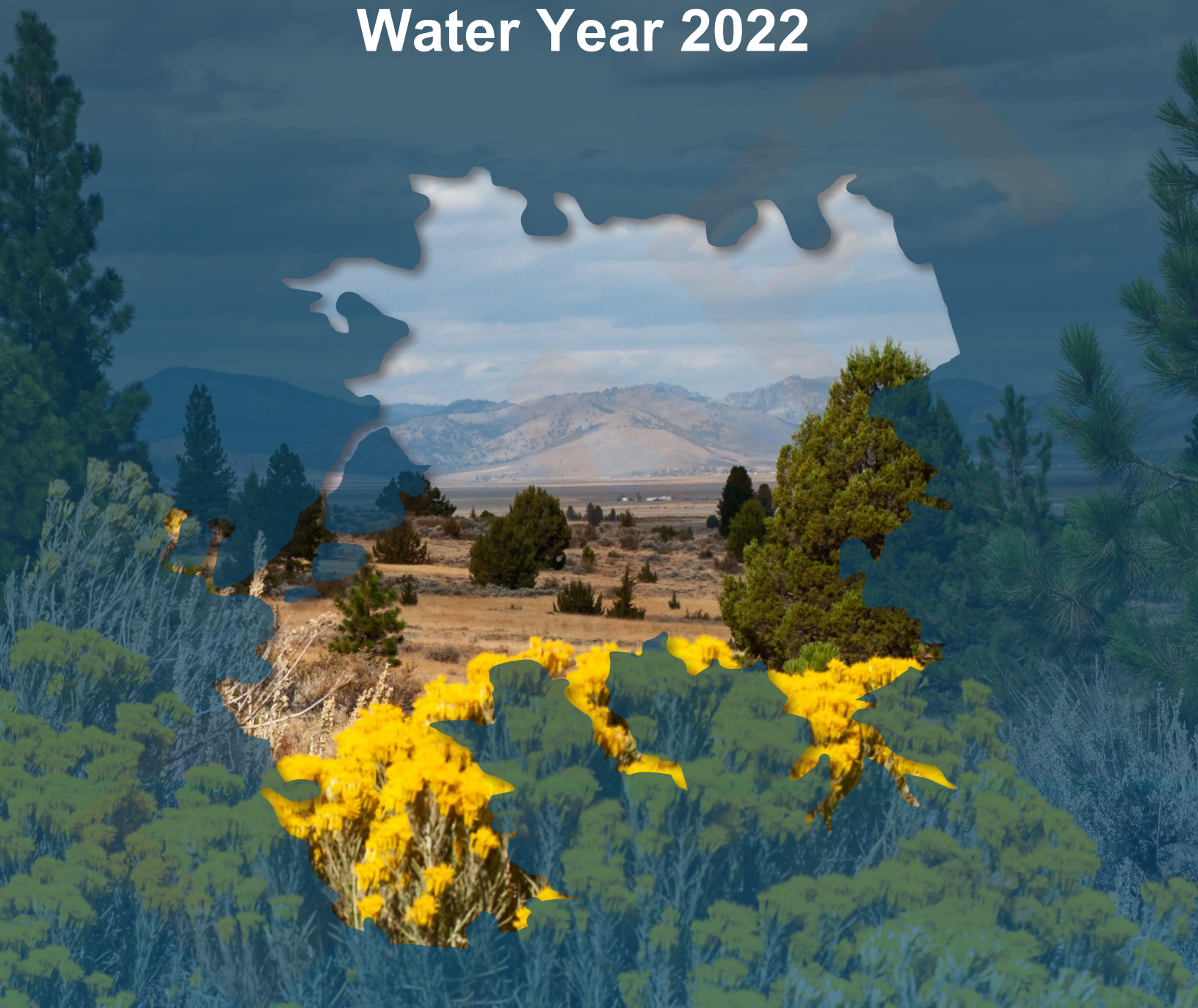


# Sierra Valley Groundwater Basin GSP Annual Report Water Year 2022



**Sierra Valley  
Groundwater  
Management District**



## Certification

The Sierra Valley Groundwater Basin Groundwater Sustainability Plan Annual Report for water year 2022 was prepared in accordance with generally accepted professional hydrogeologic principles and practices and makes no other warranties, either expressed or implied as to the professional advice or data included in it. The Annual Report has not been prepared for use by parties or projects other than those named or described herein and may not contain sufficient information for other parties or purposes.

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Appendix A. Representative Monitoring Point Hydrographs

## Acronyms and Abbreviations

<u>Acronym</u>	<u>Definition</u>
AF	acre-feet
AFY	acre-feet per year
amsl	above mean sea level
Basin	Sierra Valley groundwater basin
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
DBS&A	Daniel B. Stephens & Associates, Inc.
DWR	[CA] Department of Water Resources
ft	feet
GSA	Groundwater Sustainability Agency
GDE	Groundwater Dependent Ecosystem
GSP	Groundwater Sustainability Plan
LWA	Larry Walker Associates
MFFR	Middle Fork Feather River
mi	mile
MO	Measurable Objective
MT	Minimum Threshold
PLSS	Public Land Survey System
PMA	Project and Management Action
RMP	Representative Monitoring Point
SGMA	Sustainable Groundwater Management Act
SMC	Sustainable Management Criteria
SVGMD	Sierra Valley Groundwater Management District
SVHSM	Sierra Valley Hydrogeologic System Model
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
WLE	water level elevation
WCR	Well Completion Report
WY	water year

## Executive Summary

Water year (WY) 2022 was a critically dry year for California. Precipitation for WY 2022 in the Sierra Valley groundwater basin (the Basin) totaled 14.50 inches, or approximately 63.5% of the historical average. Groundwater resources are typically relied upon more heavily in dry years than wet years. Average change in observed water levels in the upper and lower aquifers in the Basin from Fall 2021 to Fall 2022 was +0.14 ft and -0.14 ft, respectively. Change in groundwater in storage was estimated to be -8,817 acre-ft (AF) using the Sierra Valley Hydrogeologic System Model (SVHSM). Agricultural groundwater extractions in the Basin totaled 11,484 AF. An estimated 20,591 AF of surface water was used, with approximately 8,566 AF (42%) imported into the Basin from the Little Truckee River diversion. A total of 32,075 AF of water was used beneficially in the basin during WY 2022.

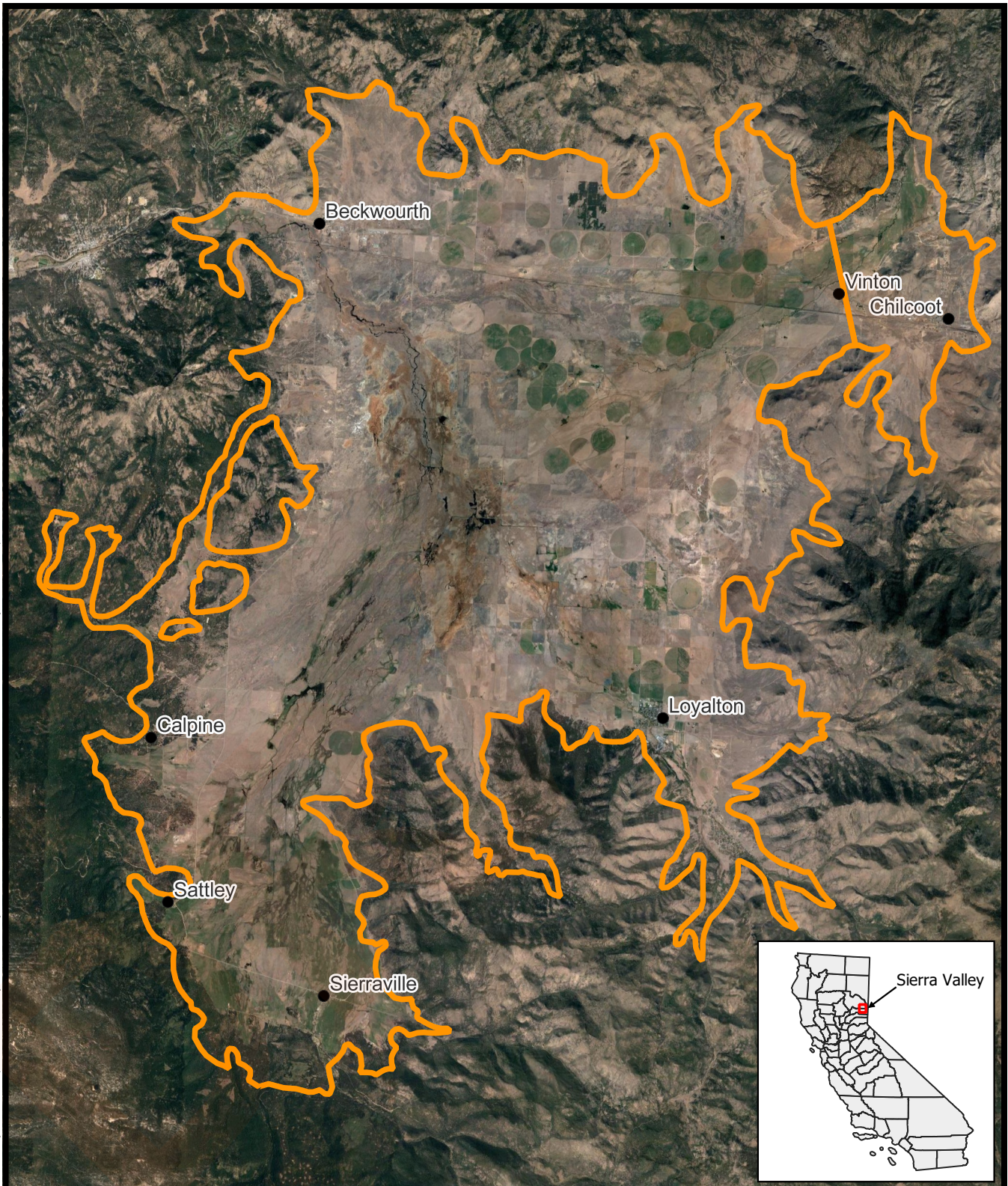
Progress has been made on multiple Projects and Management Actions (PMAs) that move the basin towards implementation of the Groundwater Sustainability Plan (GSP), as well as securing funding for PMAs identified in the GSP. These activities include:

