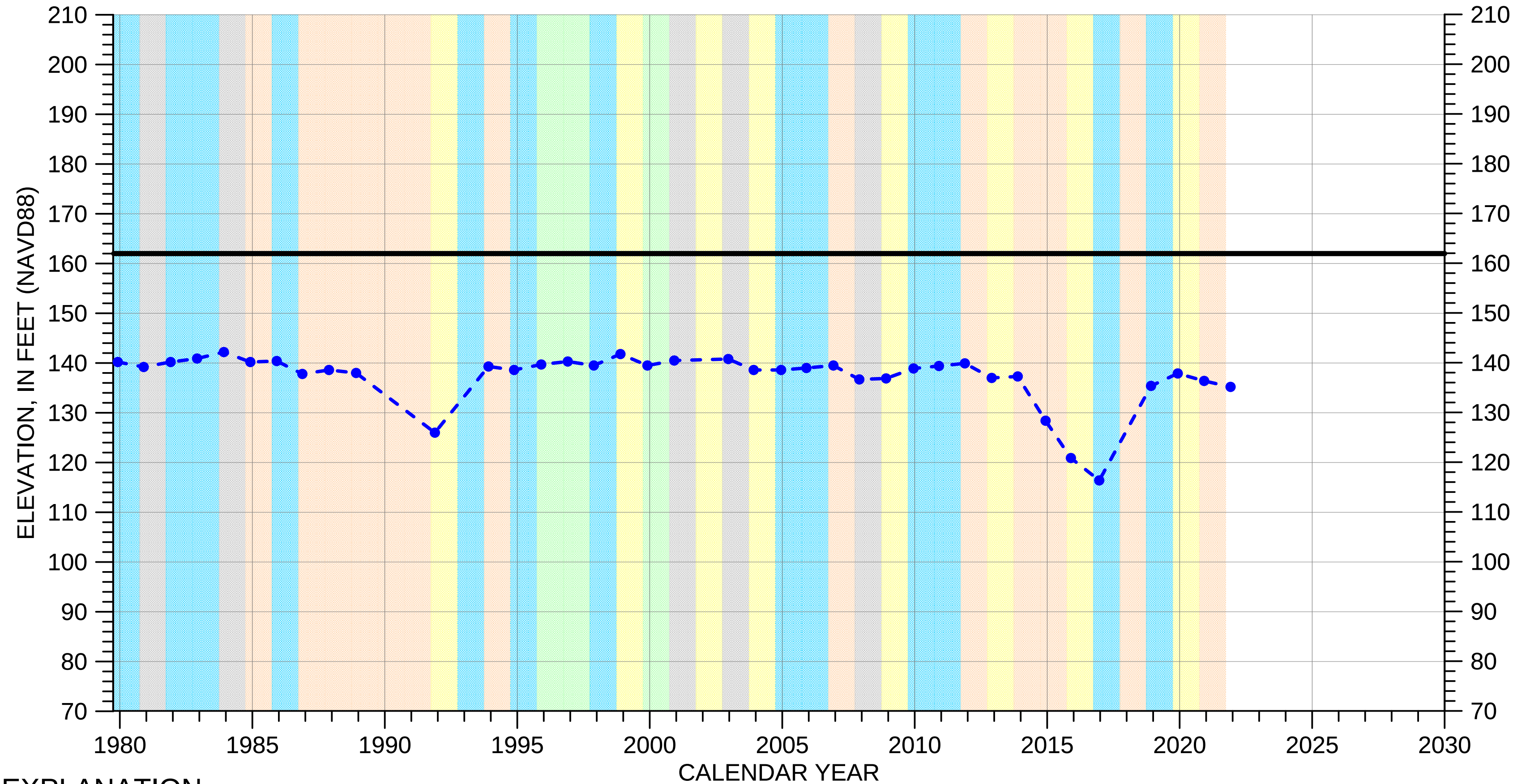
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-36F02

Forebay Aquifer Subbasin

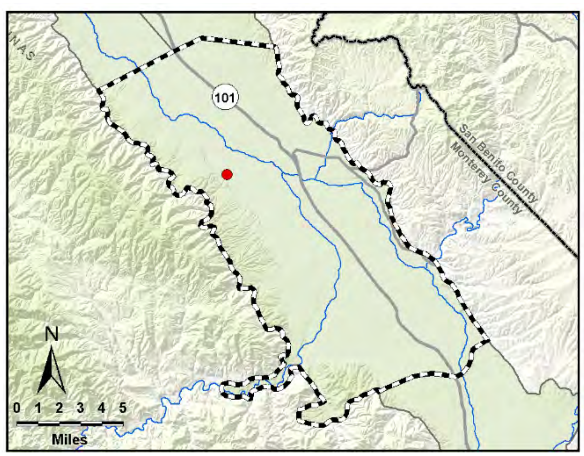


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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

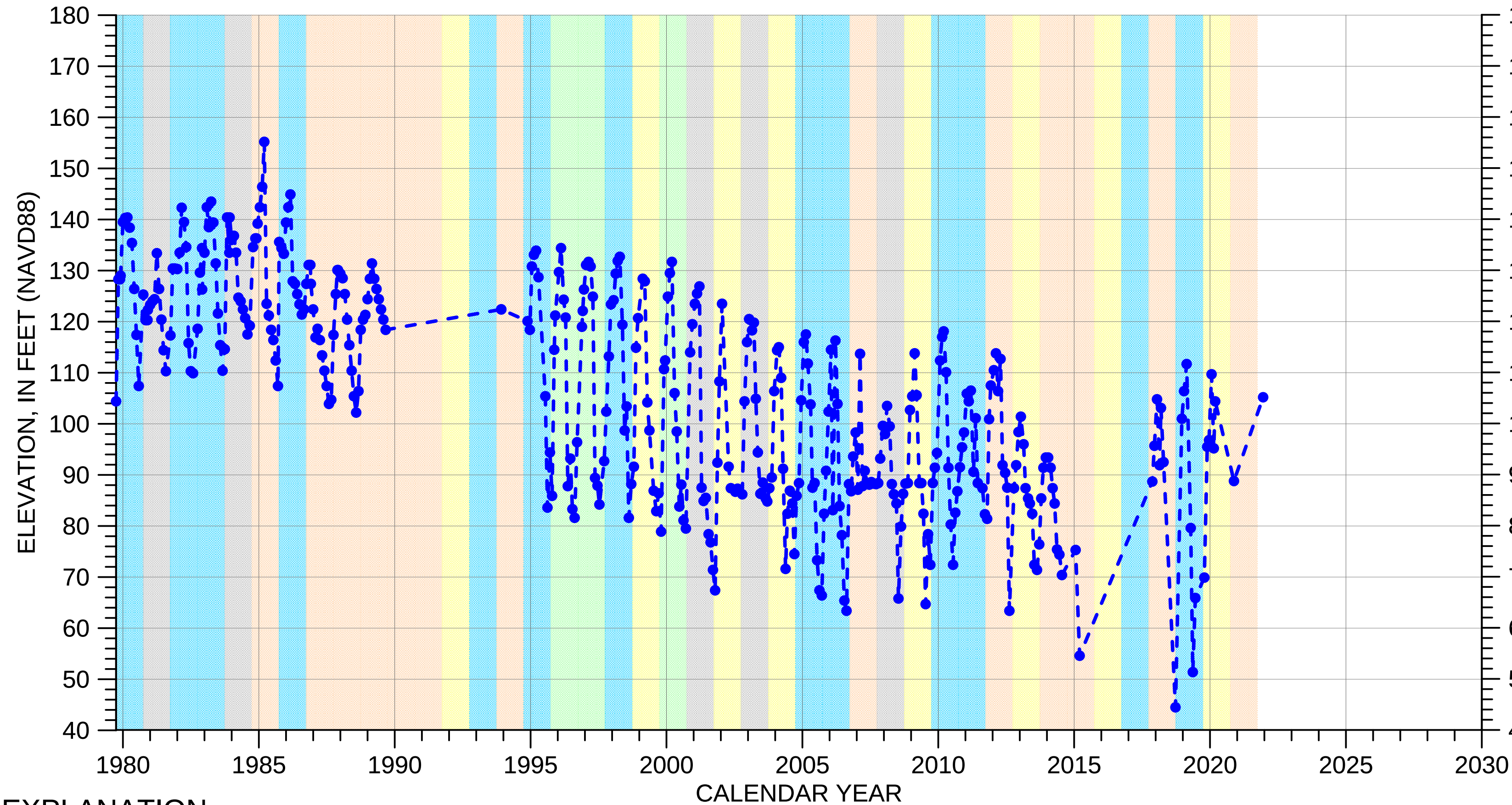


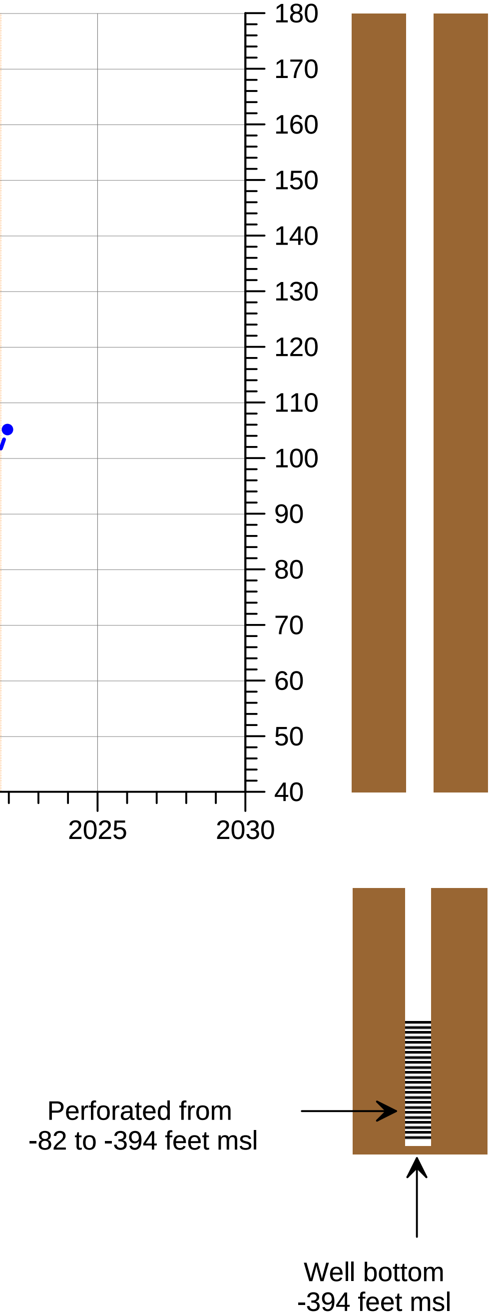
Multiple perforated intervals from 82 to -8 feet msl

Well bottom -72 feet msl

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-16N01

Forebay Aquifer Subbasin



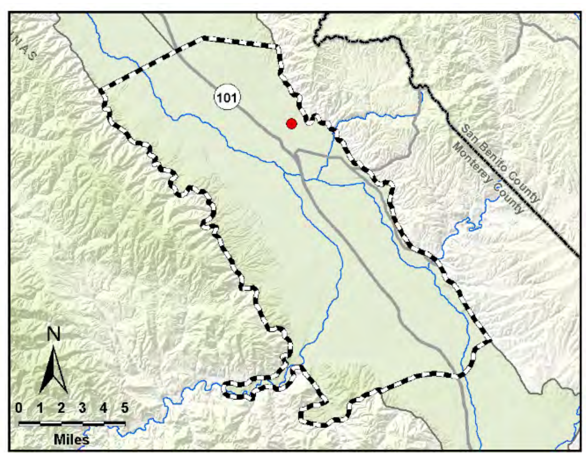


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (232 FT MSL)

WATER YEAR TYPE DESIGNATION

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



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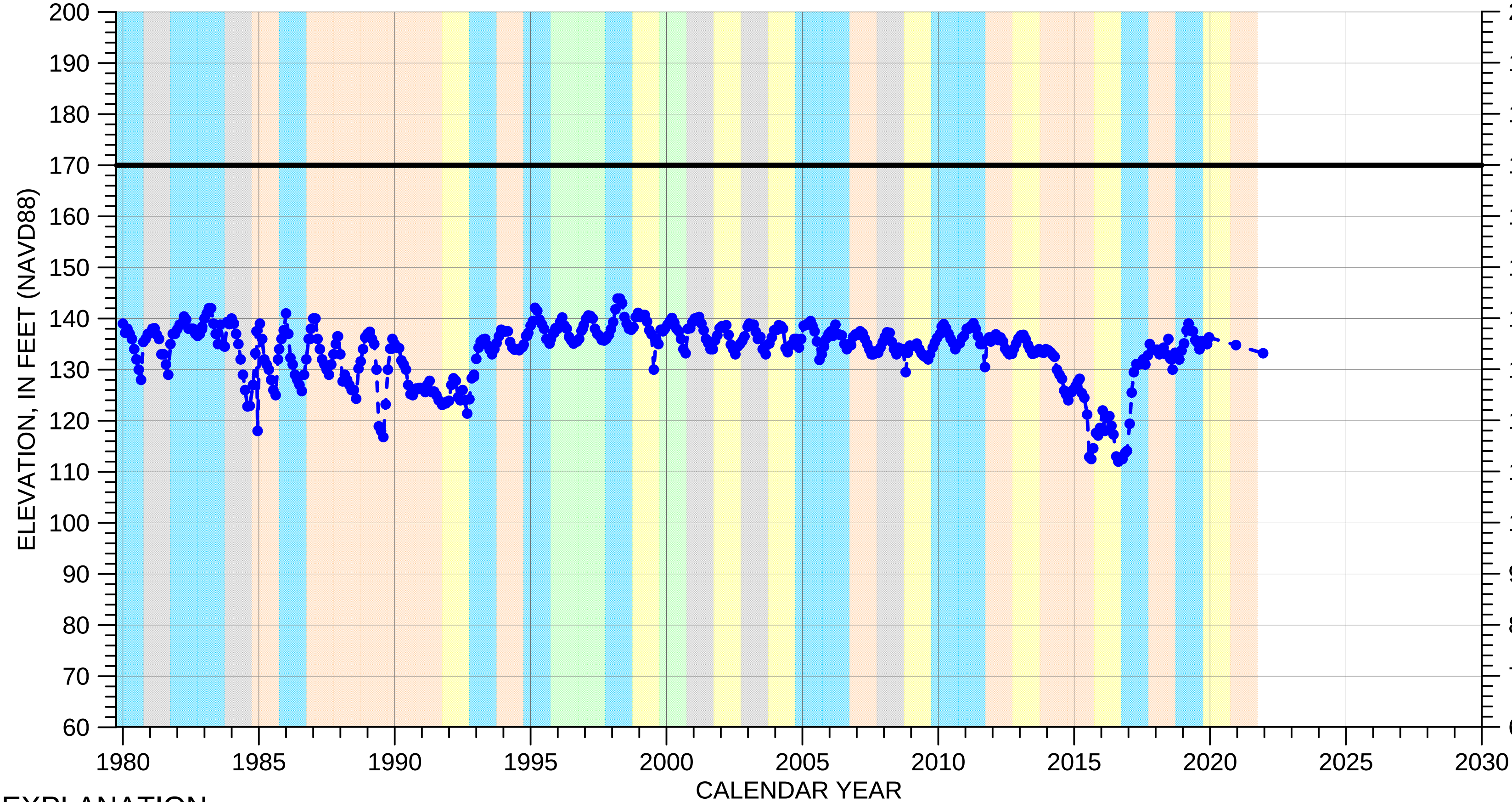
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-19D01

Forebay Aquifer Subbasin

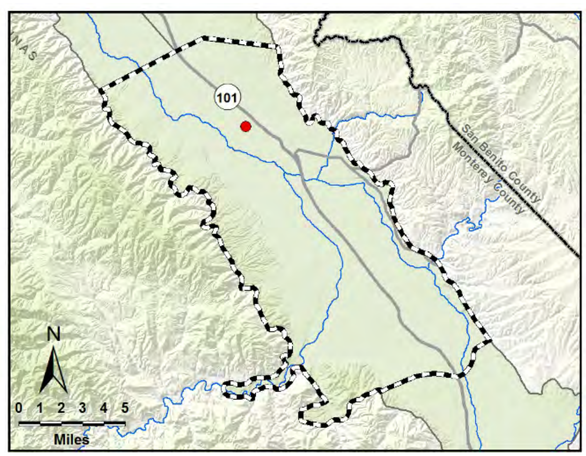


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

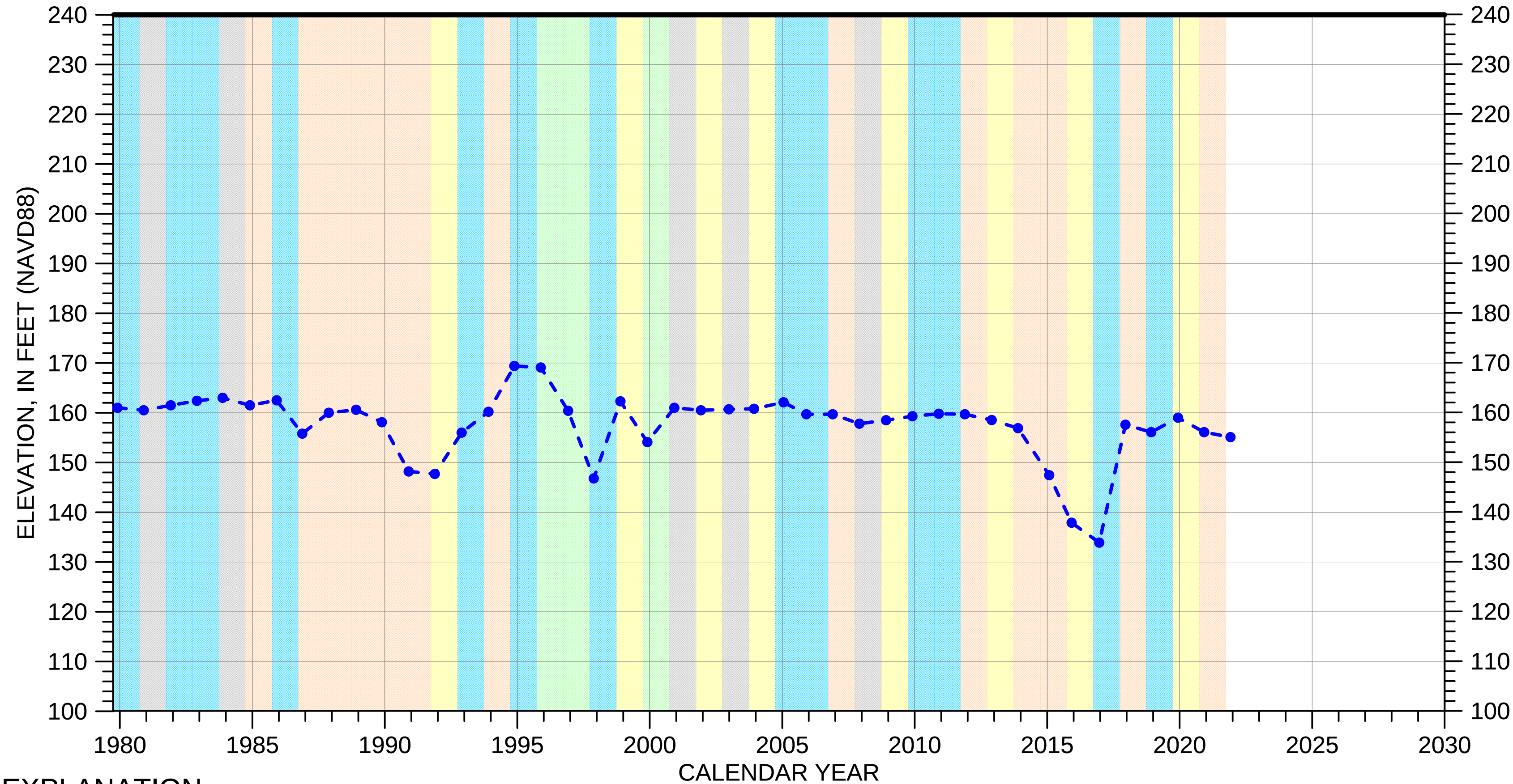
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\17S_06E-19D01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-27K01

Forebay Aquifer Subbasin



Perforated interval unknown

Well bottom -10 feet msl

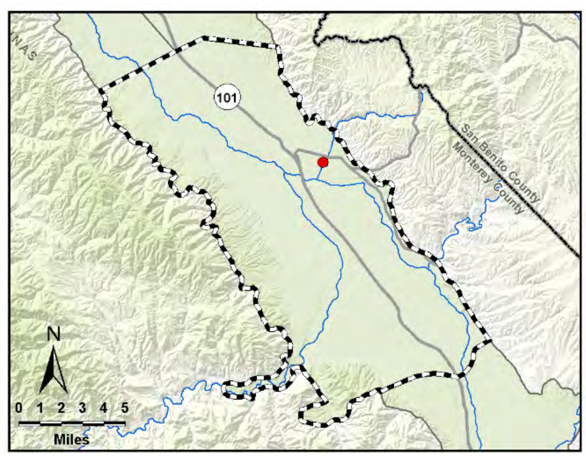
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\17S_06E-27K01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