- Preparation and successful submission of a Round 2 GSP Implementation Grant
- Agricultural well flow meter replacement and standardization
- Irrigation efficiency improvements
- Expansion of the land subsidence and shallow groundwater monitoring networks
- Groundwater recharge opportunity analysis

## 1. Introduction

The Sierra Valley groundwater basin (the Basin) is comprised of the Sierra Valley subbasin (5-012.01) and Chilcoot subbasin (5-012.02). Both subbasins are managed as a single basin cooperatively by the Sierra Valley Groundwater Management District (SVGMD) and Plumas County, which act as the Groundwater Sustainability Agencies (GSAs) for the Basin. Following the submittal of the Sierra Valley Groundwater Sustainability Plan (GSP) on January 28th, 2022, the GSAs are required to submit an annual report for the preceding water year (October 1 through September 30) to DWR by April 1st (23 CCR §356.2).

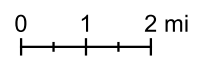
The annual report provides a summary of hydrologic conditions and water use in the Basin (Figure 1) using observed data from monitoring networks and/or estimated using best available methods. This WY 2022 annual report provides a brief summary of Basin water use and changes in groundwater storage during the period from October 1st, 2021 to September 30th, 2022 and context for conditions relative to sustainable management criteria (SMC).



Source: <https://gis.water.ca.gov/>

**Explanation**

- City or Town
- Groundwater Basin Boundary



**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Location Map and Groundwater Basin Boundary**

Figure 1

This document has been prepared in accordance with the requirements for annual reports as identified in the Sustainable Groundwater Management Act (SGMA). More detailed analysis and discussion of long-term hydrologic trends will be included in the periodic evaluation of the GSP the GSAs are required to perform at least every five years (23 CCR §356.2).

For additional clarification or more detailed information on the basin plan area or conditions, please refer to the Sierra Valley GSP (<https://sgma.water.ca.gov/portal/gsp/preview/125>). It is important to note that data gaps and missing information continue to be a focus as the GSAs gather additional information for better analysis and decisions.

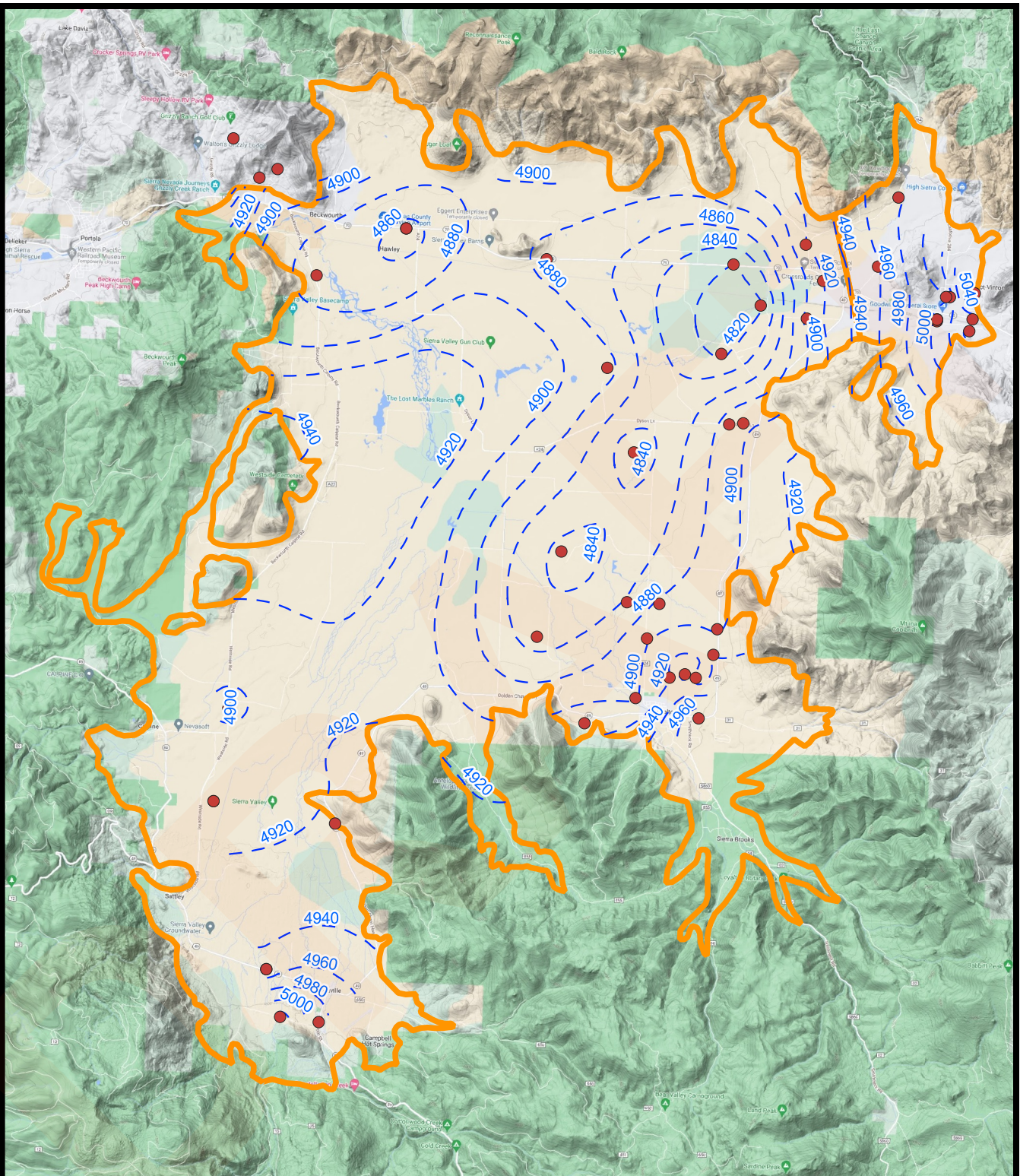
## 2. Groundwater Elevations

Groundwater elevation contour maps for the upper and lower aquifers in the spring of 2022 are shown in Figure 2 and Figure 3, respectively, and for the upper and lower aquifers in the fall of 2022 in Figure 4 and Figure 5, respectively. These maps depict the seasonal high (spring) and low (fall) water level elevations for the two principal aquifers (upper and lower) in the Basin. Spring and Fall water level elevations are defined as observations within a 42-day period centered on April 1st or October 1st. If a well has multiple observations within this period, then the value collected nearest to April 1st or October 1st is used.

Observed spring groundwater elevations in the upper aquifer (Figure 2) ranged from 4,815.58 to 5,177.91 ft above mean sea level (amsl), with an average elevation of 4,931.51 ft amsl. Spring groundwater elevations for the lower aquifer (Figure 3) ranged from 4,789.13 to 5,107.83 ft amsl, with an average elevation of 4,902.33 ft amsl. Groundwater elevations in the fall for the upper aquifer (Figure 4) ranged from 4,736.78 to 5,172.41 ft amsl, with an average elevation of 4,918.36 ft amsl. Fall observations from the lower aquifer (Figure 5) showed groundwater elevations ranged from 4,736.78 to 5,092.93 ft amsl, with an average elevation of 4,876.92 ft amsl.

Flow patterns in the Basin are complex and heavily influenced by the spatial distribution of recharge, spatial distribution of aquifer hydraulic properties, location and orientation of faults that act as groundwater flow barriers, and groundwater pumping. On the west side of the Basin flow is generally from south to north, towards the surface water outlet of the Basin located to the northwest, which is the headwaters of the Middle Fork Feather River (MFFR). Flow on the east side of the Basin is generally from the margins of the Basin towards the pumping center located in the vicinity of wells W5 and DMW 7 (see Figure 3 for location or search via the online database management system (DMS) at <https://sierra-valley.gladata.com/>).

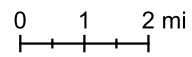




Source: <https://sierra-valley.gladata.com>

**Explanation**

- Monitoring Well
- Groundwater Basin Boundary
- Water Level Contour (ft amsl)

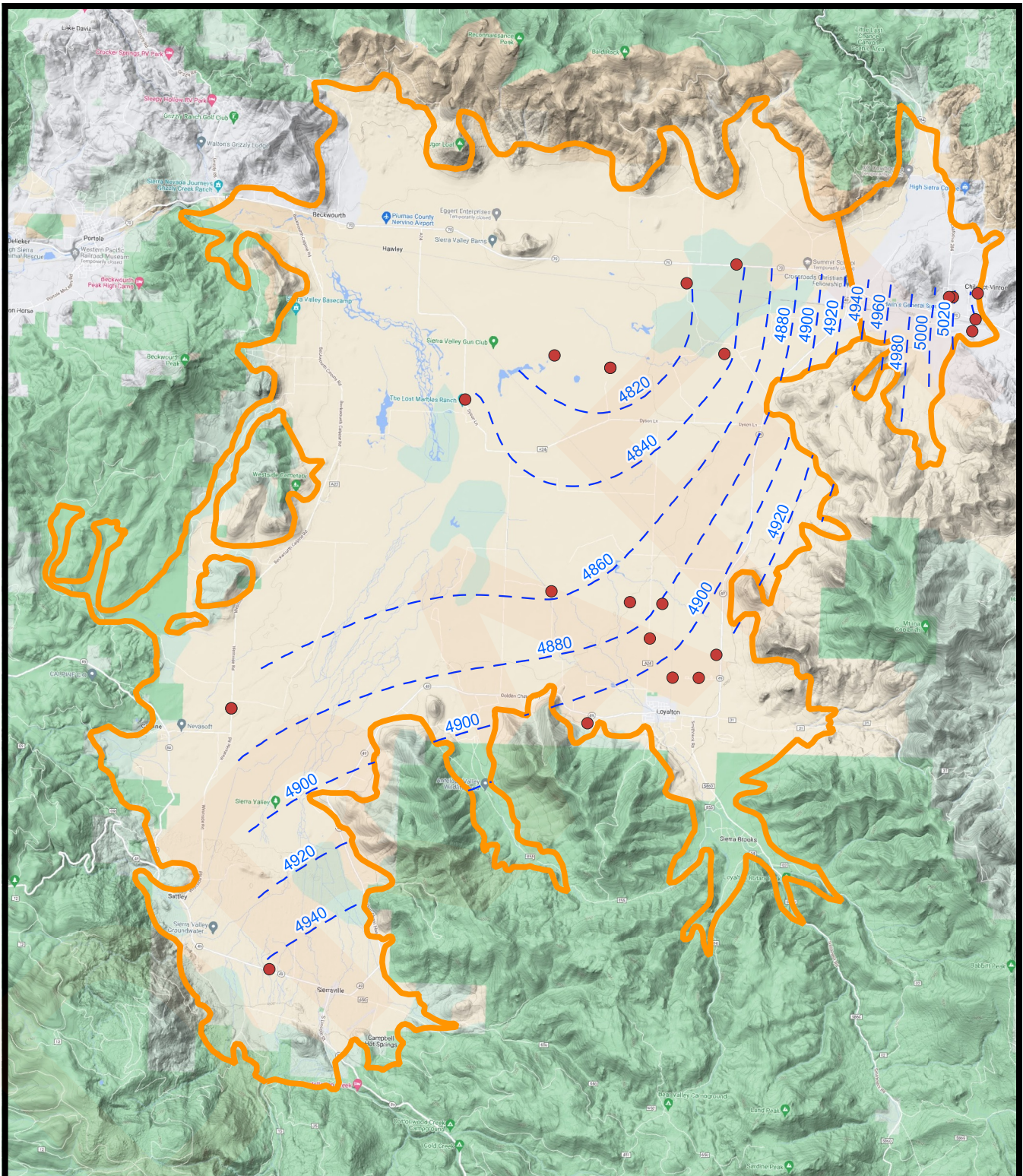


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Groundwater Elevations  
Upper Aquifer Spring 2022**

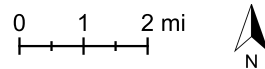
Figure 2



Source: <https://sierra-valley.gladata.com>

### Explanation

- Monitoring Well
- Groundwater Basin Boundary
- - - Water Level Contour (ft amsl)

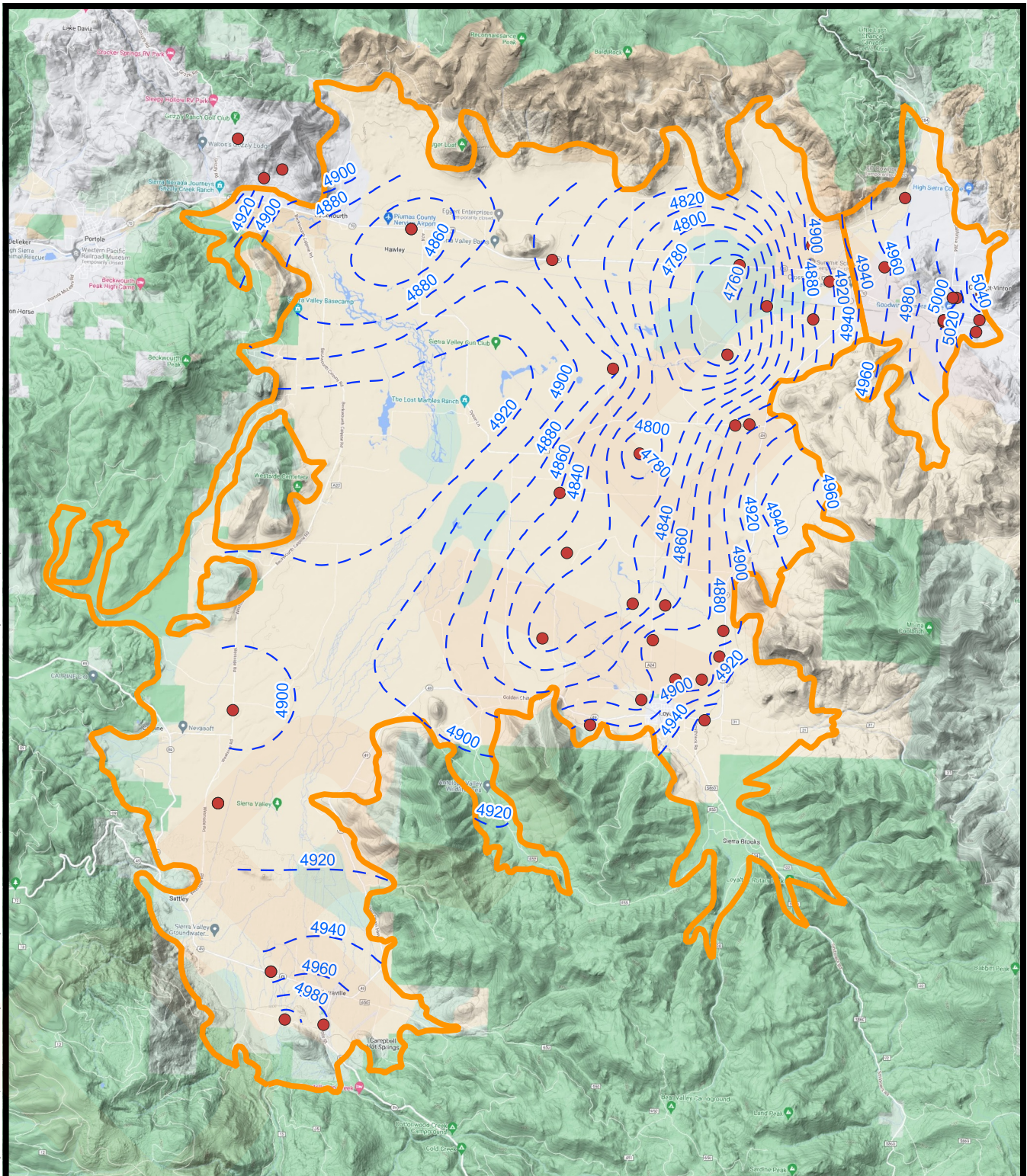


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Groundwater Elevations  
Lower Aquifer Spring 2022**

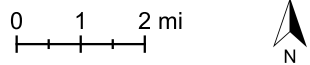
Figure 3



Source: <https://sierra-valley.gladata.com>

### Explanation

- Monitoring Well
- Groundwater Basin Boundary
- - - Water Level Contour (ft amsl)