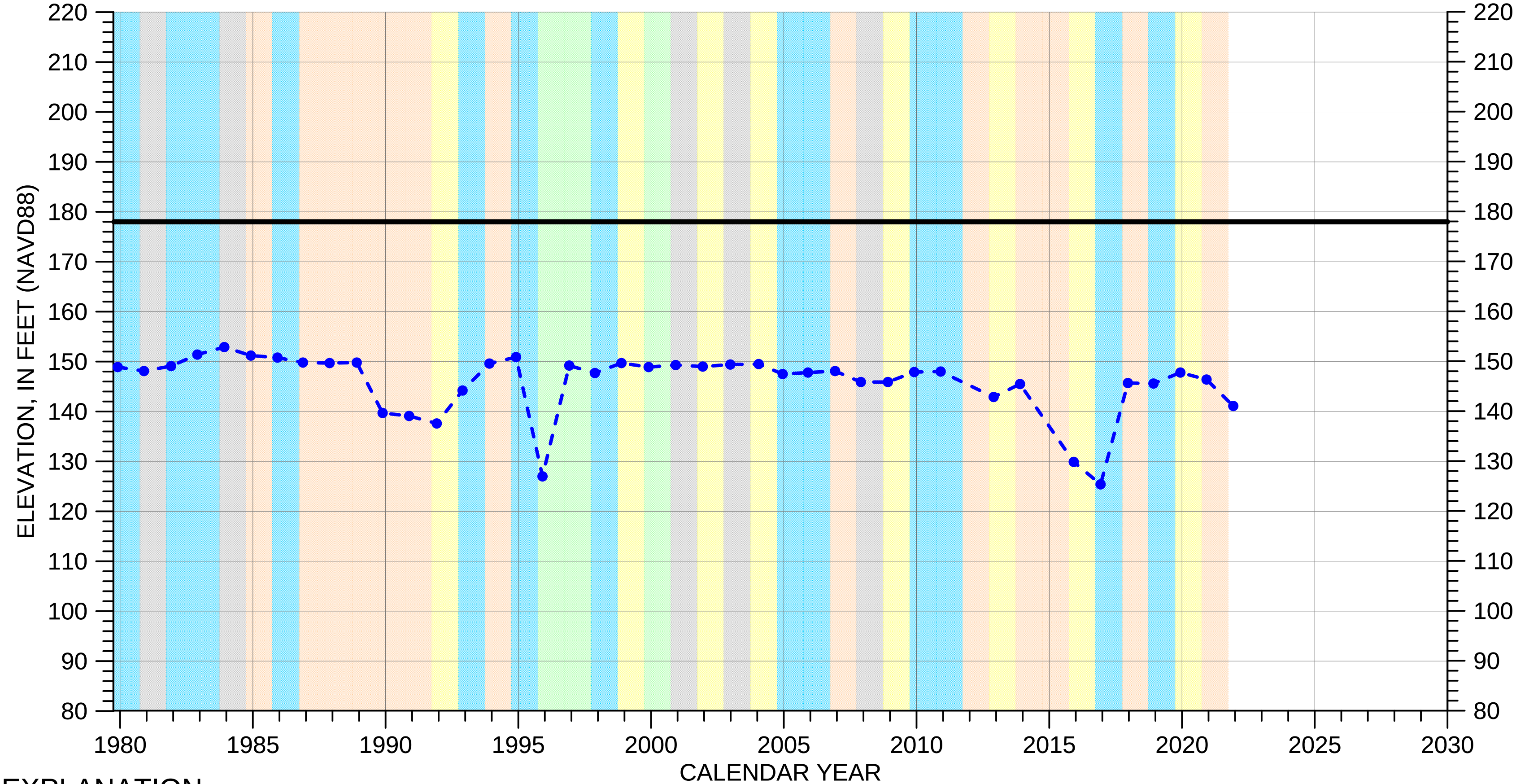
WATER YEAR TYPE DESIGNATION

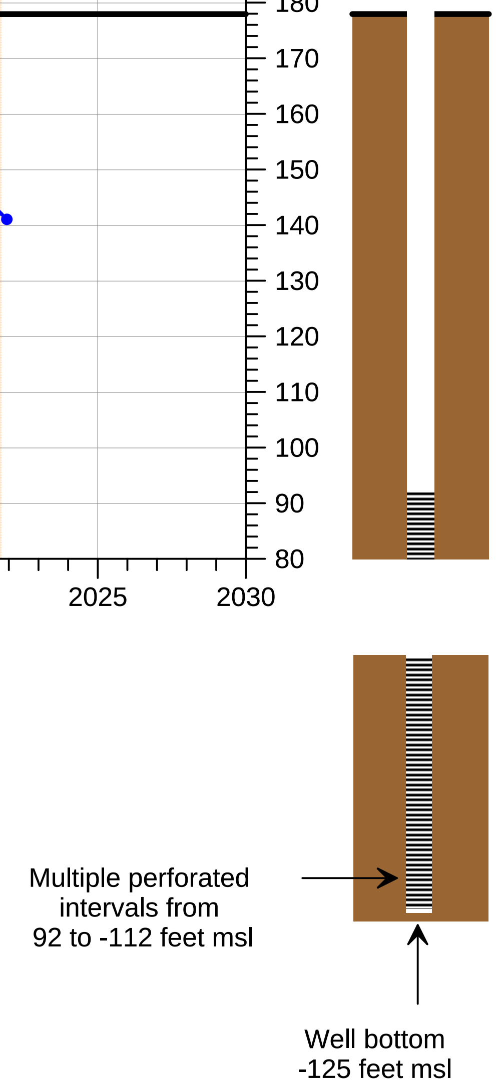
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-29C01

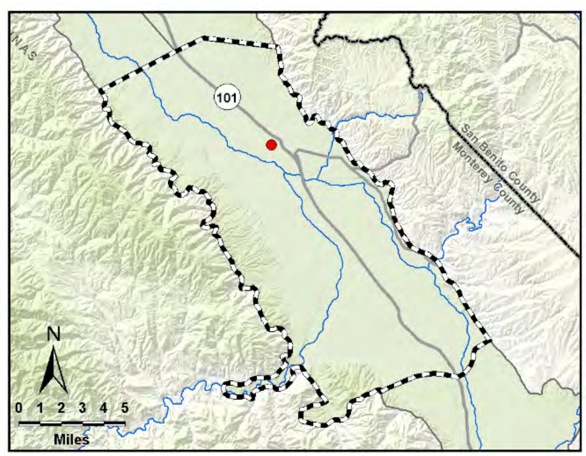
Forebay Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



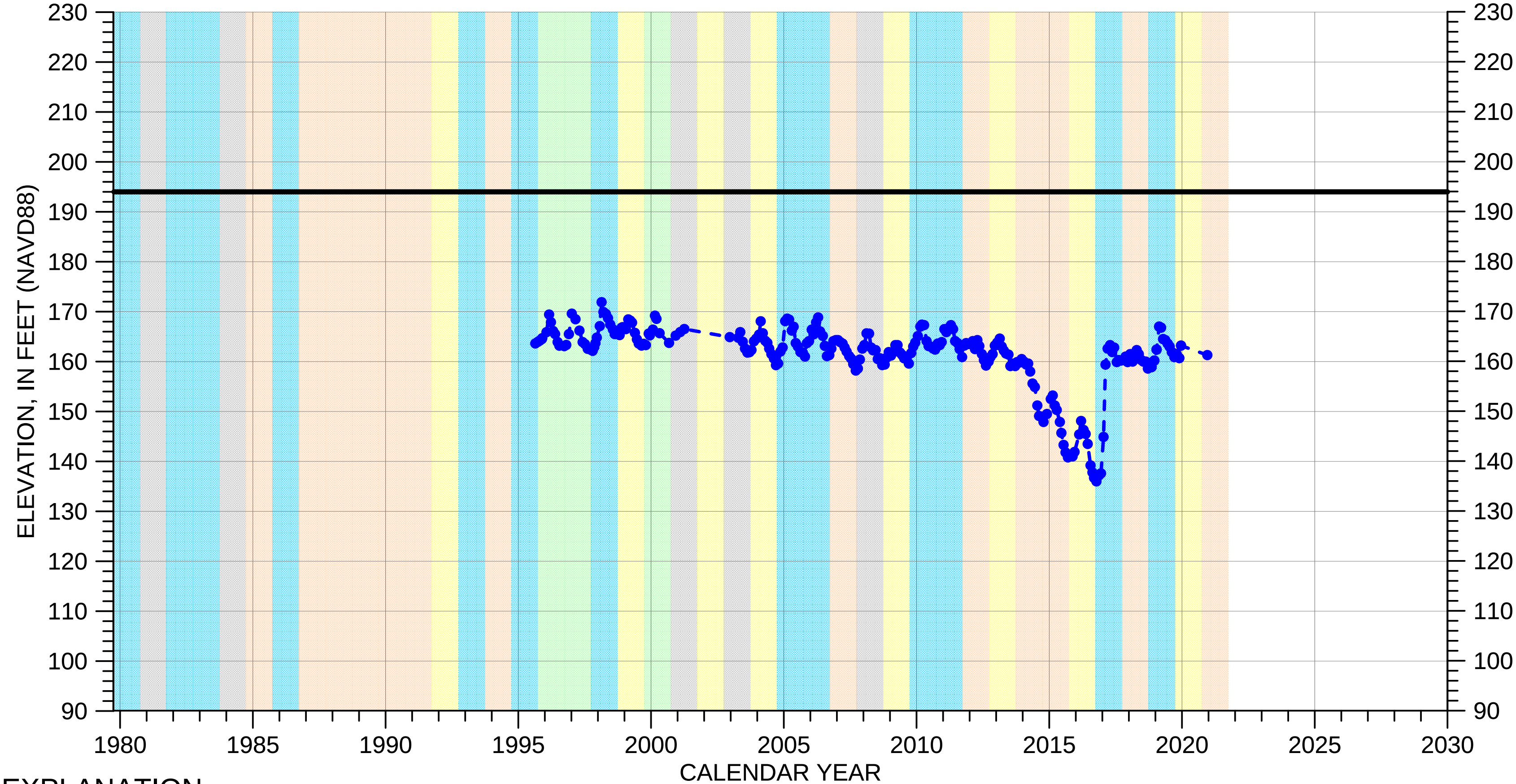
WATER YEAR TYPE DESIGNATION

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

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\17S_06E-29C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R01

Forebay Aquifer Subbasin

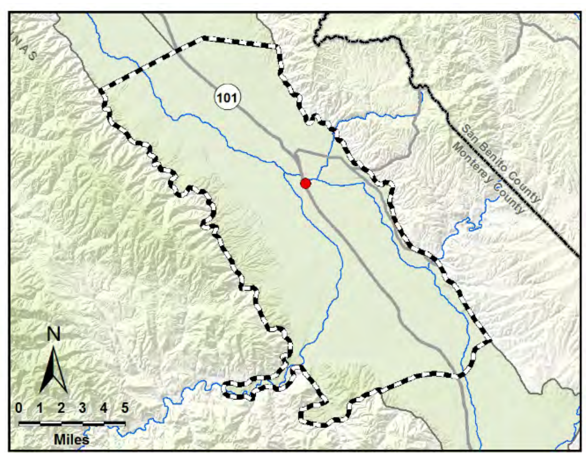


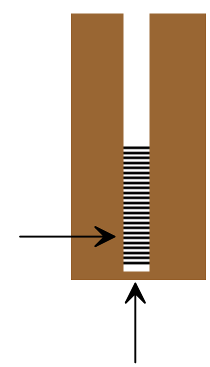
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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





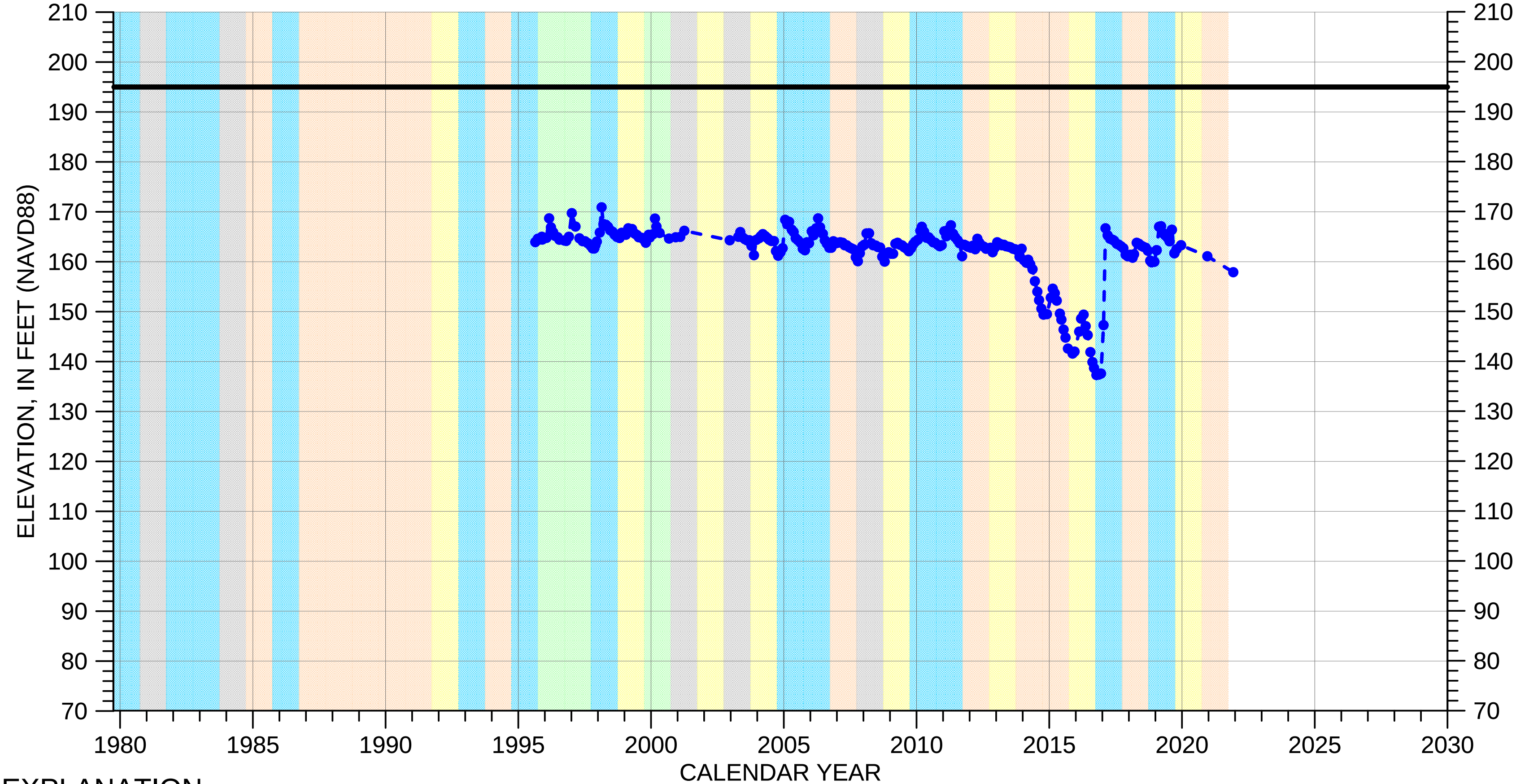
Perforated from
-6 to -56 feet msl

Well bottom
-66 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\17S_06E-33R01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R02

Forebay Aquifer Subbasin



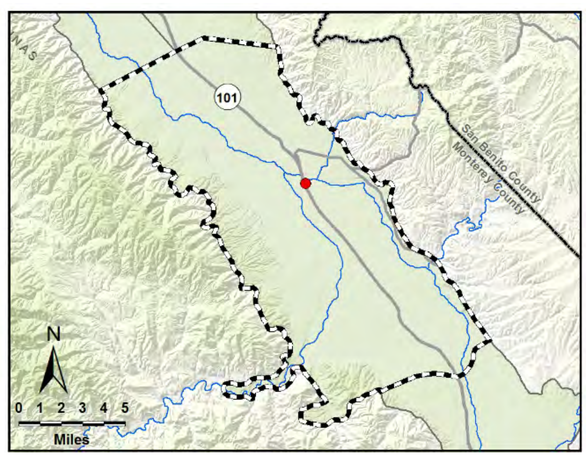
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\17S_06E-33R02.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

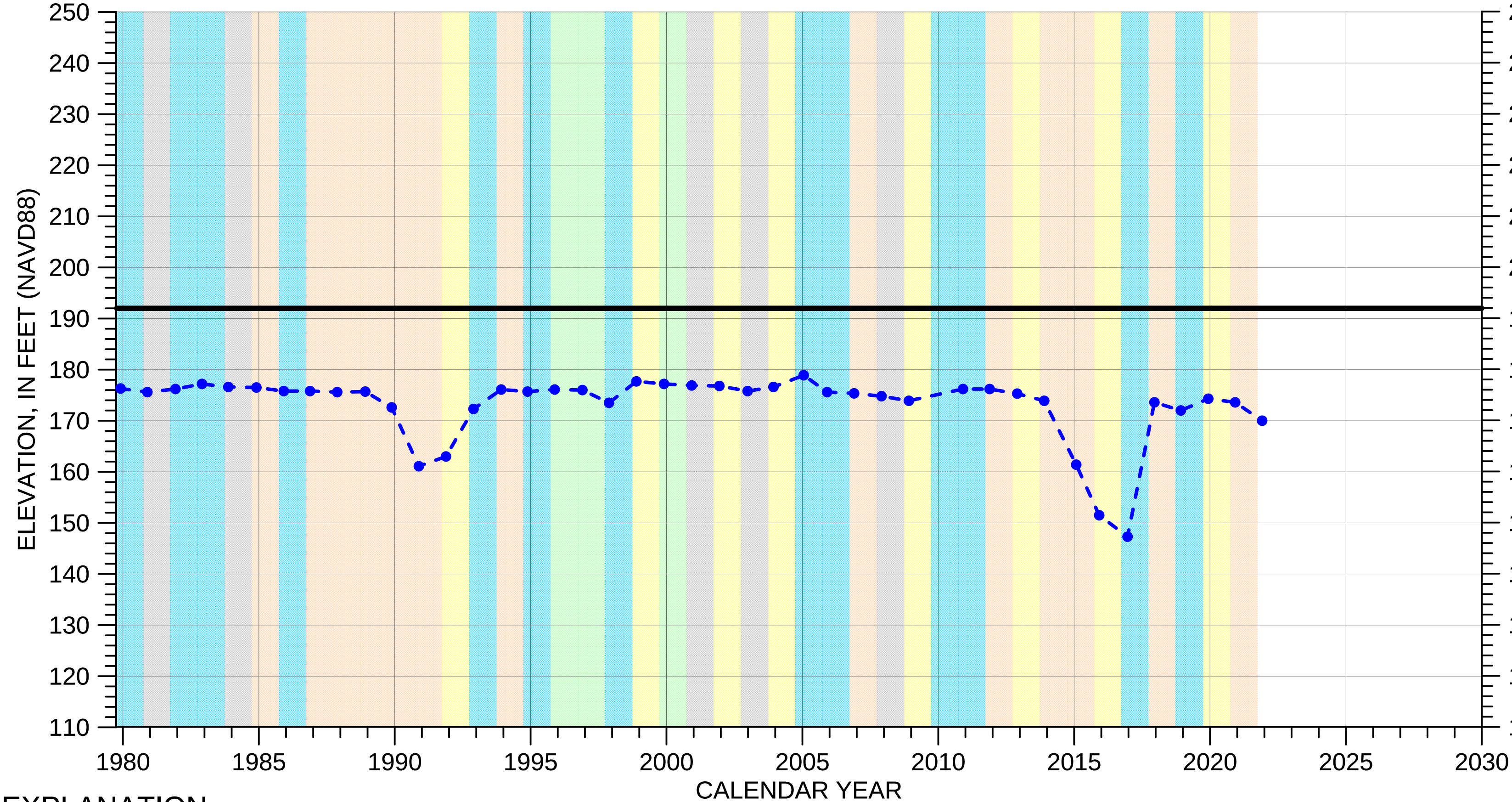
WATER YEAR TYPE DESIGNATION

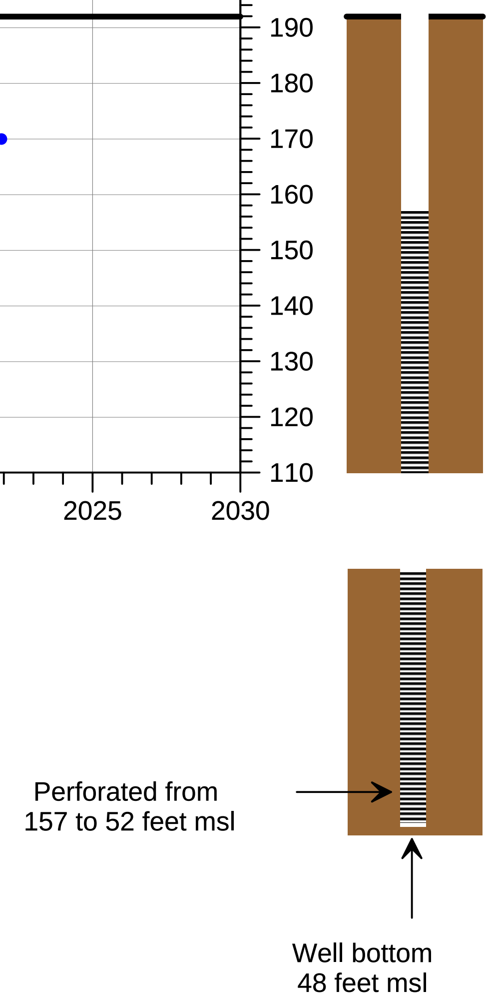
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-35J01