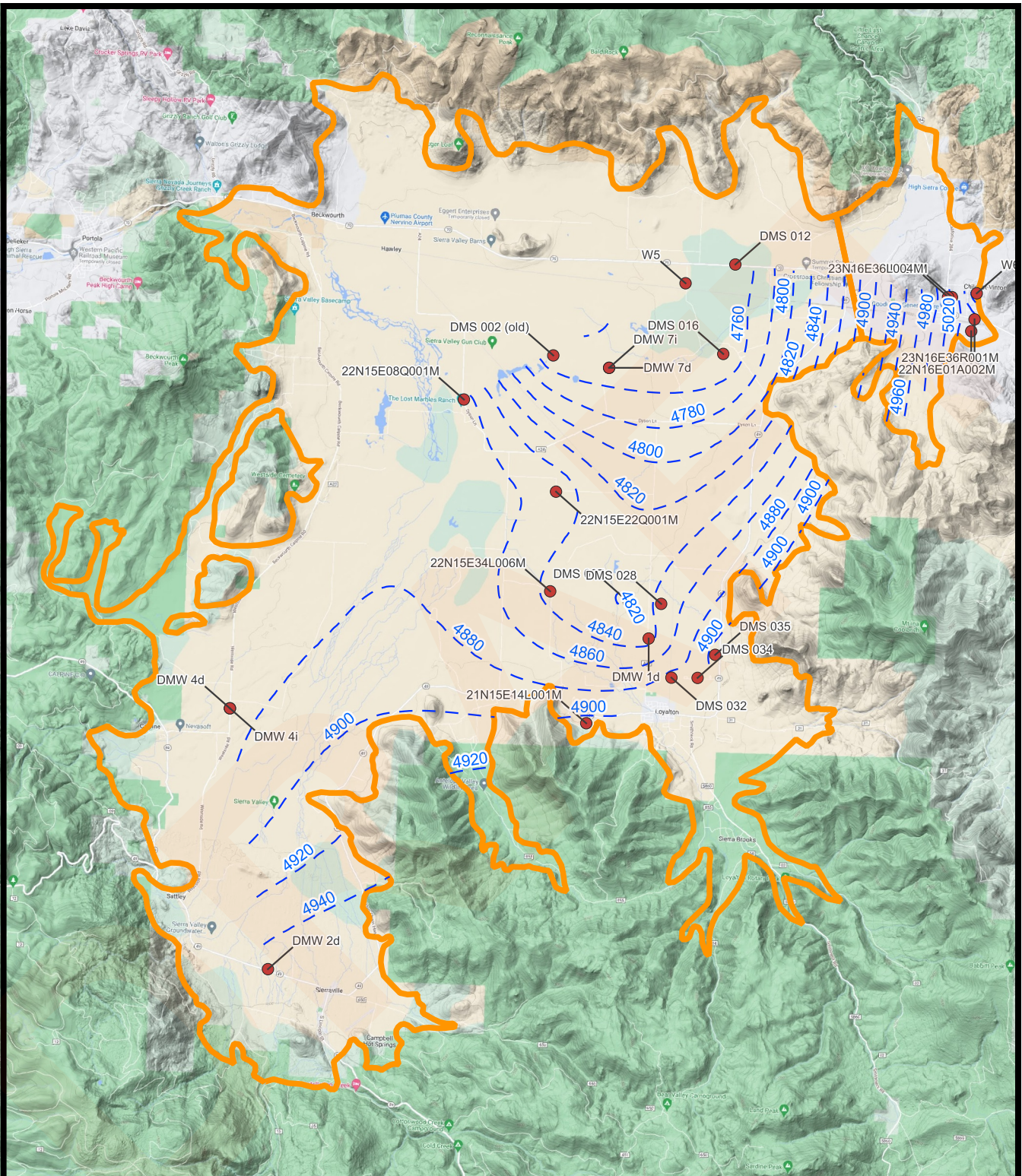


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Groundwater Elevations  
Upper Aquifer Fall 2022**

Figure 4

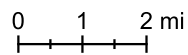


Source: <https://sierra-valley.gladata.com>

### Explanation

- Monitoring Well
- Water Level Contour (ft amsl)

Groundwater Basin Boundary



**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Groundwater Elevations  
Lower Aquifer Fall 2022**

Figure 5

Observed groundwater elevation changes from October 2021 to October 2022 in the upper aquifer ranged from -35.90 to +7.00 ft with an average change of +0.14 ft. For the lower aquifer, groundwater elevation changes ranged from -12.60 to +14.54 ft with an average of -0.14 ft.

The reporting metric “SMC Status” was developed to better compare groundwater elevations observed at representative monitoring points (RMP) in the context of their unique SMC. This metric describes groundwater elevations relative to the “operational range” of the well and allows for normalized reporting of groundwater elevations at RMPs. The operational range is defined as the elevation range between the measurable objective (MO) and minimum threshold (MT) for each RMP. SMC Status was classified into the following categories:

- Near or Above MO: Water levels equal to or greater than 75% of the operational range
- Within Central Operational Range: Water levels within 25% to 75% of operational range
- Near MT: Water levels less than 25% of operational range but above MT
- At or Below MT: Water levels at or below MT

Figure 6 shows an example of this metric applied to the hydrograph of well 22N15E34L006M. Figure 7 and Figure 8 show the spatial distribution of SMC Status for spring water level observations in the upper and lower aquifer, respectively. Fall SMC Status for the upper and lower aquifer is shown in Figure 9 and Figure 10, respectively. Hydrographs for all RMPs can be found in Appendix A.

Groundwater conditions in the spring were generally near or above the MO for each RMP in both the upper and lower aquifers. Decreases in groundwater levels due to the critically dry water year resulted in fall conditions for the upper aquifer where 33% of RMPs were near or above the MO, 37% were within the central operational range, 19% were near the MT, and 11% of RMPs were at or below the MT.

Fall conditions for the lower aquifer showed 38% of RMPs were near or above the MO, 31% were within the central operational range, 15% near the MT, and 15% of RMPs were at or below the MT.

There did not appear to be a definitive spatial pattern in SMC Status in the spring or fall nor for the upper or lower aquifer.

### 3. Groundwater Extractions

The Sierra Valley Groundwater Management District (SVGMD) meters all active large-capacity non-municipal wells (defined as wells that produce 100+ gallons per minute or wells with a casing diameter of 6 inches or greater) in the Basin.

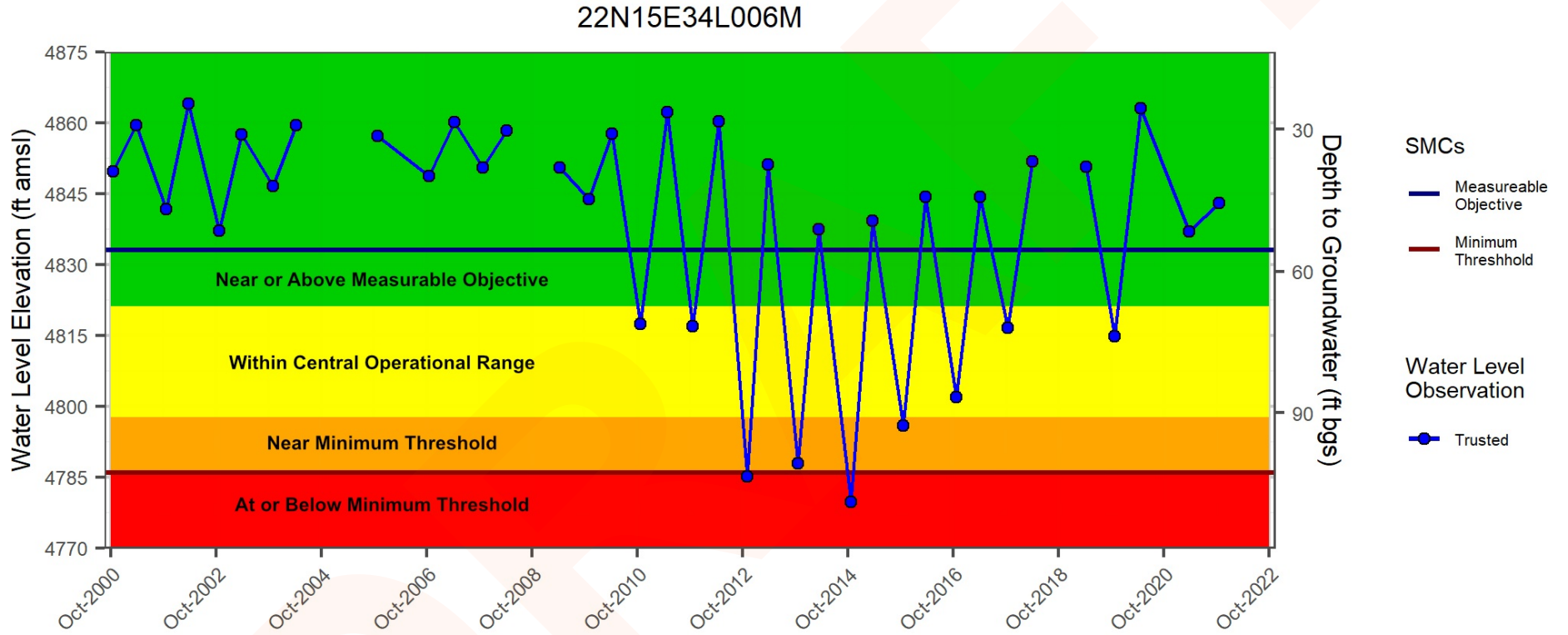


Figure 6

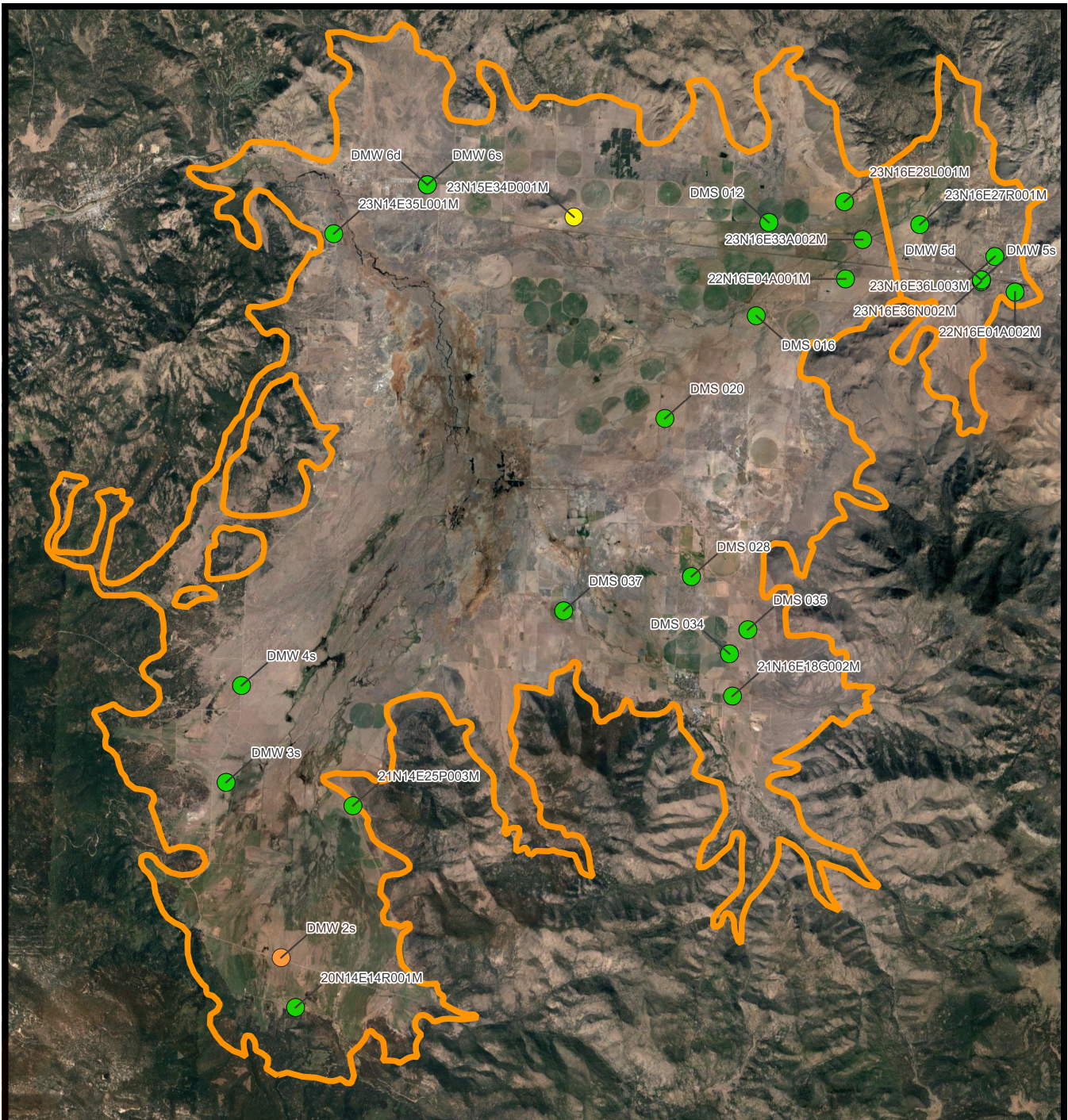


**Sierra Valley  
Groundwater  
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03/08/2023



Sierra Valley Annual Report WY 2022  
**Example SMC Status Categories**

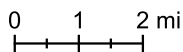


**Explanation**

**SMC Status**

- Near or Above Measureable Objective
- Within Central Operational Range
- Near Minimum Threshold
- At or Below Minimum Threshold

Groundwater Basin Boundary



**Notes:**

1. See Figure 6 for SMC Status definition

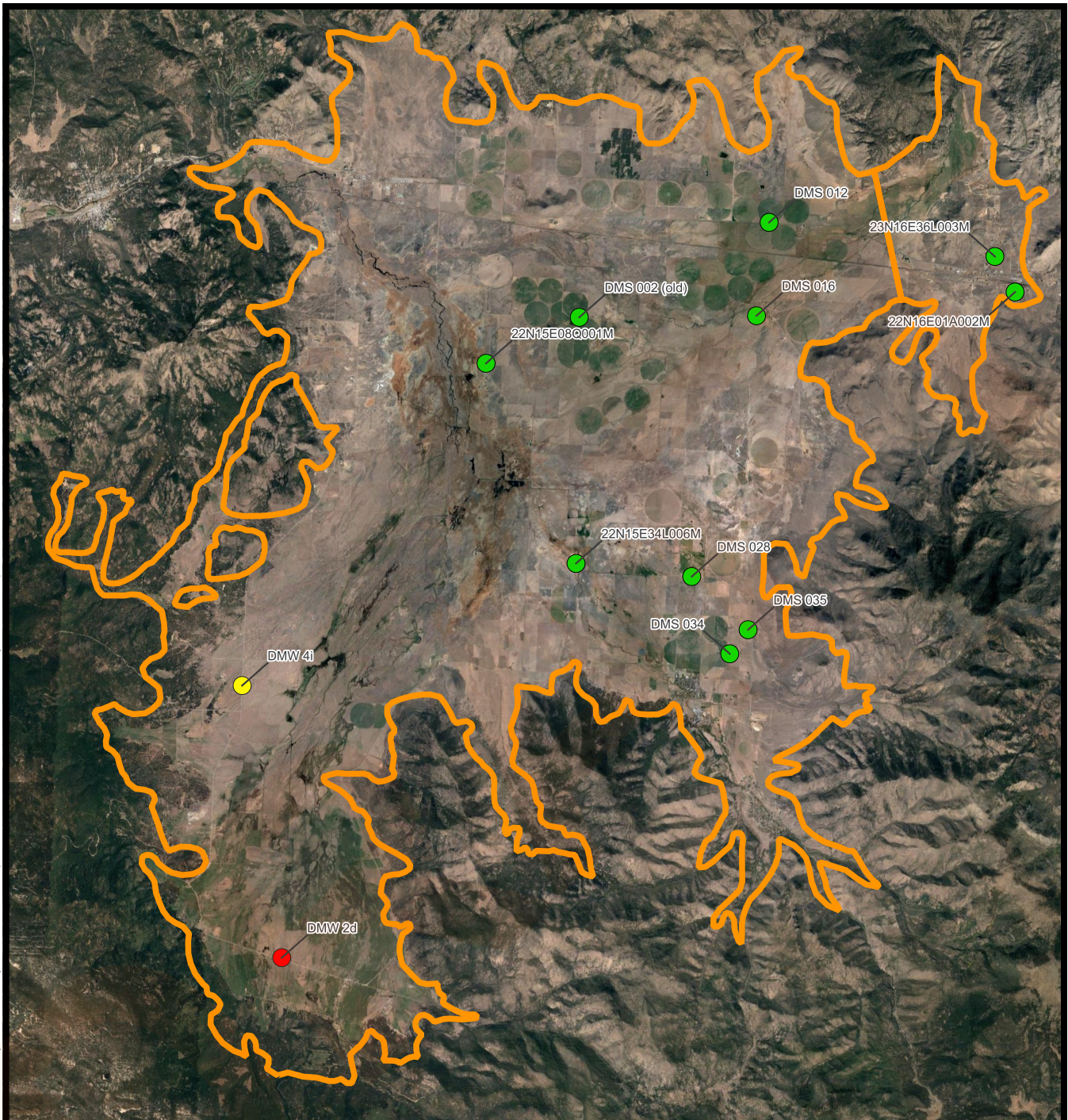


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Sustainable Management Criteria Status  
Upper Aquifer Spring 2022**