Forebay Aquifer Subbasin



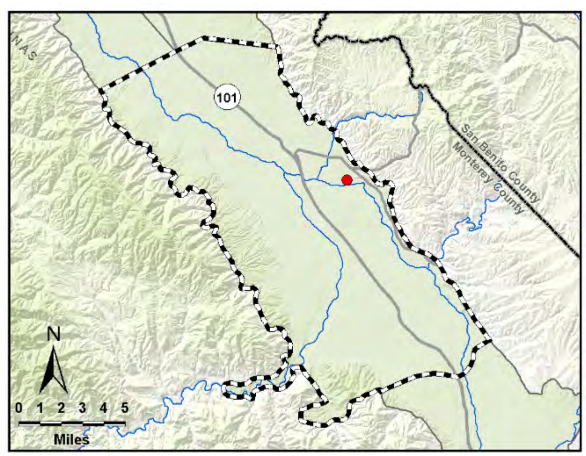


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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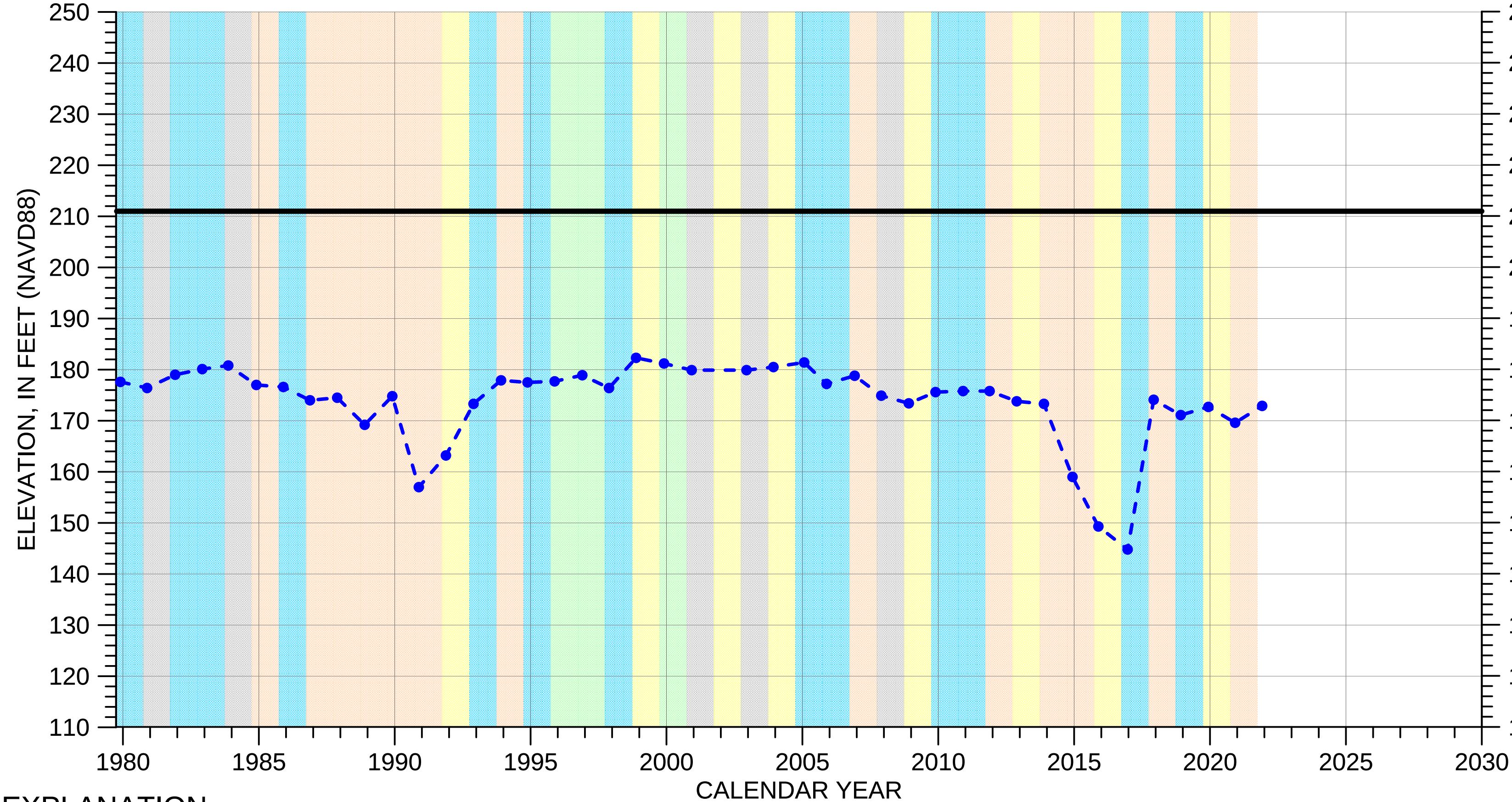
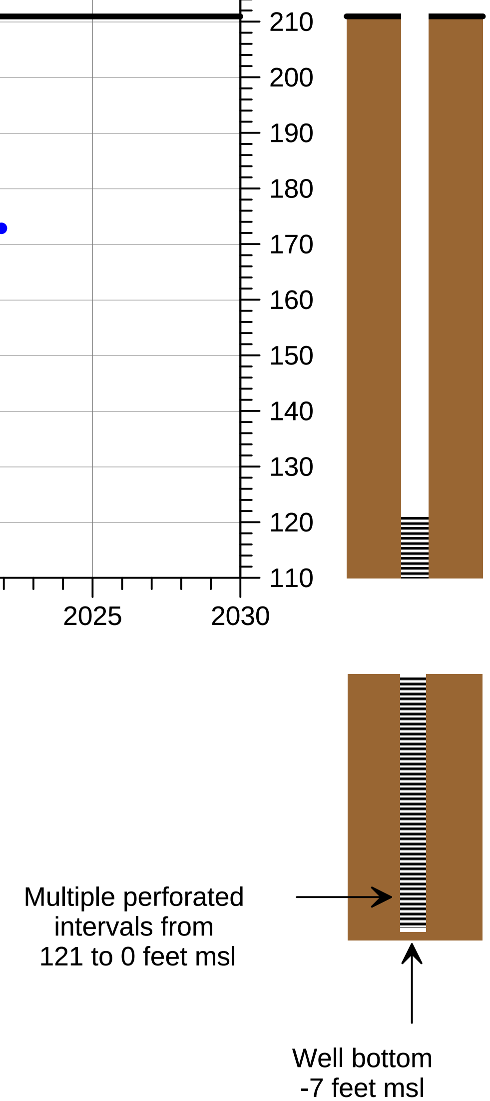
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-01E01

Forebay Aquifer Subbasin



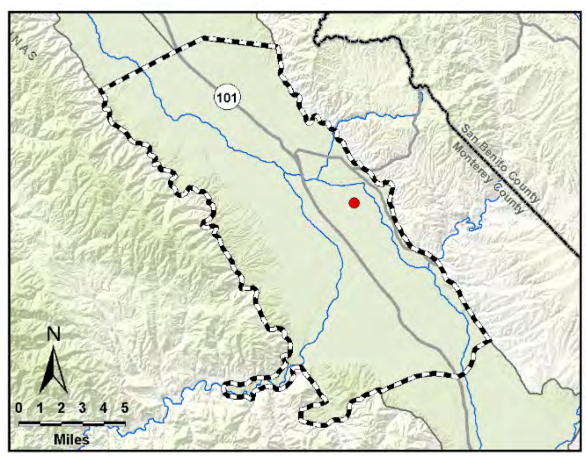


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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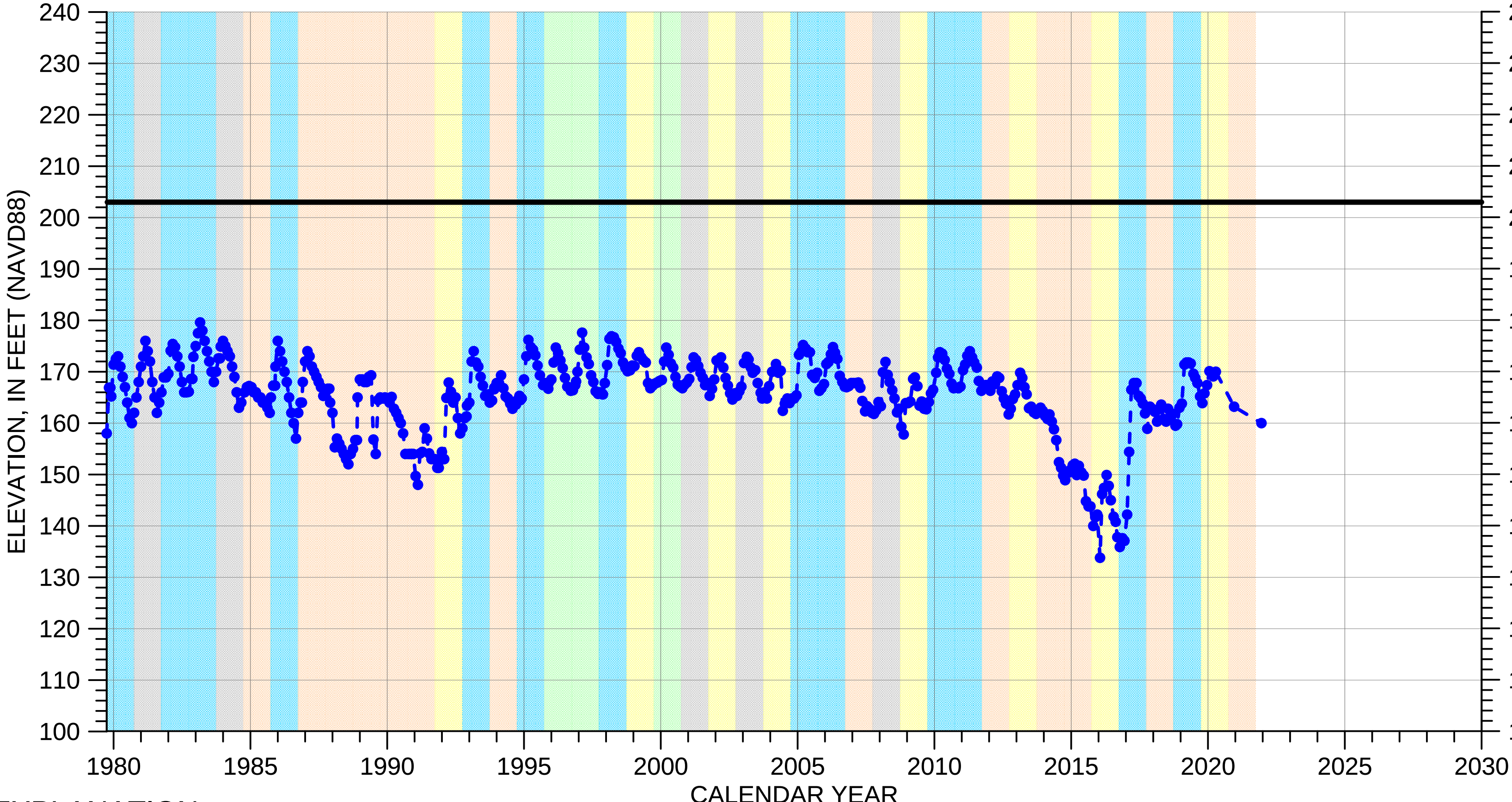
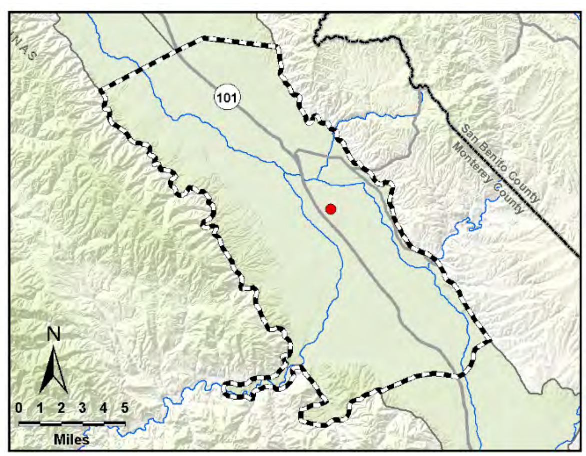
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-02N01 Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



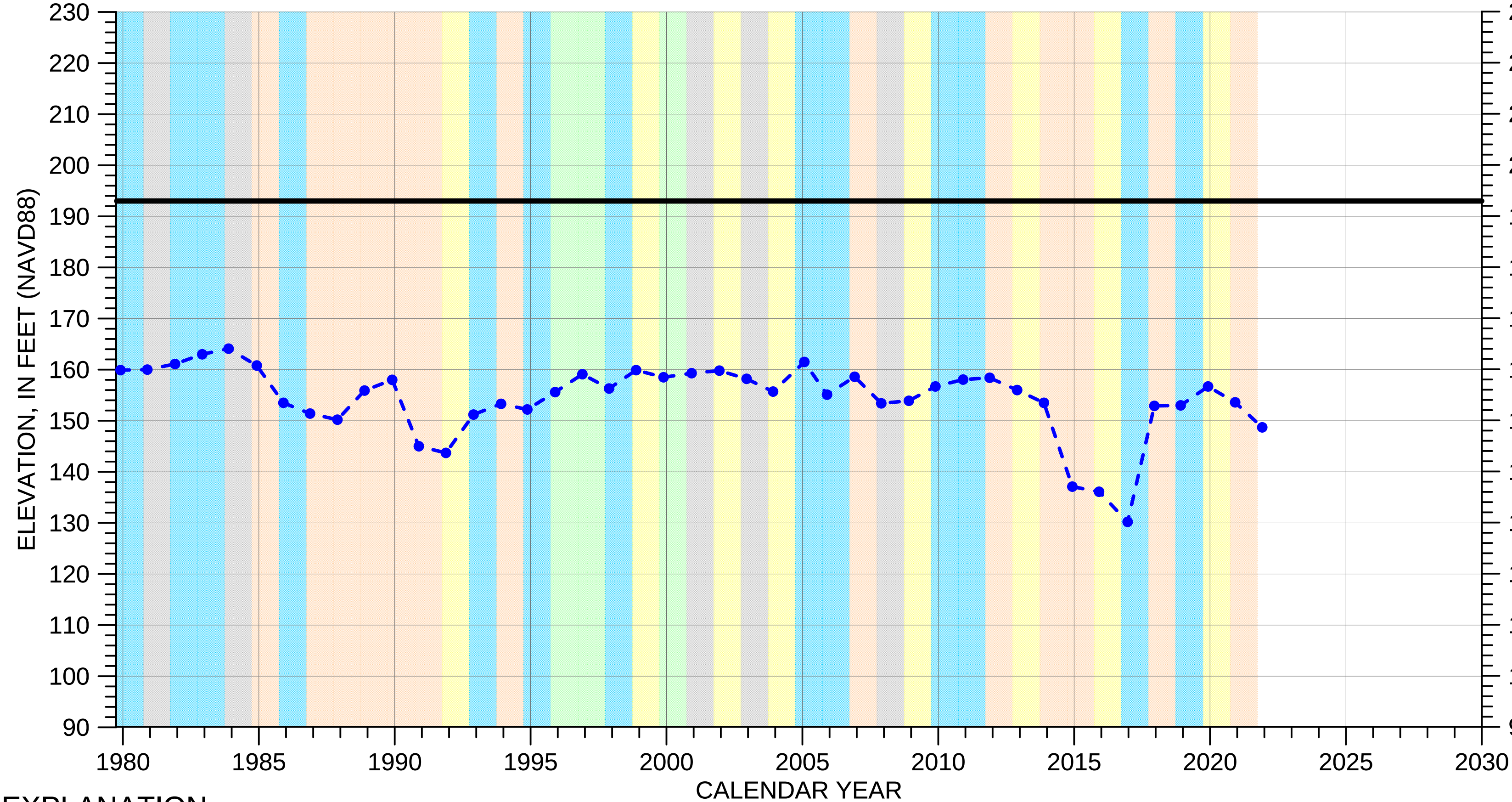
WATER YEAR TYPE DESIGNATION

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

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-02N01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-05R03

Forebay Aquifer Subbasin



Multiple perforated intervals from 73 to -77 feet msl

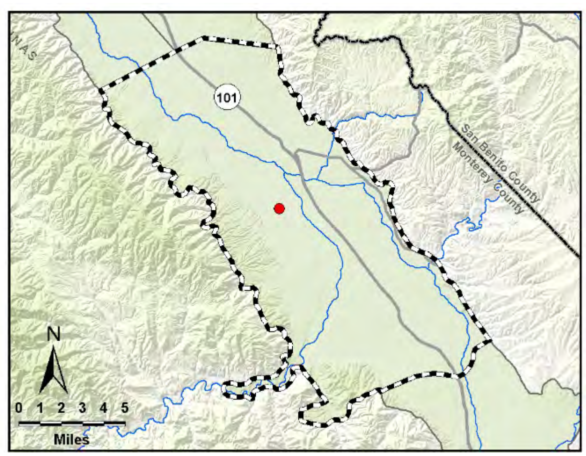
Well bottom -86 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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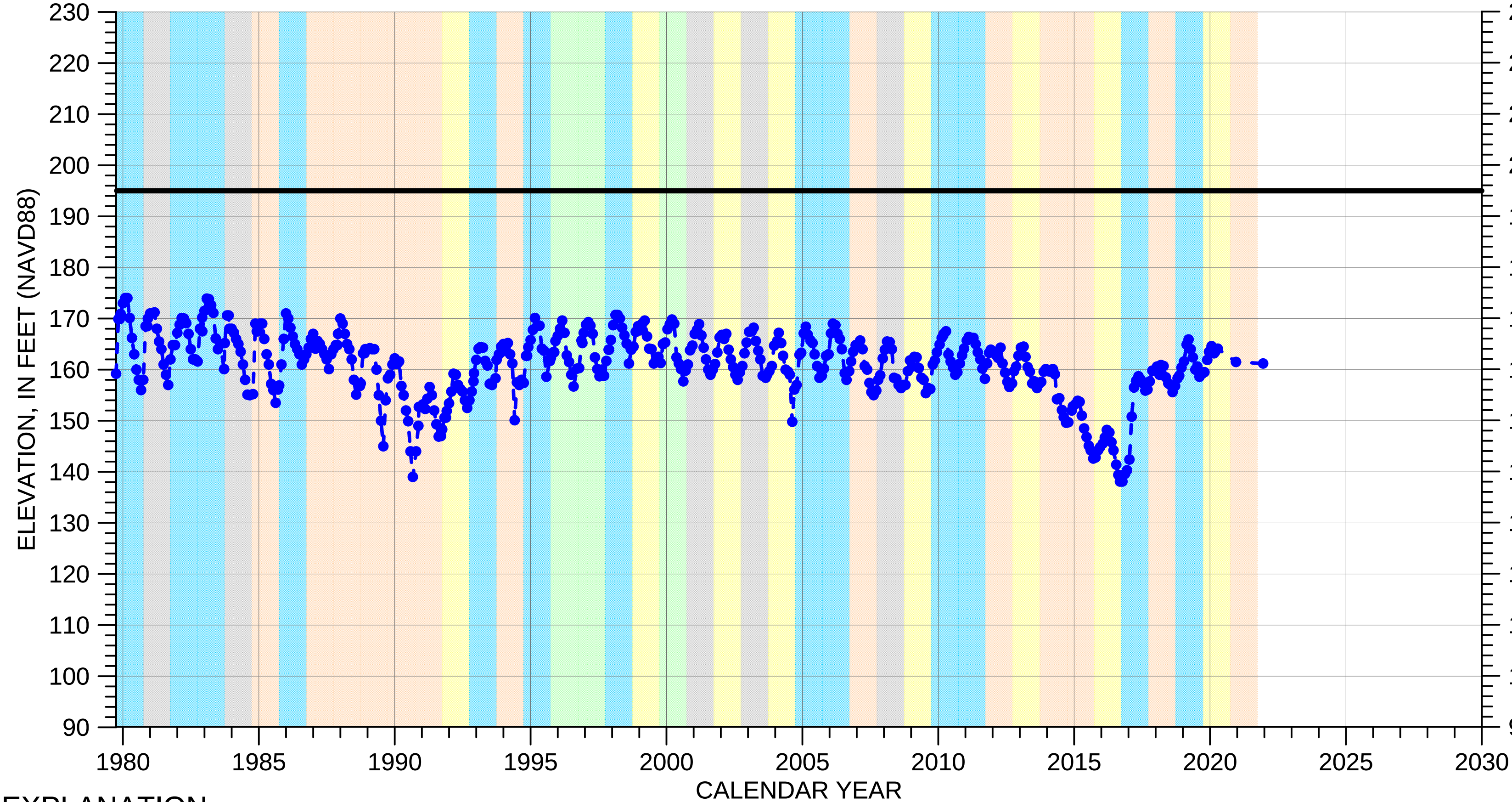
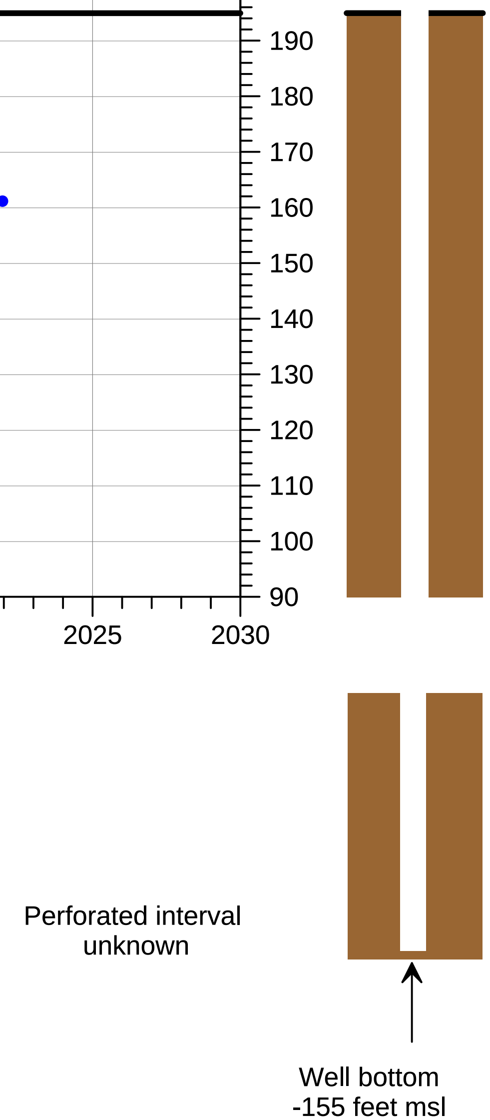
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-06M01