Figure 7



### Explanation

#### SMC Status

- Near or Above Measureable Objective
- Within Central Operational Range
- Near Minimum Threshold
- At or Below Minimum Threshold

Groundwater Basin Boundary



0 1 2 mi

#### Notes:

1. See Figure 6 for SMC Status definition

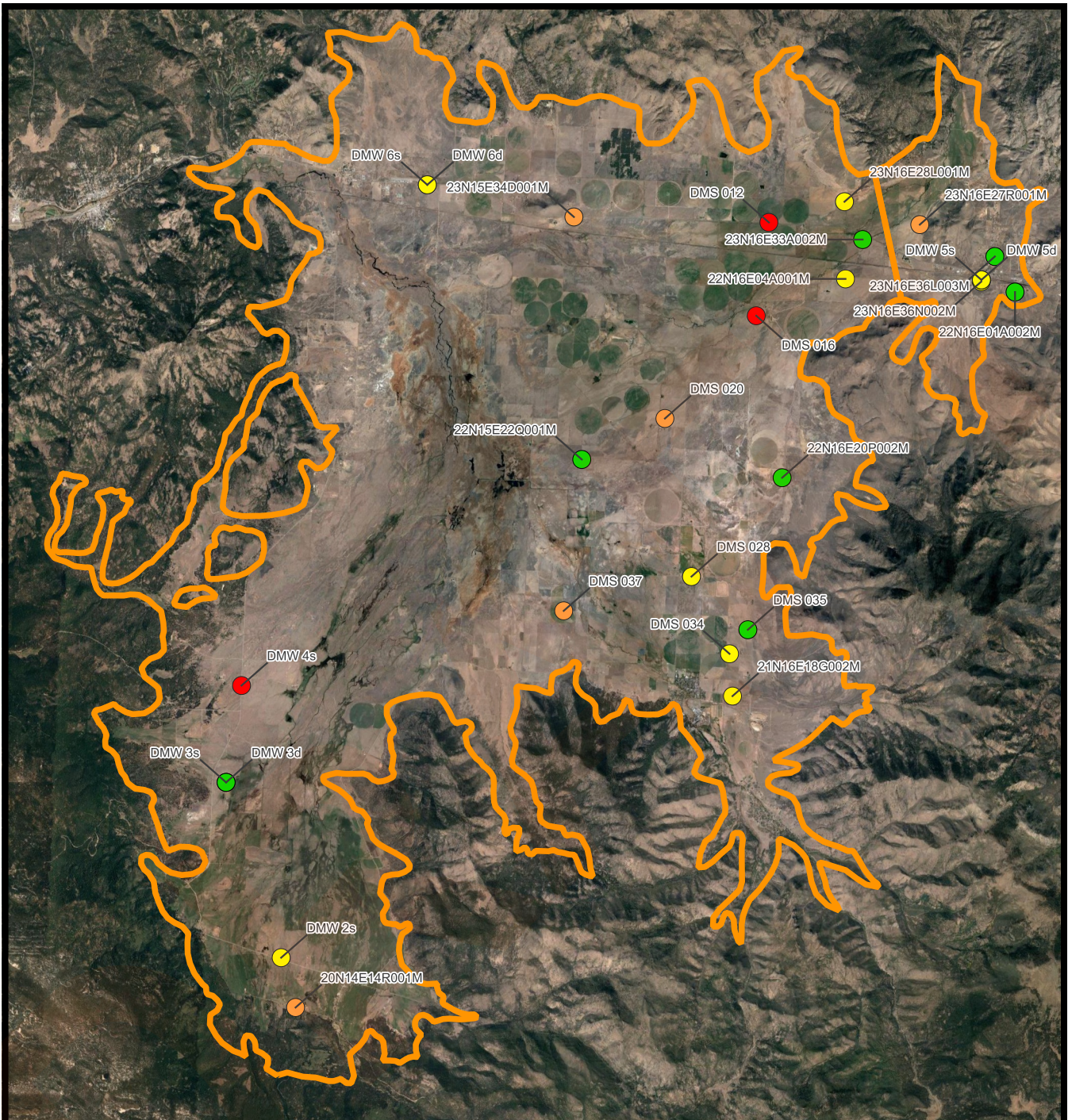


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Sustainable Management Criteria Status  
Lower Aquifer Spring 2022**



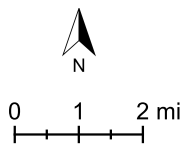


**Explanation**

**SMC Status Fall Upper Aquifer**

- Near or Above Measureable Objective
- Within Central Operational Range
- Near Minimum Threshold
- At or Below Minimum Threshold

Groundwater Basin Boundary



**Notes:**

1. See Figure 6 for SMC Status definition

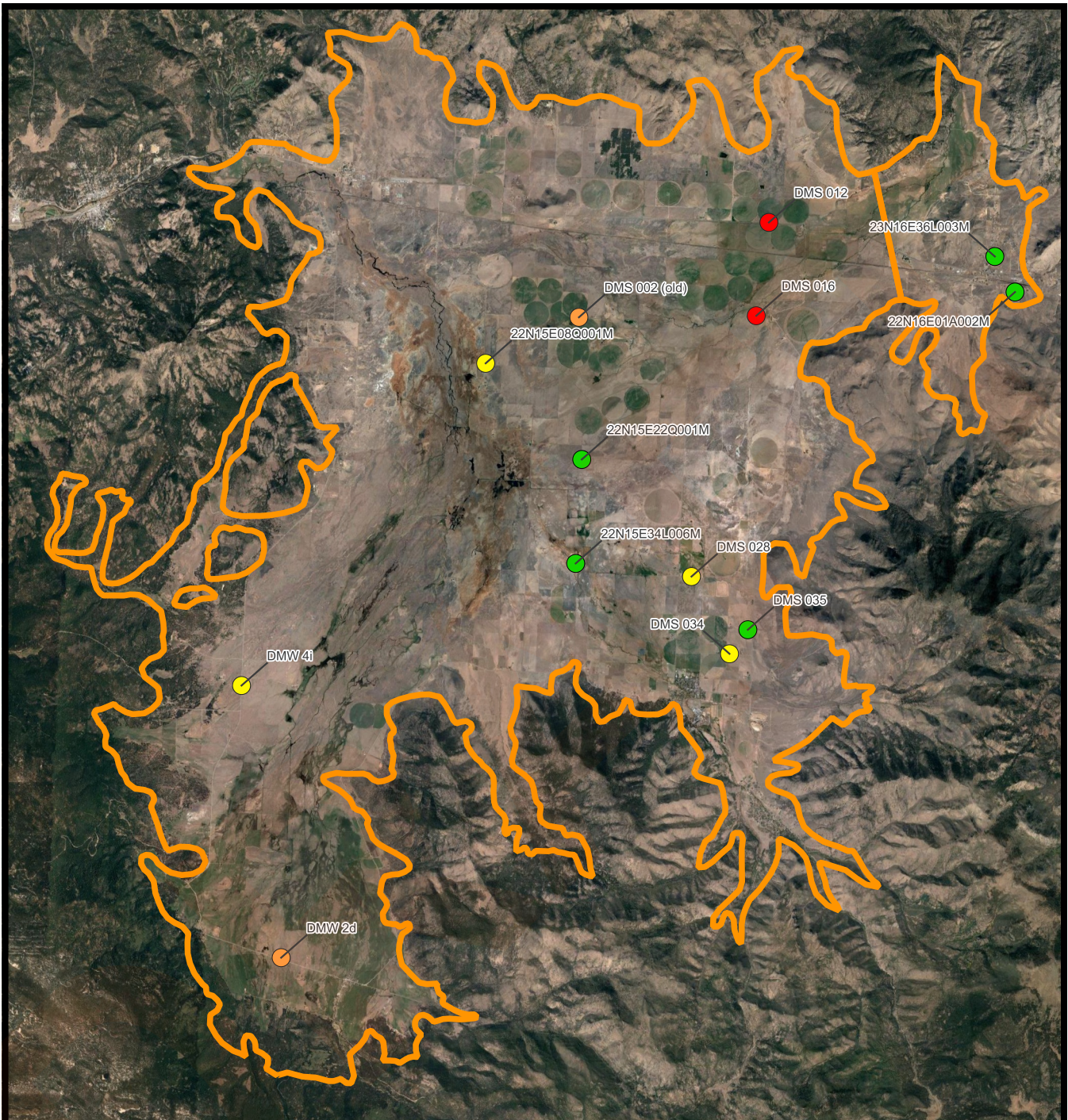


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Sustainable Management Criteria Status  
Upper Aquifer Fall 2022**

Figure 9

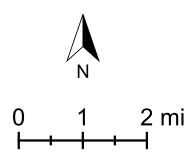


**Explanation**

**SMC Status**

- Near or Above Measureable Objective
- Within Central Operational Range
- Near Minimum Threshold
- At or Below Minimum Threshold

Groundwater Basin Boundary



Notes:  
1. See Figure 6 for SMC Status definition



**Sierra Valley Annual Report WY 2022  
Sustainable Management Criteria Status  
Lower Aquifer Fall 2022**

Figure 10

Municipal pumping is measured on a monthly basis by the respective entity and reported to SVGMD. Municipal pumping from Sierra County Water Works District #1 (Calpine) is included in the groundwater extraction volumes presented in this Annual Report despite the wells being located just outside of the Basin boundary and predominantly screened in bedrock. Inclusion or exclusion of annual groundwater extractions from the Calpine wells would not materially change any conclusions due to the relatively small annual extraction volume of approximately 50 acre-ft/yr (AFY).

The number of domestic wells has been estimated using two methods:

- Well Completion Reports (WCRs) – available from DWR
- County Parcel Coverage with Use Code Indicator and Description

For the first method, some assumptions were made because the well completion reports do not differentiate between inactive and active wells. The number of wells has been assessed based on assumed useful well life of 31 and 40 years.

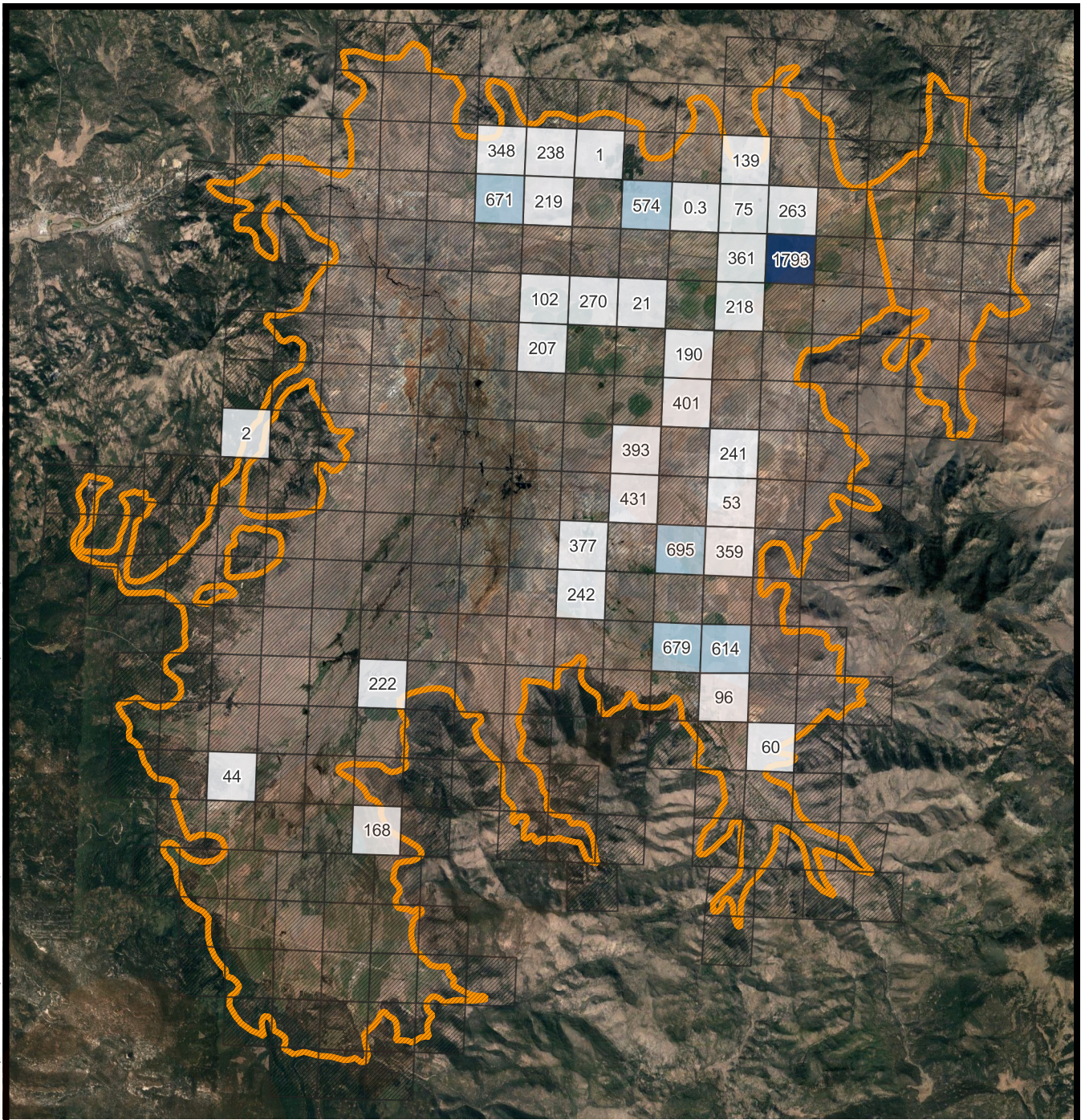
For the second method, county parcel coverage was provided by Sierra and Plumas counties and it identifies 'residential' parcels. Assumptions included counting for one domestic well per residential parcel. Parcels within a public water supply system boundary have been excluded.

Comparing the two methods, a preliminary estimate of domestic wells provided about 500 domestic wells active in the basin. The majority of domestic wells are located along the margins of the valley and based on available well log information, typically screened in fractured bedrock. Therefore, estimated domestic groundwater extraction volume was not included in the groundwater or total water use calculations. Using the assumption of 2 AFY of water use (maximum amount to be classified as a de minimis user), the estimated domestic water use is about 1000 af/yr in the valley. This number and the underlying assumptions will need to be further refined during GSP implementation.

Estimated groundwater extractions for WY 2022 grouped by water use sector and measurement method are shown in Table 1. Groundwater pumping within each public land survey system (PLSS) section (1 mi<sup>2</sup>) shows the spatial distribution of agricultural (Figure 11), municipal and industrial (Figure 12), and total (Figure 13) groundwater extractions within the Basin. In total, groundwater

**Table 1. Groundwater Extractions**

<b>Sector</b>	<b>Method</b>	<b>GW Extraction Volume (AF)</b>	<b>Accuracy (%)</b>	<b>Range (AF)</b>
Agriculture	Totalizer	10,766	± 5	10,228 - 11,305
Municipal and Industrial	Totalizer	718	± 5	682 - 754
<b>Total</b>		<b>11,484</b>		<b>10,910 - 12,059</b>



**Explanation**

Extraction Volume (AF)

No Extractions

0 - 500

500 - 1000

1000 - 1500

1500 - 2000

Groundwater Basin Boundary

0 1 2 mi



**Notes:**

1. Annual groundwater pumping aggregated by 1 mi<sup>2</sup> PLSS sections
2. Labels indicate volume pumped in AF
3. Total agricultural pumping totaled 10,766 AF