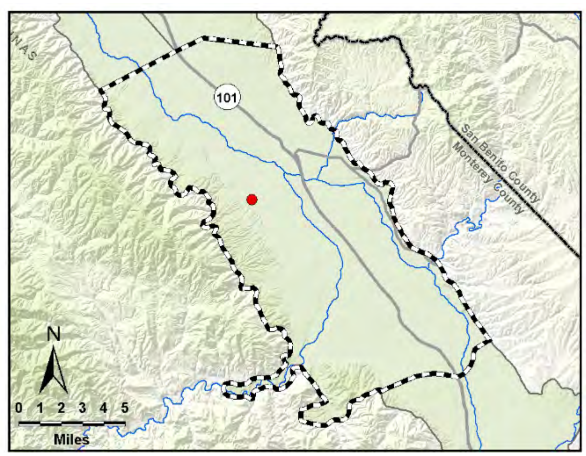
Forebay Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



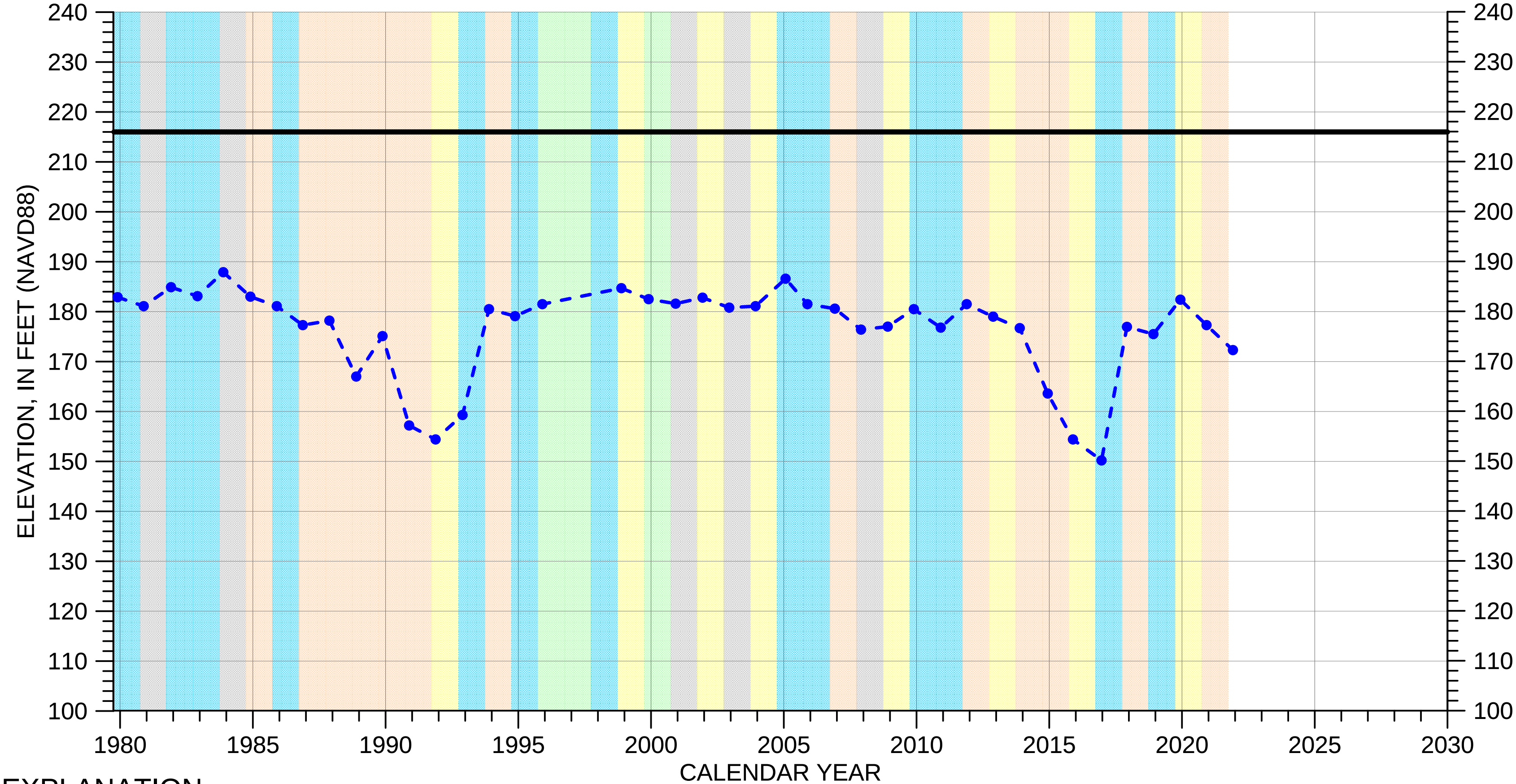
WATER YEAR TYPE DESIGNATION

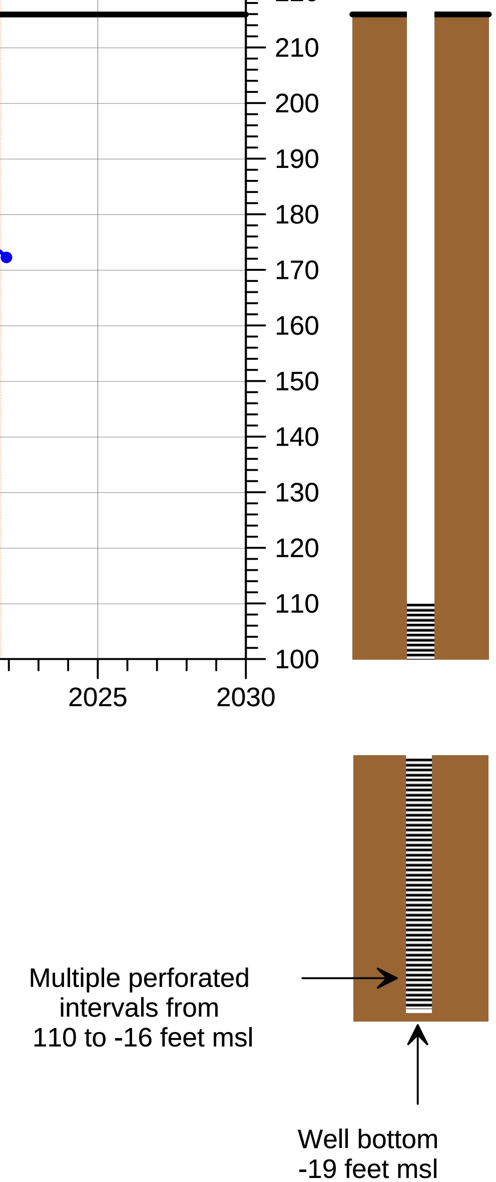
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-06M01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-11J01

Forebay Aquifer Subbasin



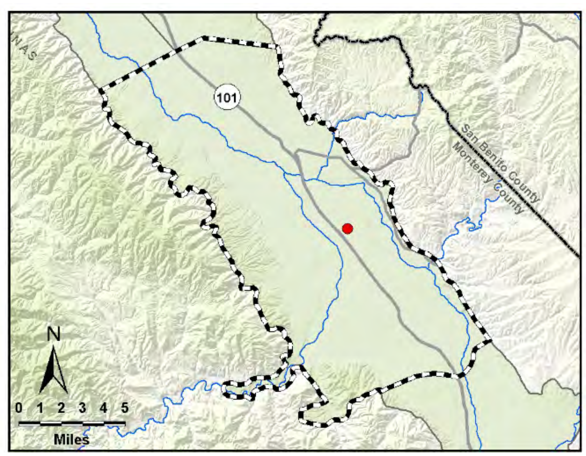


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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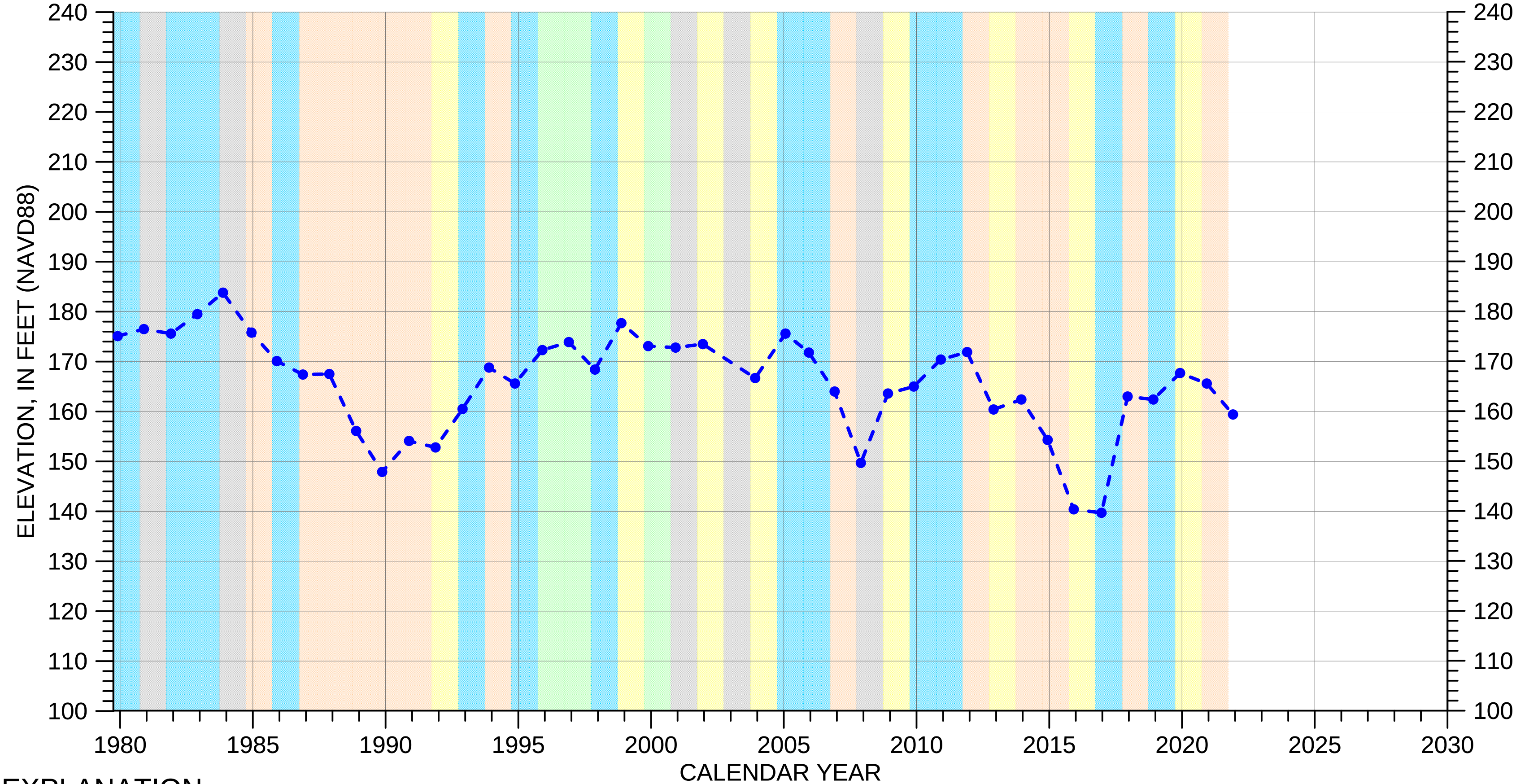
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-16L01

Forebay Aquifer Subbasin

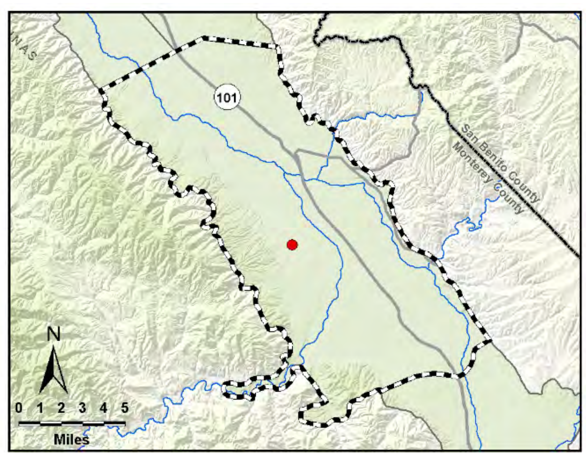


EXPLANATION

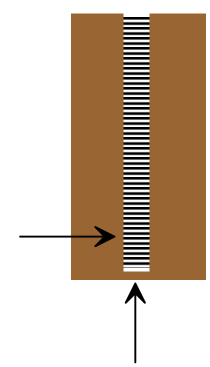
- Groundwater Elevation
- Suspect Measurement
- Land Surface (304 FT MSL)

WATER YEAR TYPE DESIGNATION

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



Perforated from
105 to -115 feet msl

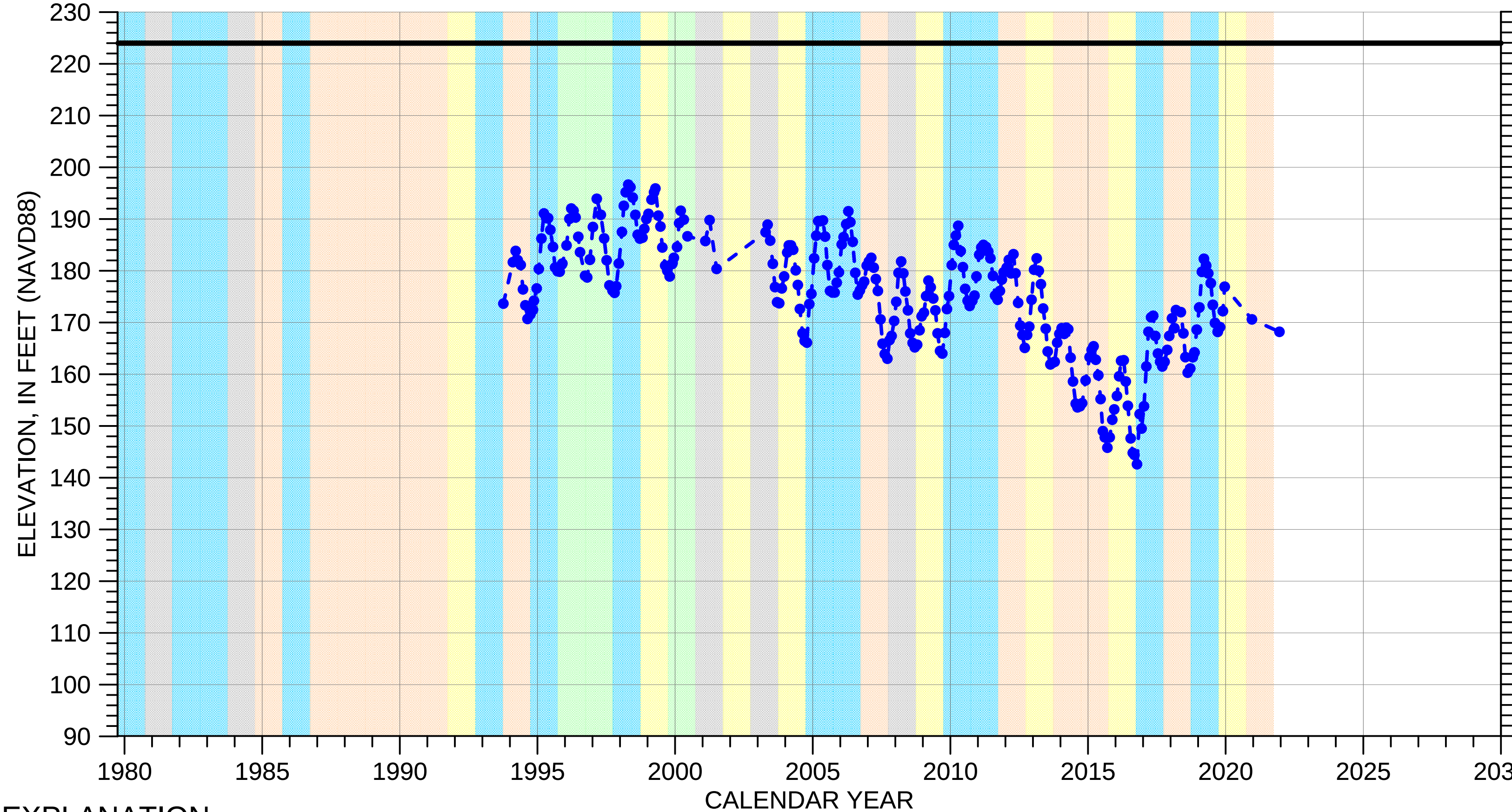


Well bottom
-140 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-16L01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B02

Forebay Aquifer Subbasin

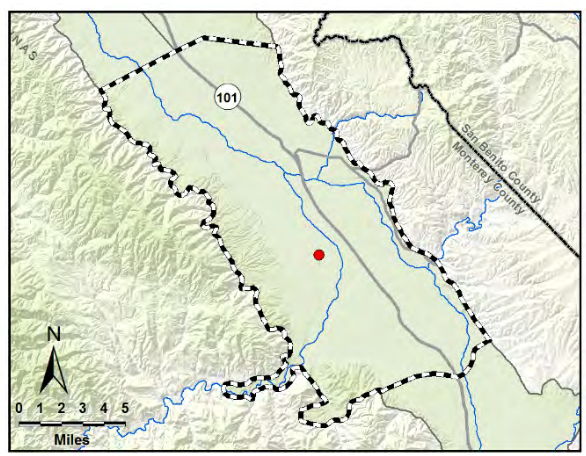


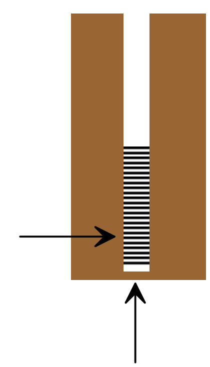
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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





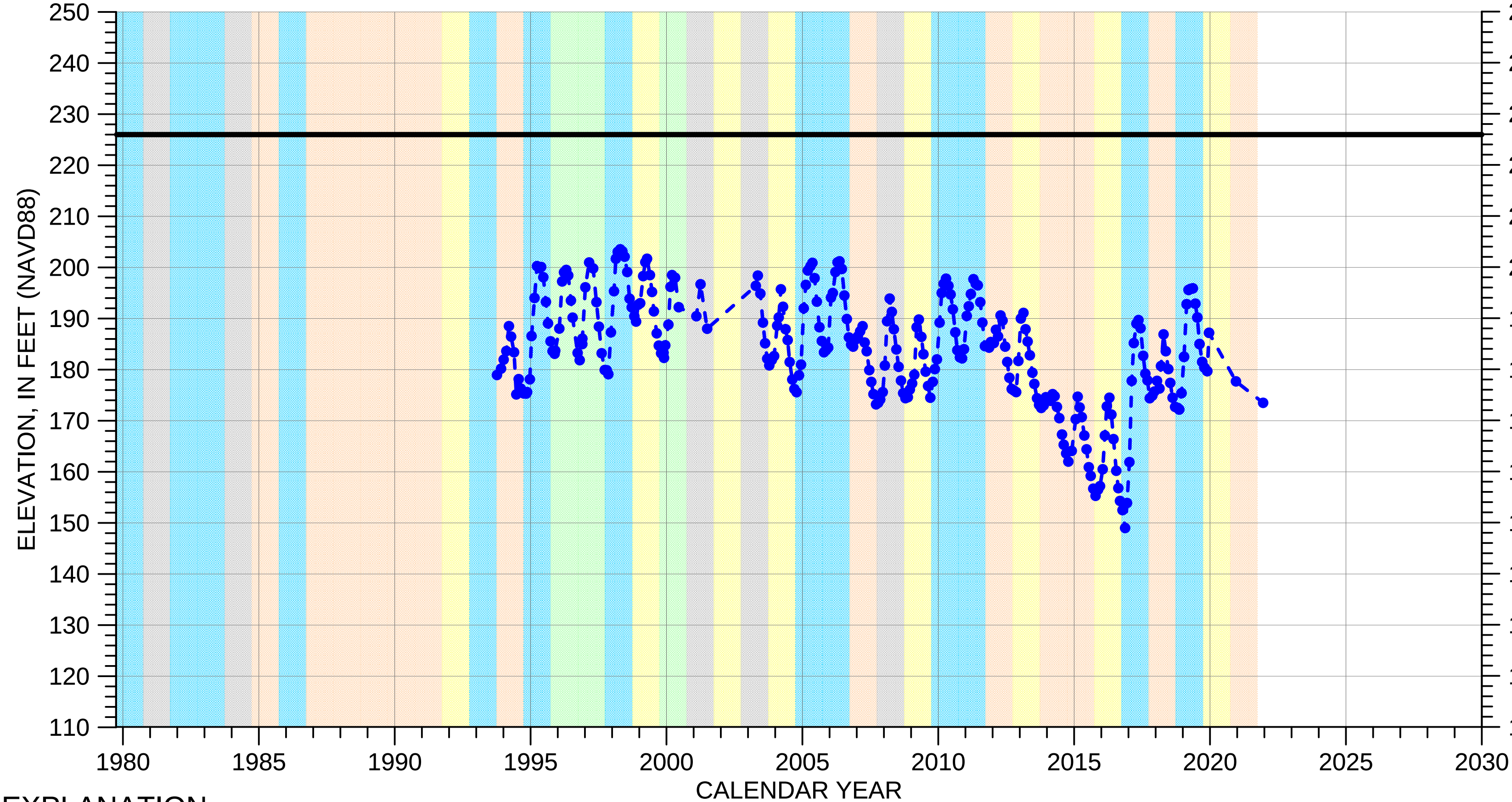
Perforated from
-286 to -356 feet msl

Well bottom
-366 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-22B02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B03

Forebay Aquifer Subbasin



Perforated from
6 to -45 feet msl

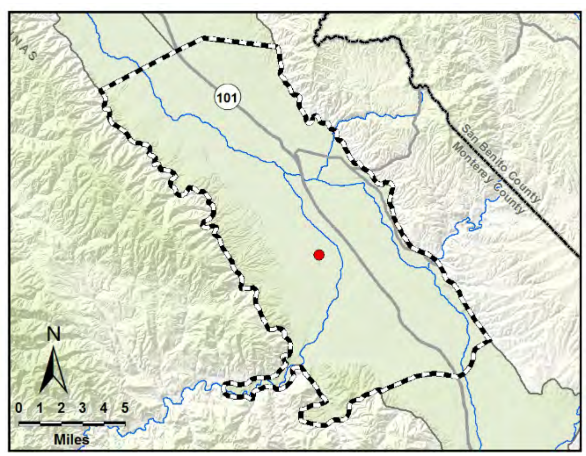
Well bottom
-55 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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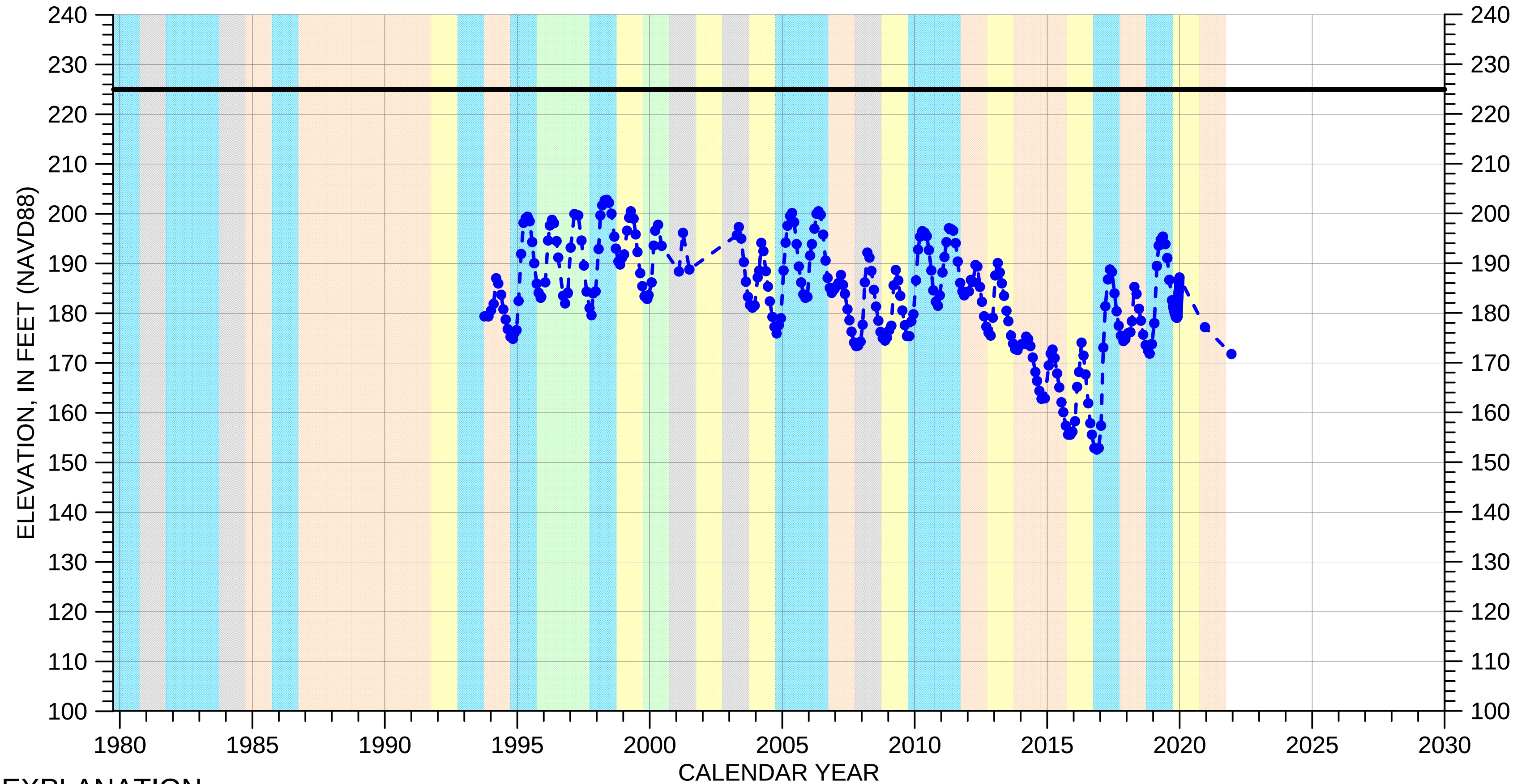
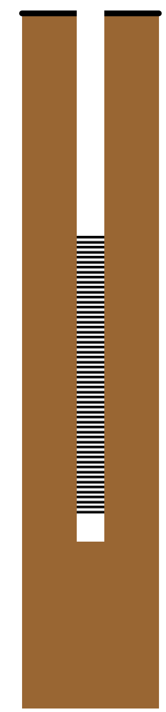
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B04

Forebay Aquifer Subbasin





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EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

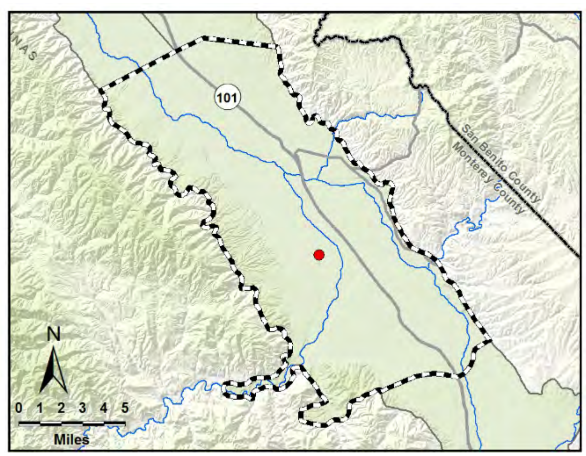
DRY

DRY - NORMAL

NORMAL

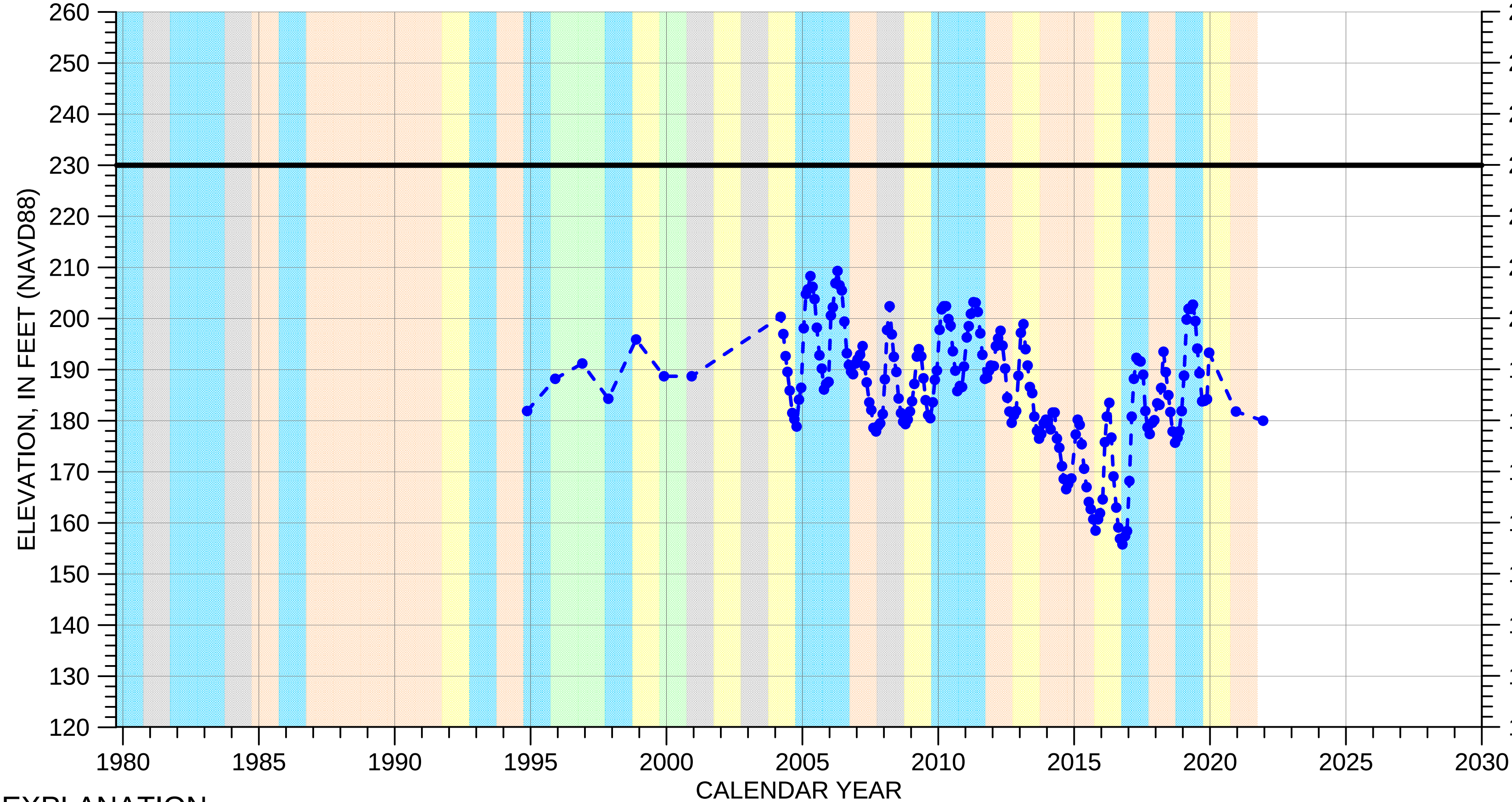
WET - NORMAL

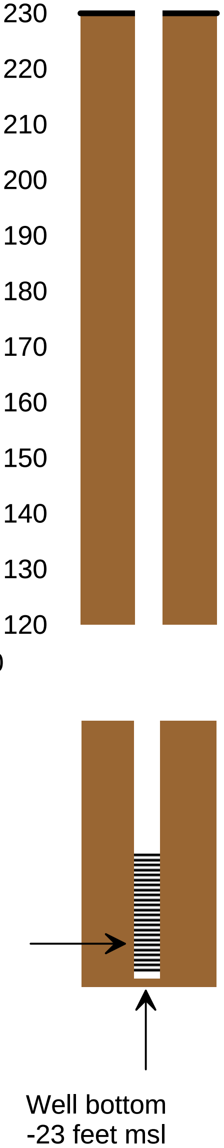
WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M01

Forebay Aquifer Subbasin



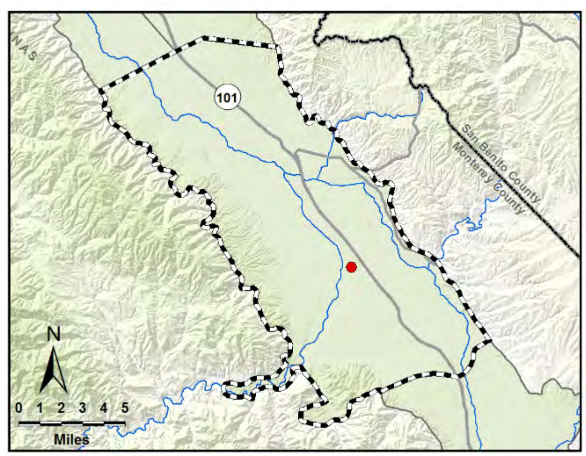


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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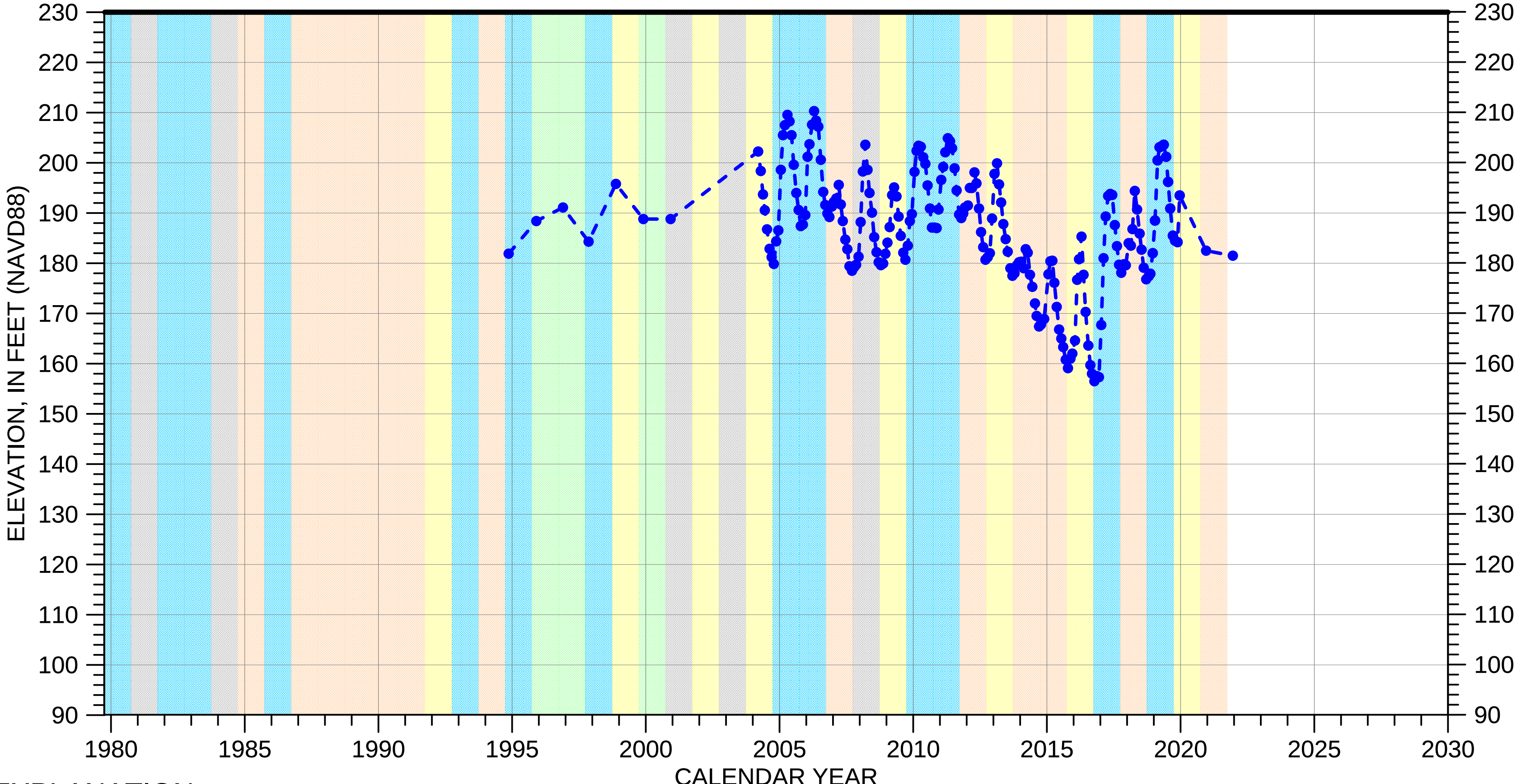
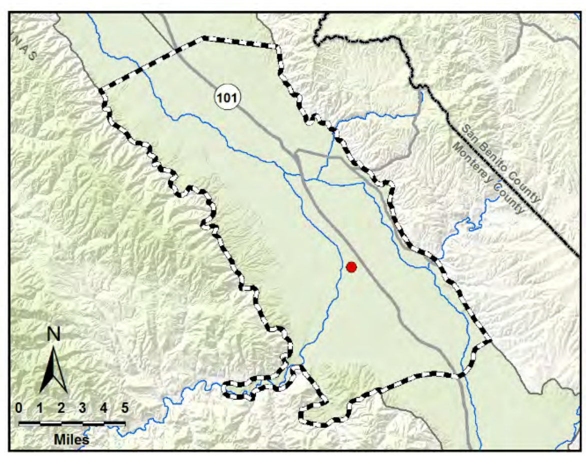
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



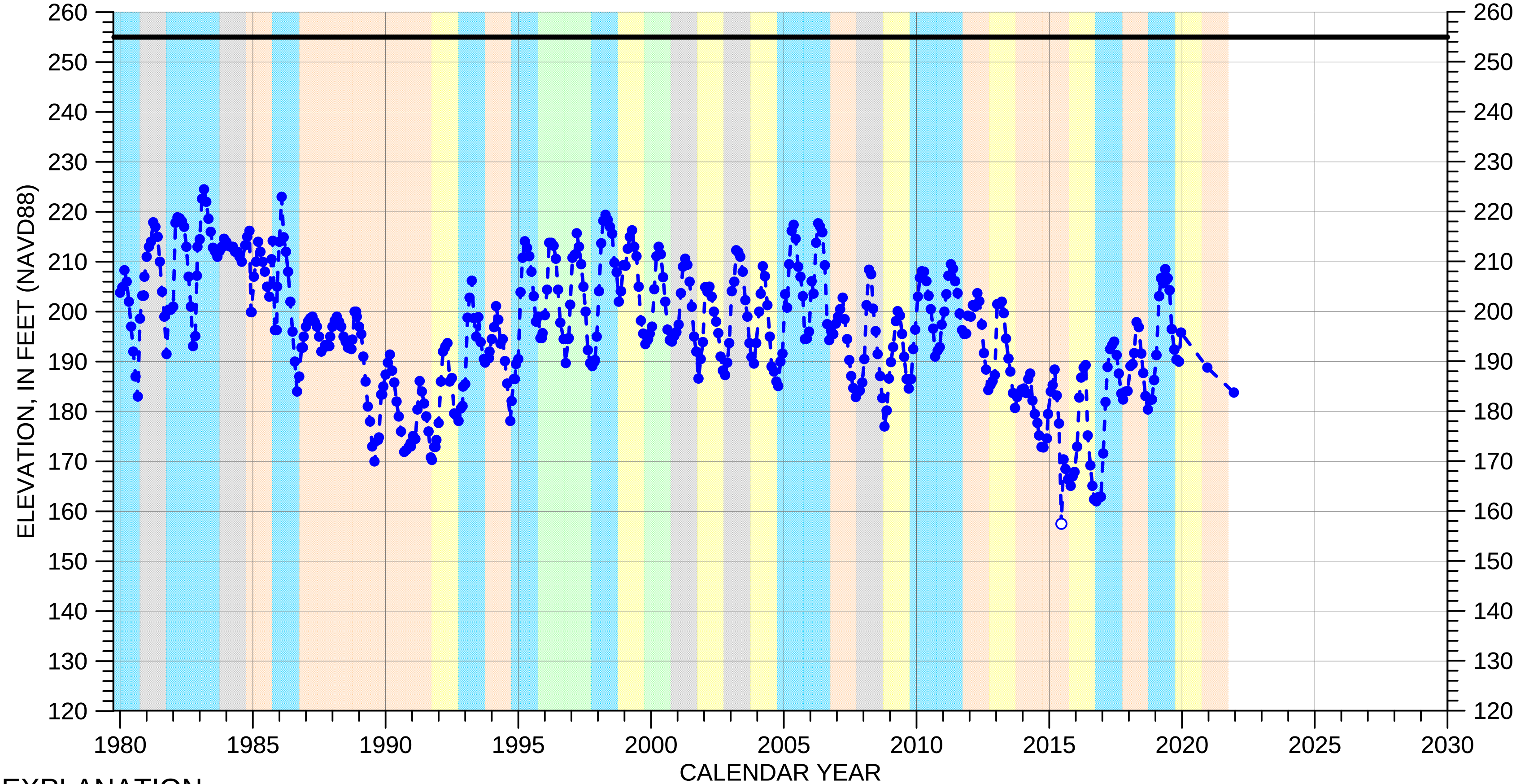
WATER YEAR TYPE DESIGNATION

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

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-24M02.grf

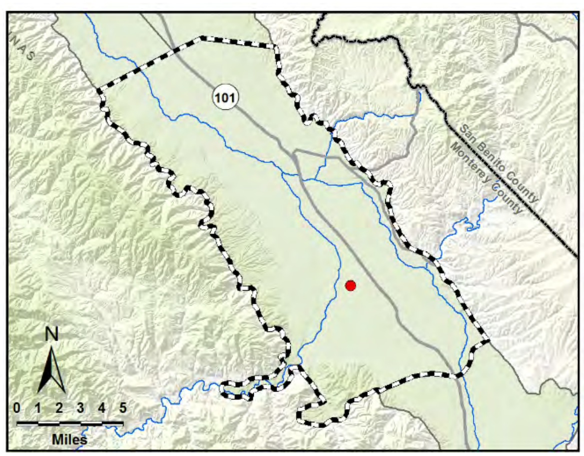
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-25F01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



Perforated interval unknown

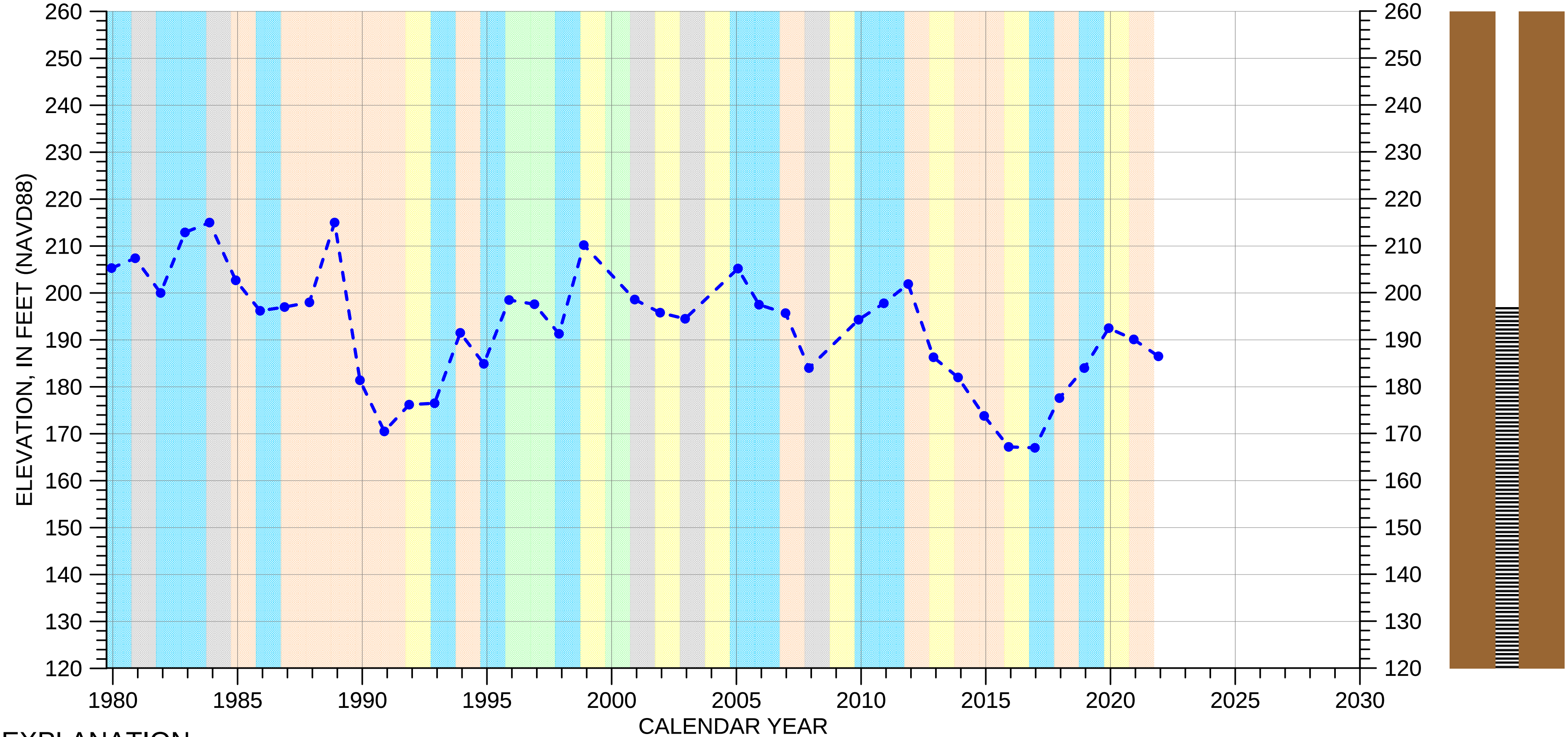
WATER YEAR TYPE DESIGNATION

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

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-25F01.grf

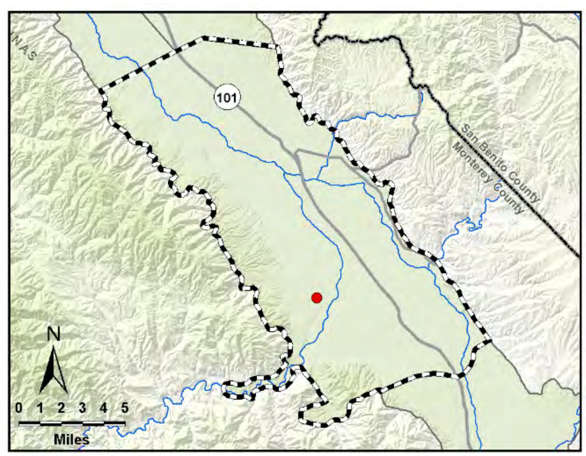
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-34B01

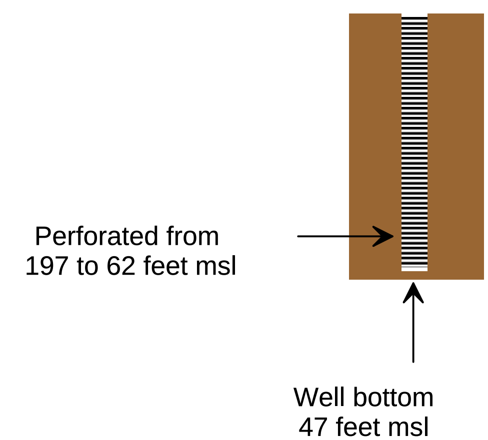
Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (347 FT MSL)





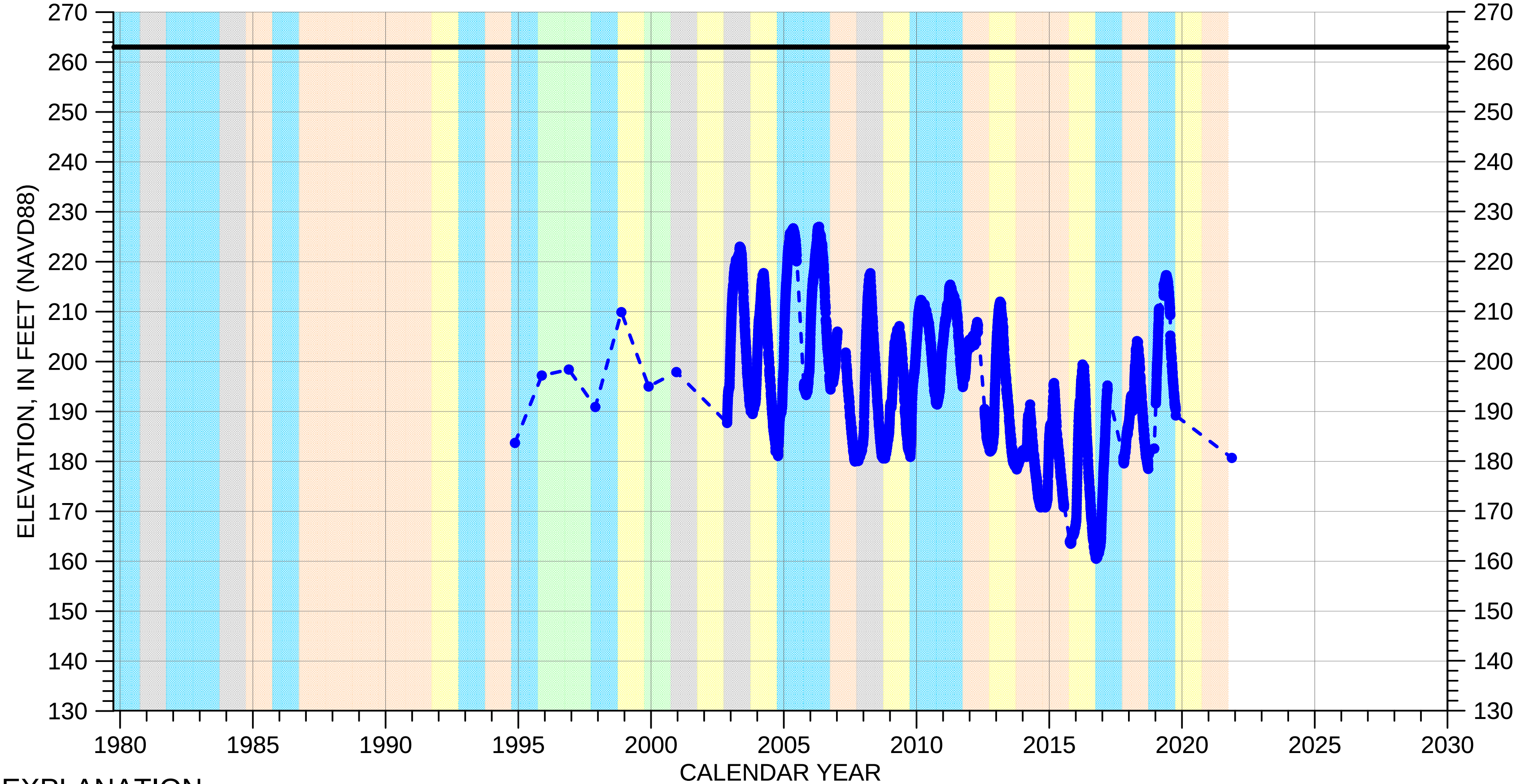
WATER YEAR TYPE DESIGNATION

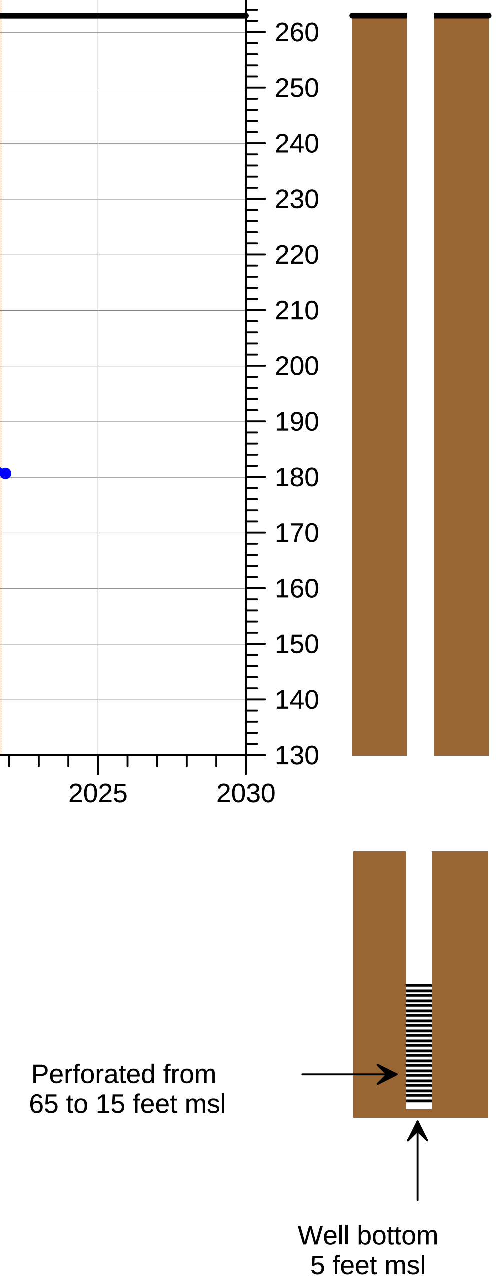
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\18S_06E-34B01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F01

Forebay Aquifer Subbasin



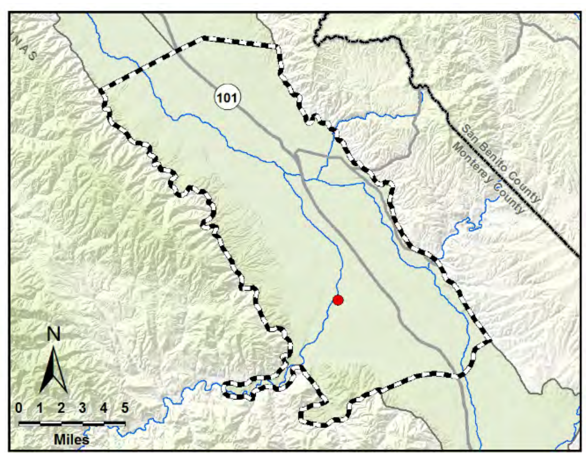


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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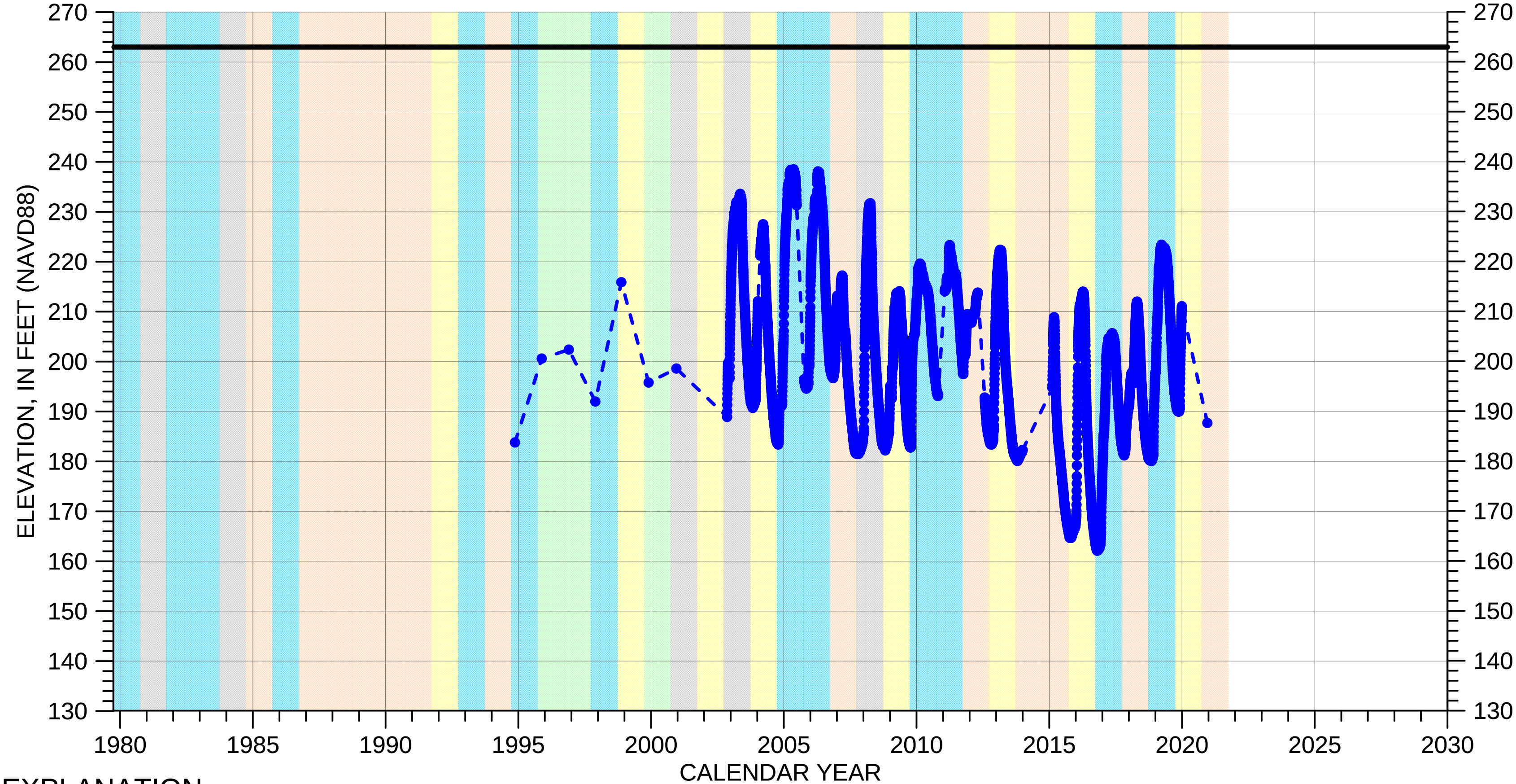
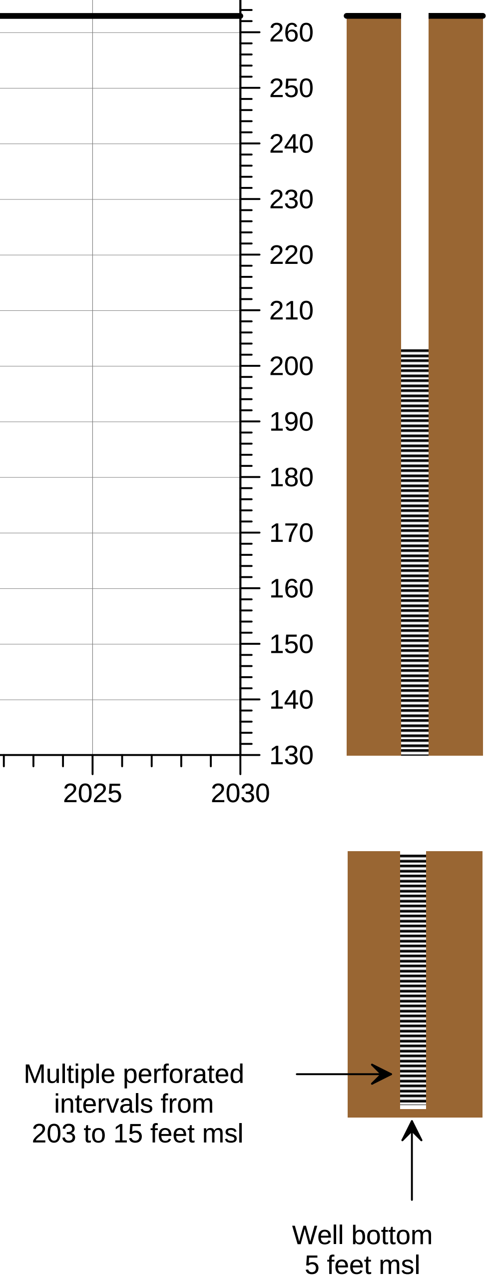
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F02

Forebay Aquifer Subbasin



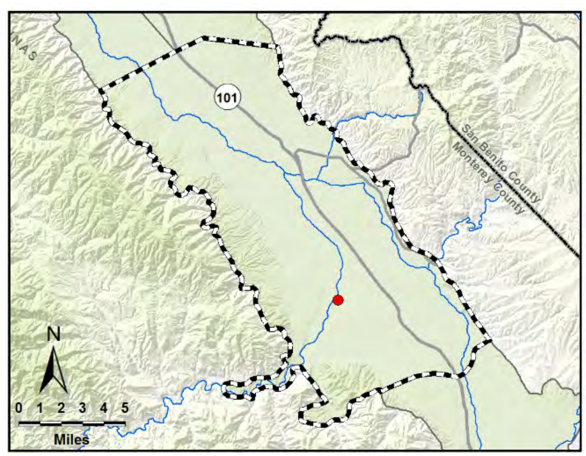


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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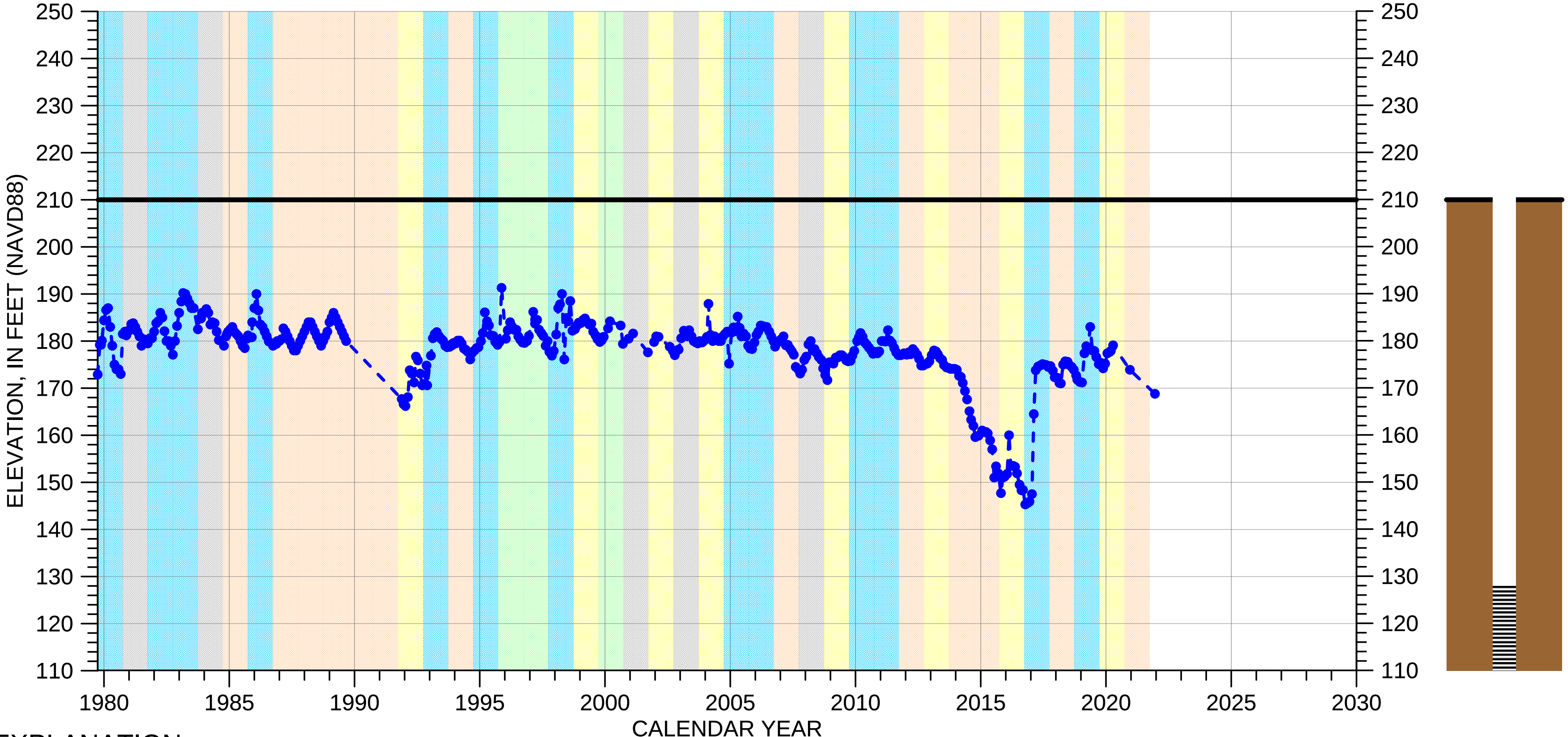
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-19G02 Forebay Aquifer Subbasin

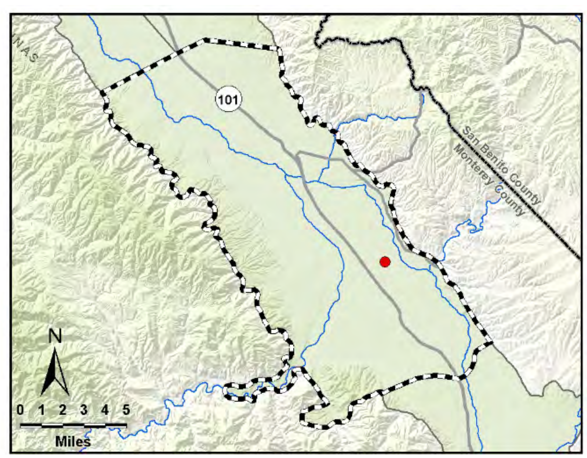


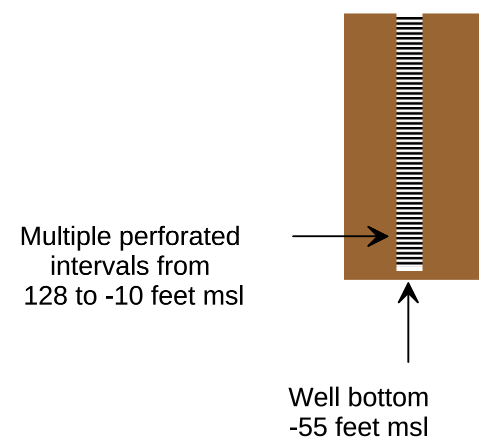
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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





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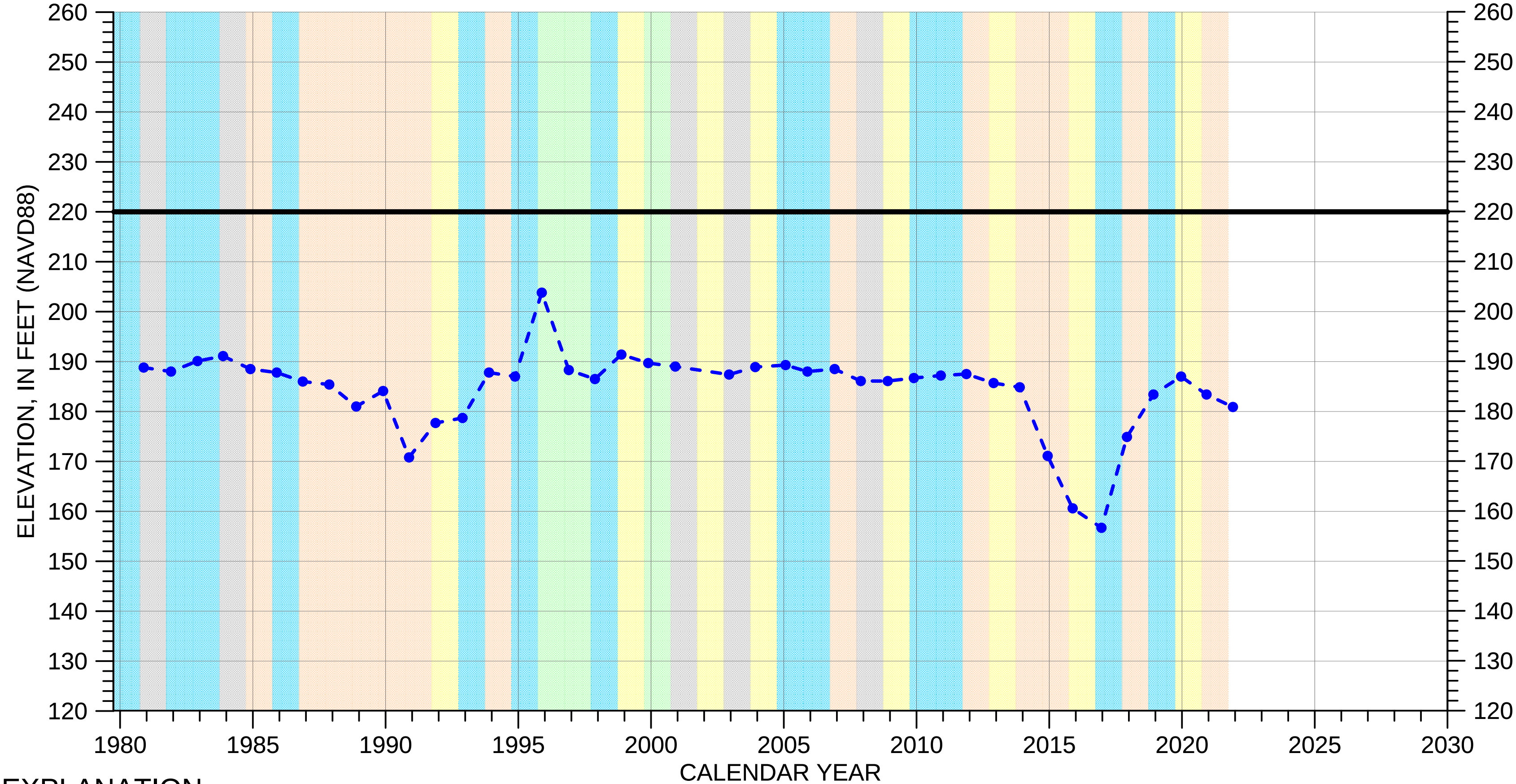
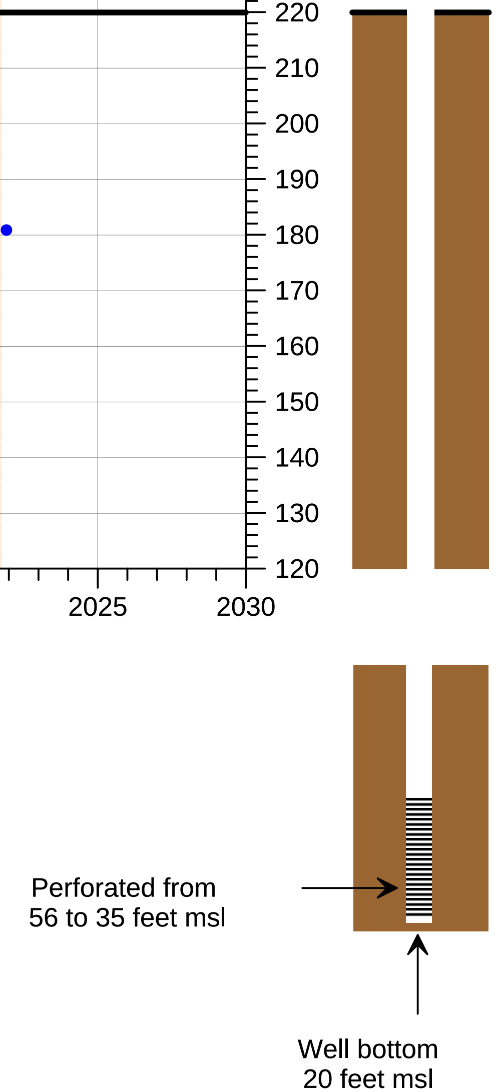
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-20K01

Forebay Aquifer Subbasin



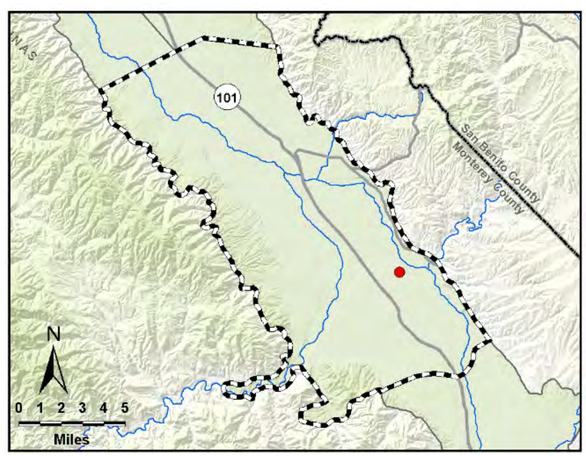


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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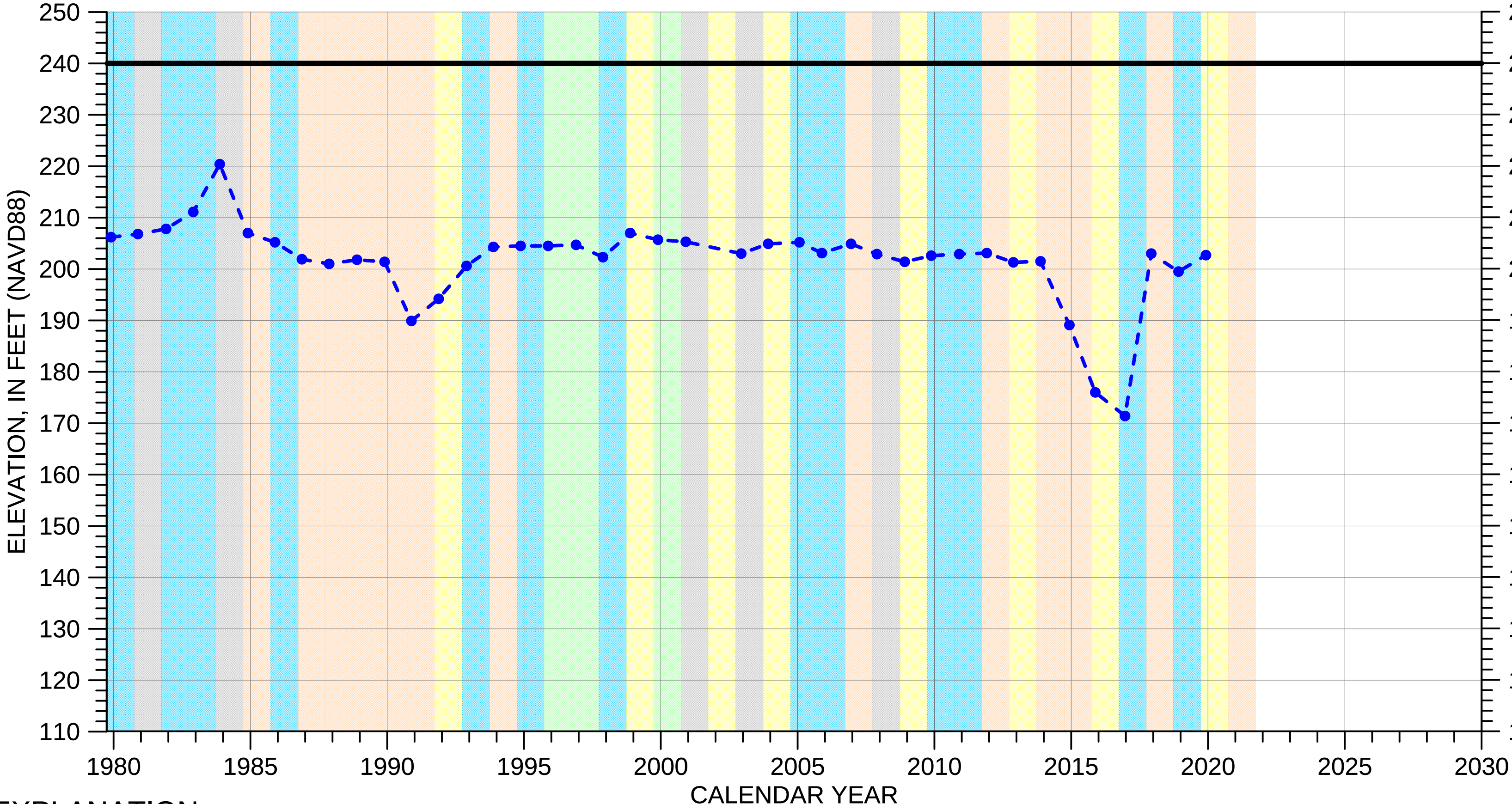
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-28K01

Forebay Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

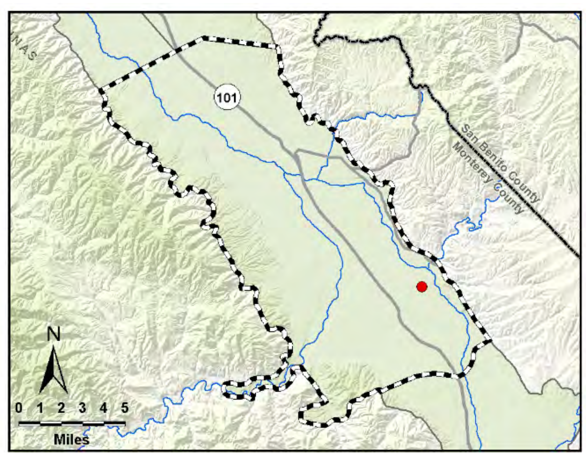
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET

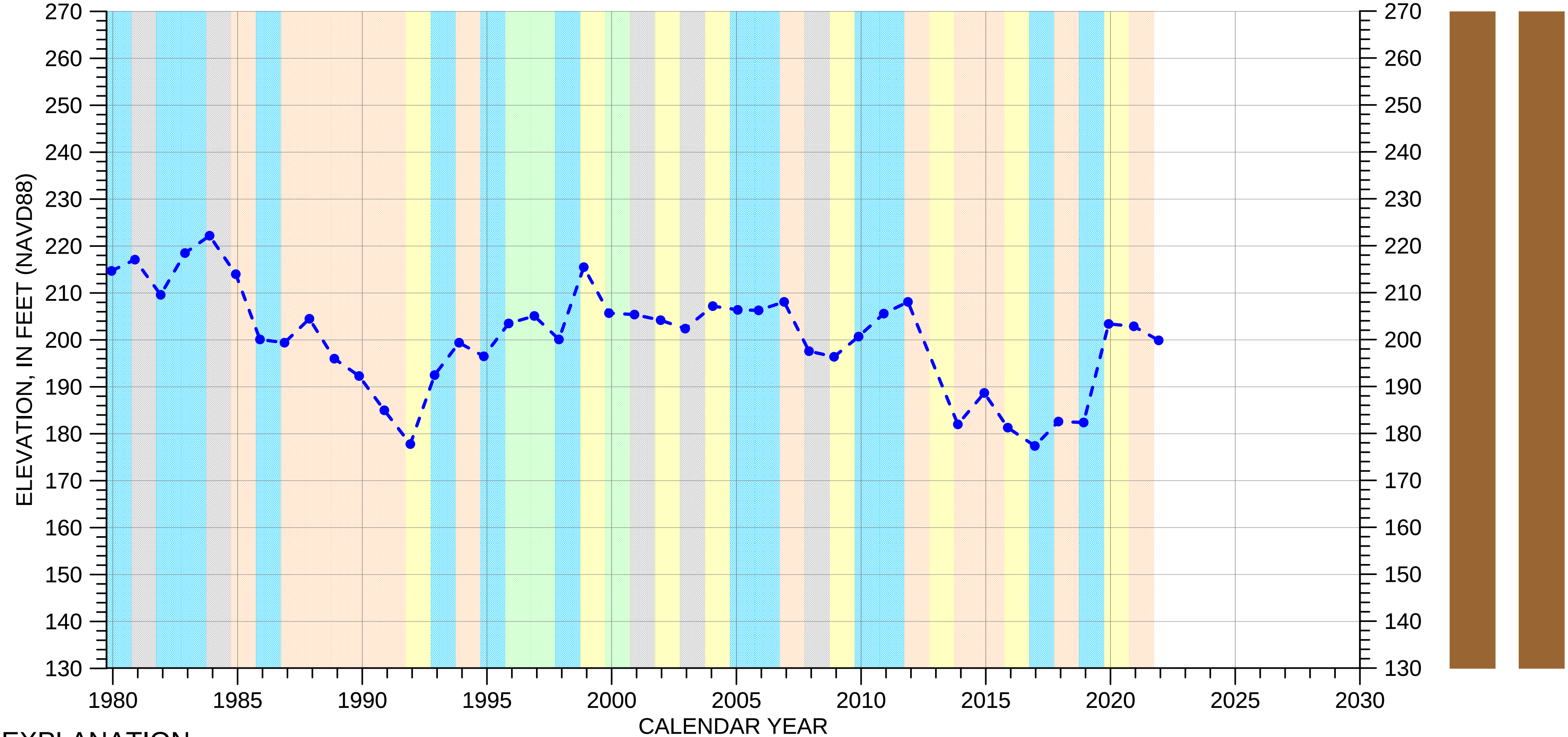


Perforated interval unknown

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\18S_07E-28K01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-01H01

Forebay Aquifer Subbasin

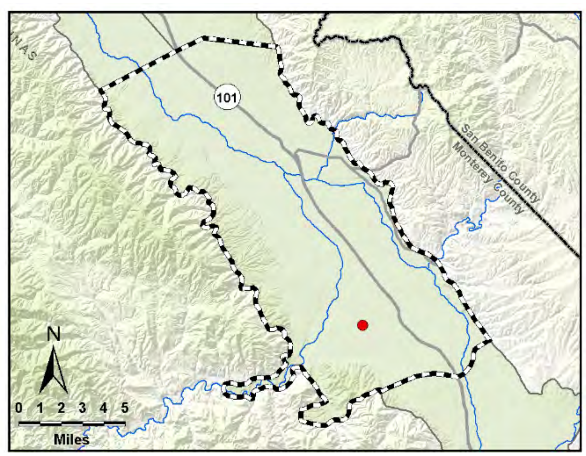


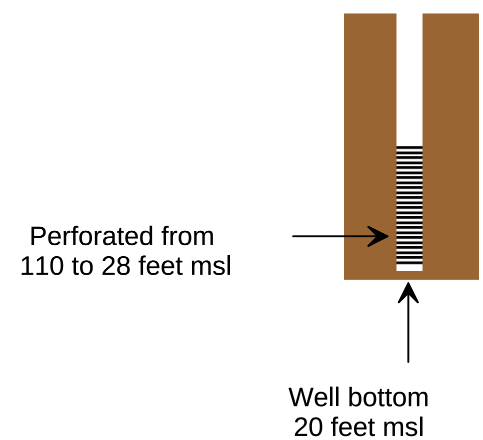
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (320 FT MSL)

WATER YEAR TYPE DESIGNATION

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





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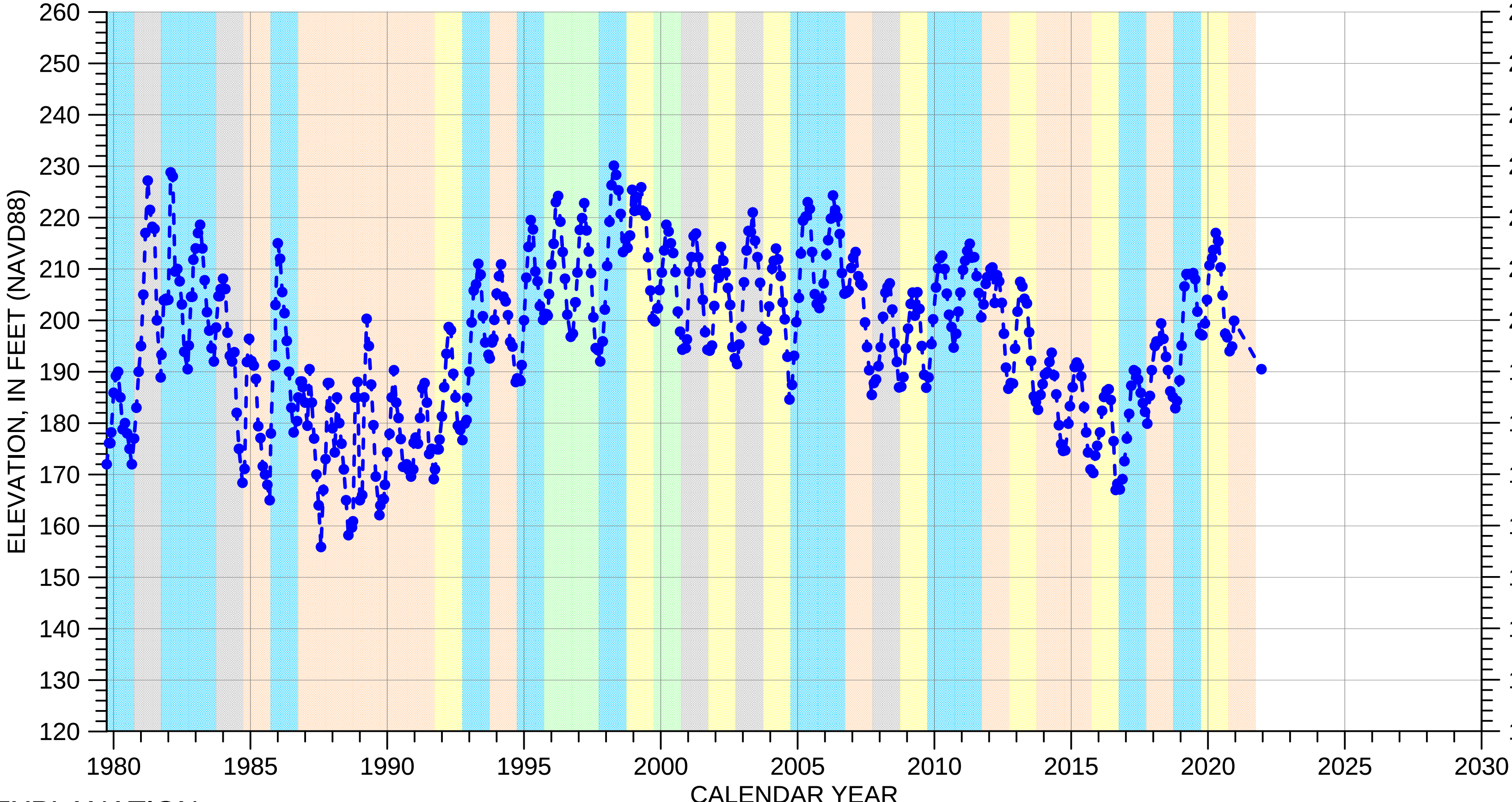
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-11C01 Forebay Aquifer Subbasin

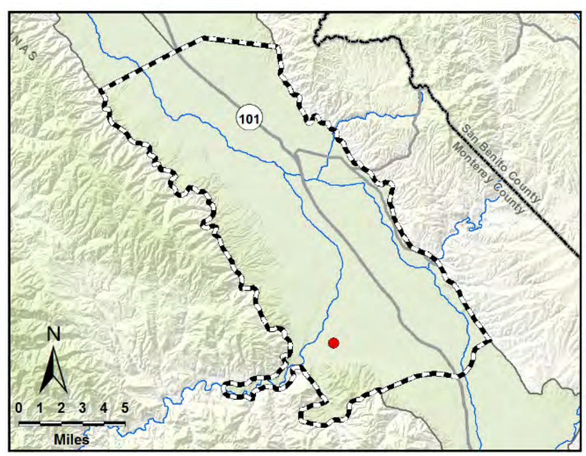


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (375 FT MSL)

WATER YEAR TYPE DESIGNATION

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



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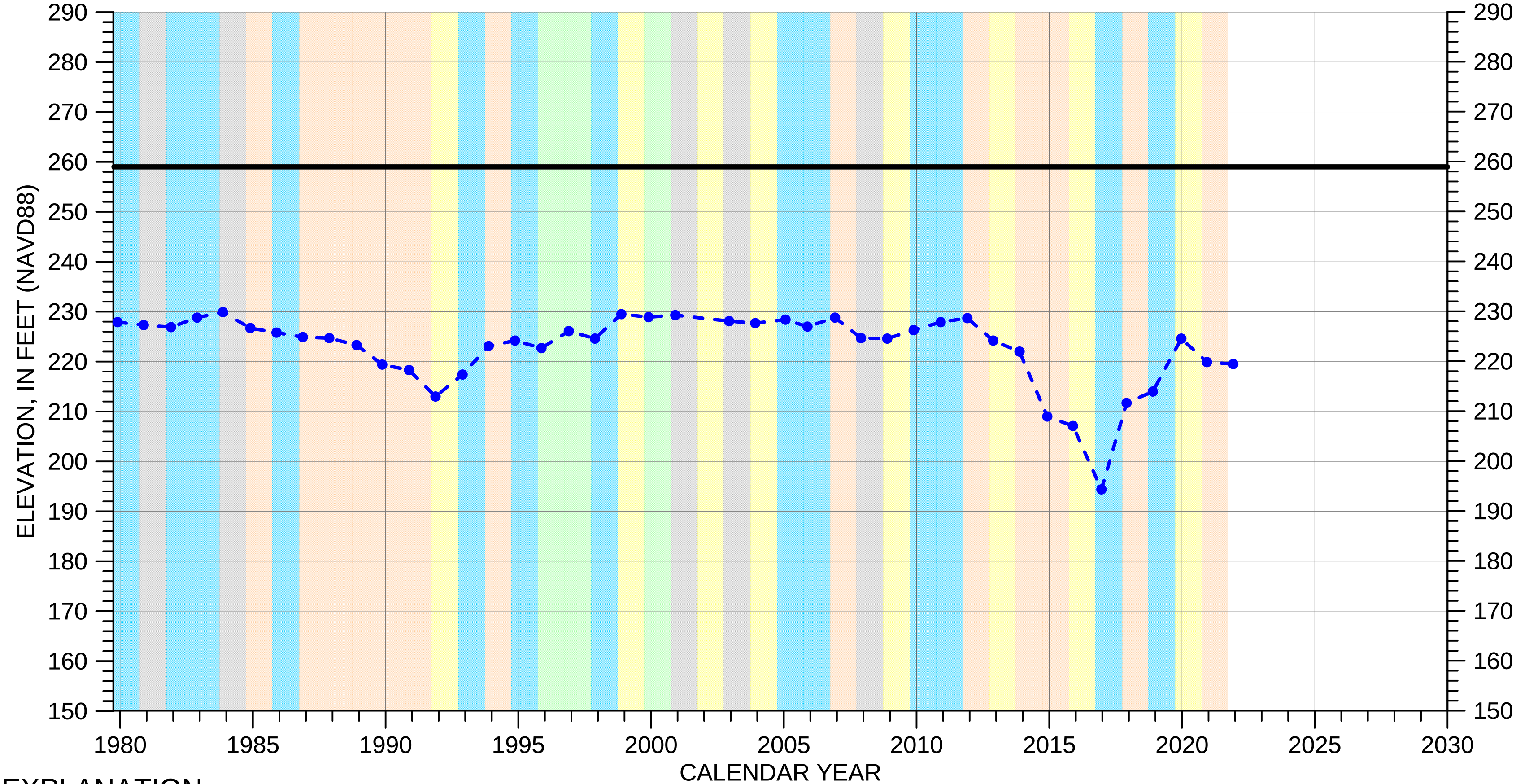
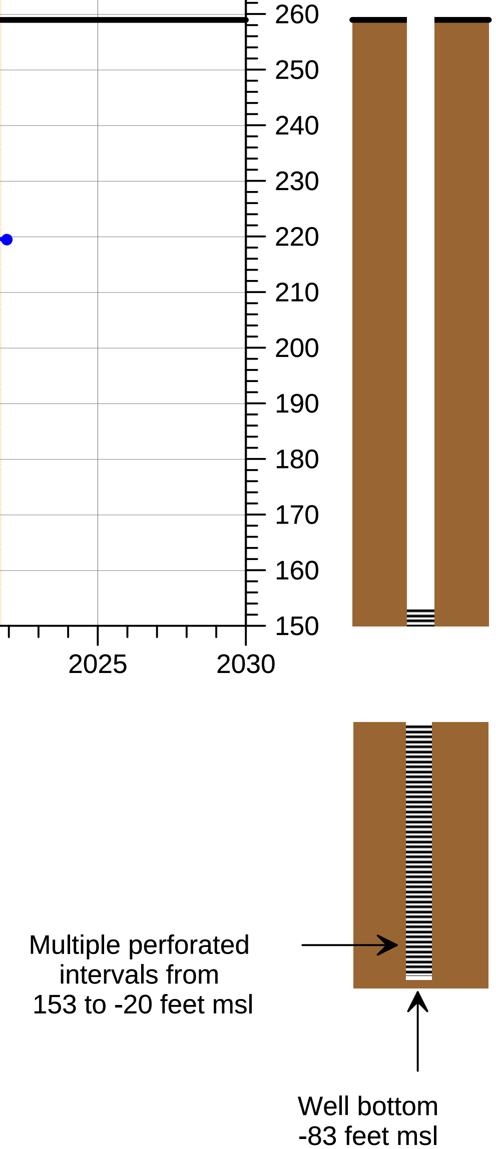
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-04Q01

Forebay Aquifer Subbasin



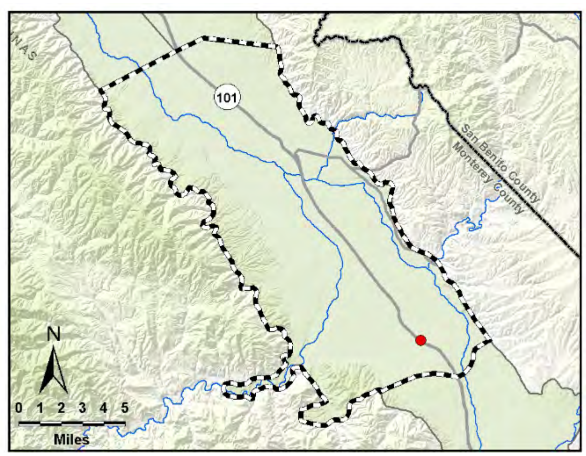


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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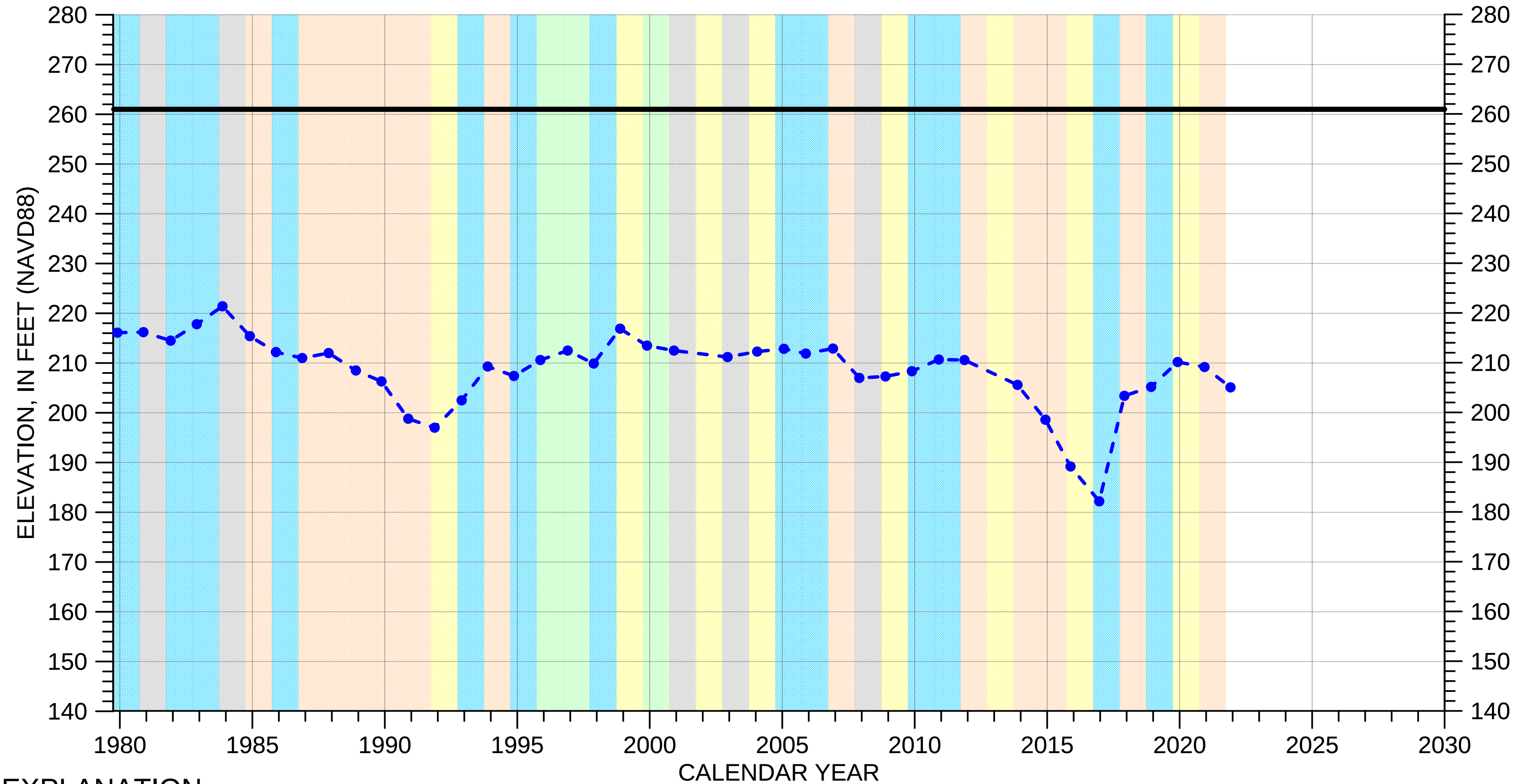
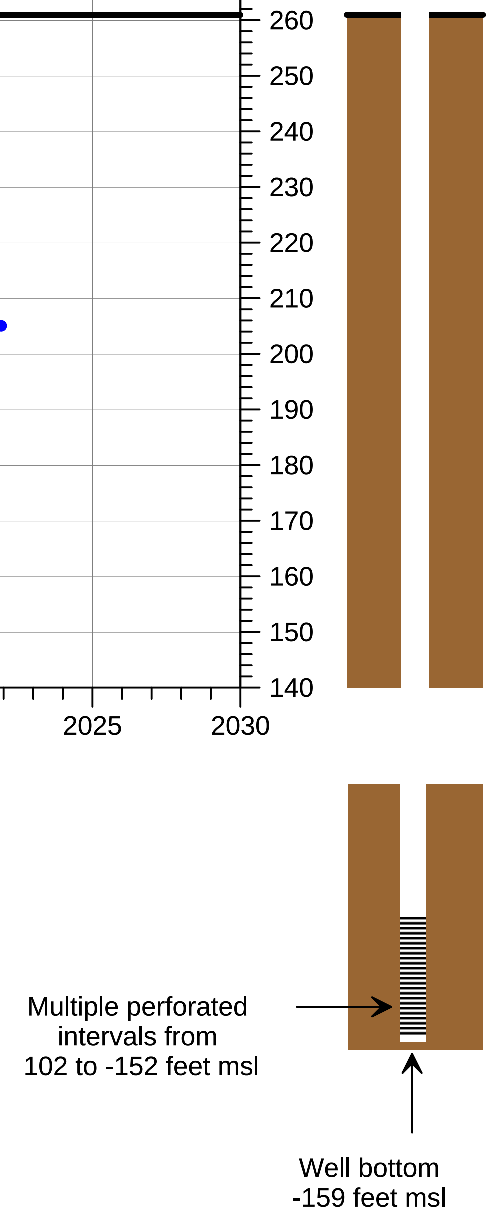
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-05B02

Forebay Aquifer Subbasin



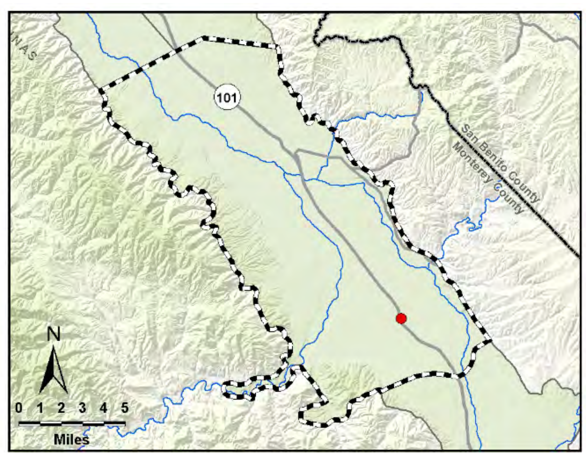


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

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



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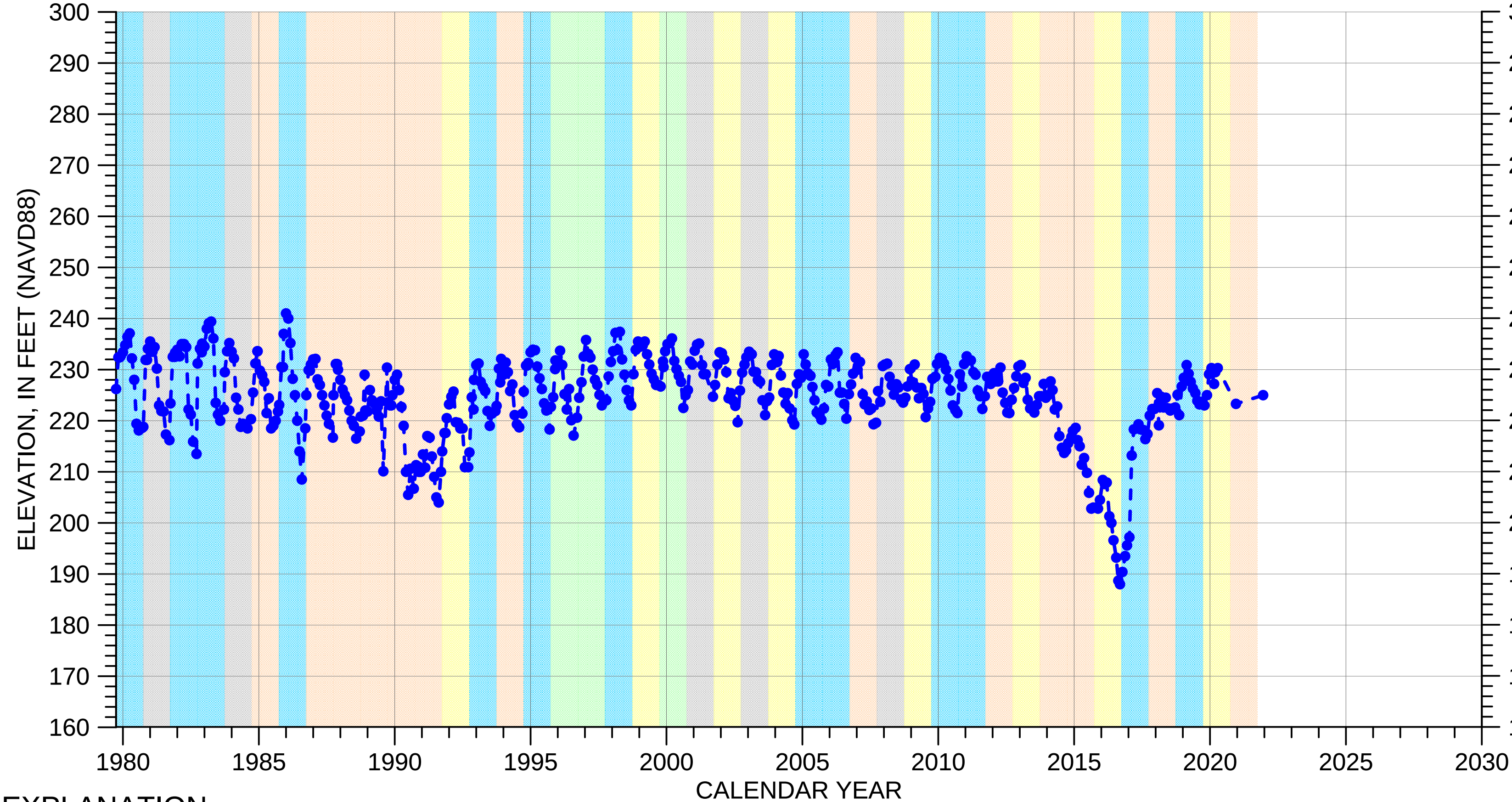
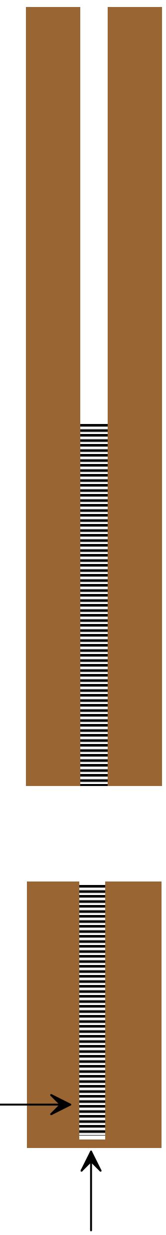
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-10P01

Forebay Aquifer Subbasin





Perforated from 225 to 77 feet msl

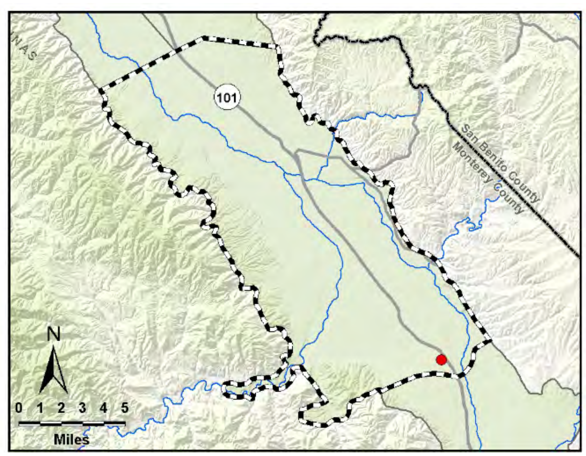
Well bottom 70 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (315 FT MSL)

WATER YEAR TYPE DESIGNATION

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



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