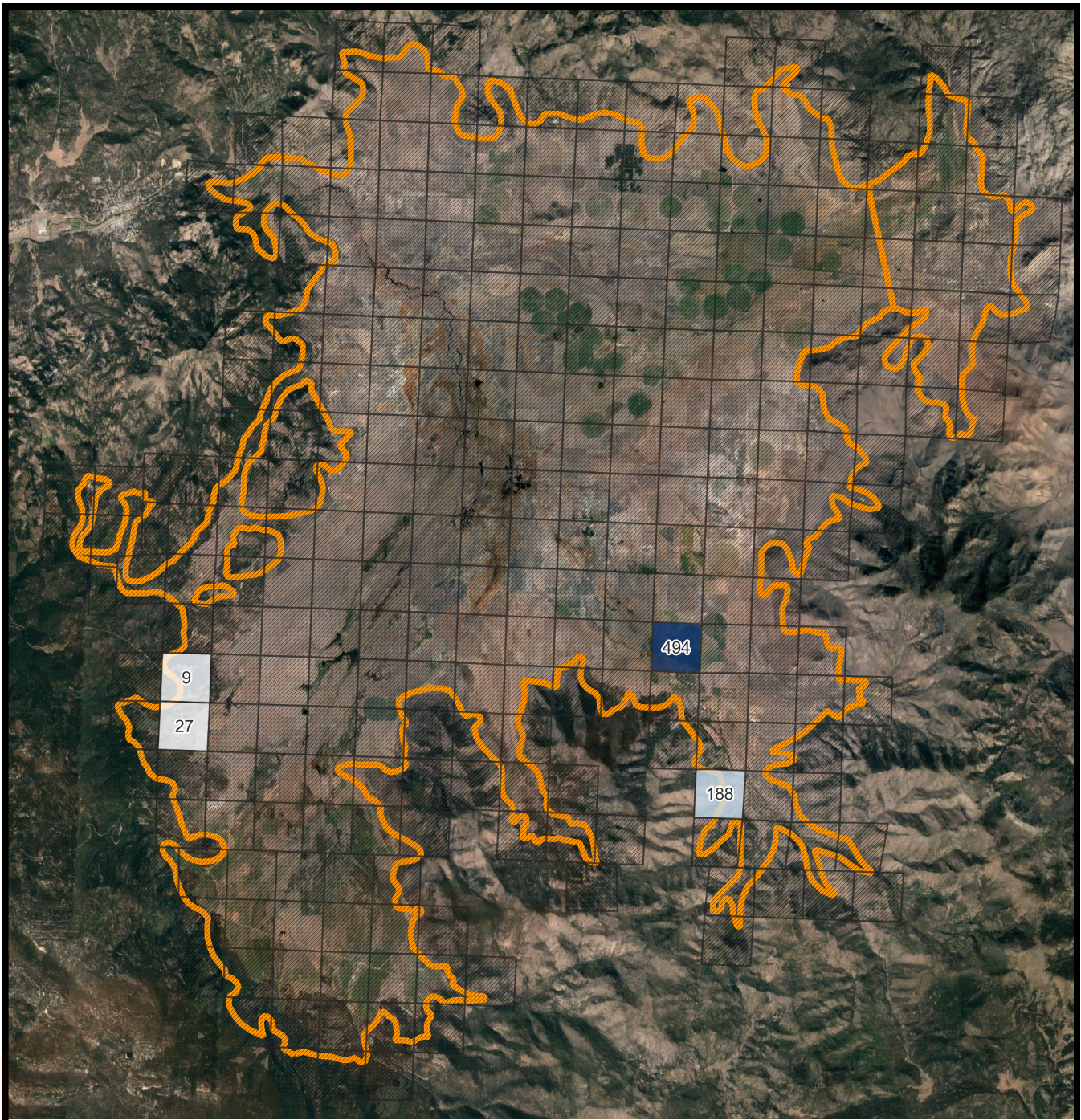


**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Agricultural Groundwater Extractions**

Figure 11



**Explanation**

Extraction Volume (AF)	0 - 100	300 - 400	Groundwater Basin Boundary
No Extractions	100 - 200	400 - 500	Boundary
0 - 100	0 1 2 mi		N
100 - 200			
200 - 300			

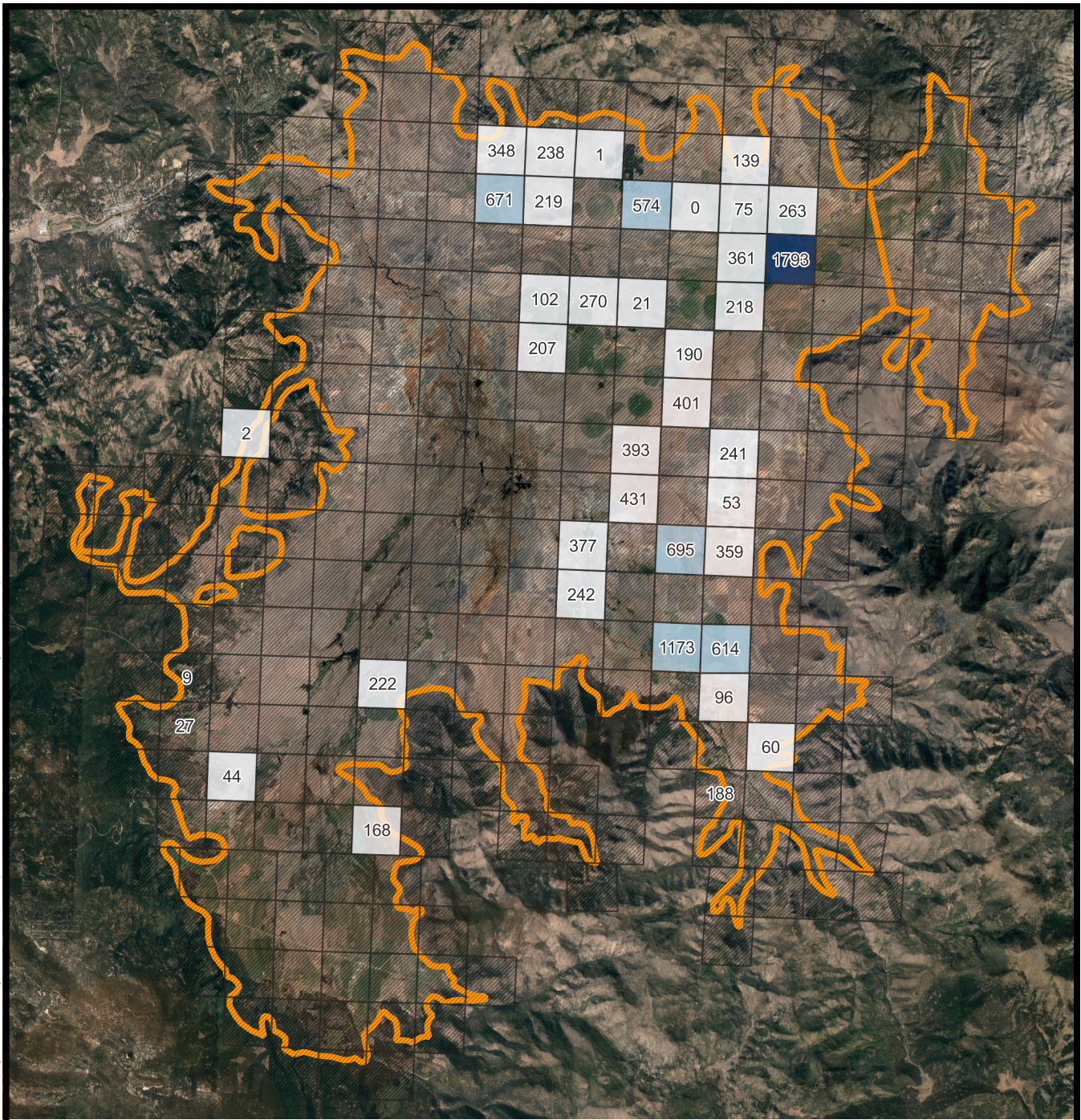
**Notes:**

1. Annual groundwater pumping aggregated by 1 mi<sup>2</sup> PLSS sections
2. Labels indicate volume pumped in AF
3. Total municipal and industrial pumping totaled 718 AF



**Sierra Valley Annual Report WY 2022  
Municipal and Industrial Groundwater Extractions**

Figure 12



**Explanation**

Pumping (Total)

No Extractions

0 - 500

500 - 1000

1000 - 1500

1500 - 2000

Groundwater Basin Boundary

0 1 2 mi



**Notes:**

1. Annual groundwater pumping aggregated by 1 mi<sup>2</sup> PLSS sections
2. Labels indicate volume pumped in AF
3. Total groundwater pumping totaled 11,484 AF



**Sierra Valley  
Groundwater  
Management District**



**Sierra Valley Annual Report WY 2022  
Total Groundwater Extractions**

Figure 13

pumping equaled 11,484 AF. Agricultural beneficial uses accounted for about 94% of total groundwater extractions for WY 2022.

## 4. Surface Water Supply

Surface water used in the Basin is grouped by source and measurement method and summarized in Table 2. Surface water is sourced from streams that enter Sierra Valley along the margin, releases from Frenchman Reservoir and Lake Davis, and imported water from the Little Truckee River. Observed flow rates for releases from Lake Davis and Frenchman Reservoir, and imports from the Little Truckee River, are available from the Sierra Valley Watermaster.

All imported water from the Little Truckee River diversion is used beneficially for agricultural purposes, as are all contract and water right releases from Frenchman Reservoir (diverted from Little Last Chance Creek). Up to 800 AFY is diverted from Big Grizzly Creek (fed by releases from Lake Davis) to flood irrigate the Ramelli Ranch, owned by the Plumas National Forest. Specific diversion data for Ramelli Ranch are not currently available, but reduction of the diversion volume is not common (Joe Hoffman, personal communication).

Flow data for streams entering Sierra Valley are sporadic and diversion volumes are generally not reported. Total diversion volume from ungauged local streams was calculated as the difference between total surface water use estimated using SVHSM and reported inflows from the Little Truckee River diversion, Frenchman Reservoir, and Lake Davis.

Imports from the Little Truckee River diversion totaled approximately 8,566 AF for WY 2022. Contract and water right releases from Frenchman Reservoir and Lake Davis were about 7,775 AF and 800 AF,

**Table 2. Surface Water Use**

Surface Water Source	Method	Annual Volume Used (AF)	Accuracy (%)	Range (AF)
Local Imported Supplies	Weir	8,566	± 5 %	8,138 - 8,995
Local Supplies	Weir	7,775	± 5 %	7,387 - 8164
	Estimated from model results and reported diversion data	3,450	± 20 %	2,760 - 4,139
	Estimated from previously reported diversions	800	± 33 %	536 - 800 <sup>a</sup>
<b>Total</b>		<b>20,591</b>		<b>18,821 - 22,098</b>

a. Upper limit established as 800 AFY

respectively. Diversions from ungauged streams entering the Basin were estimated to be 3,450 AF. Total volume of surface water used in the Basin during WY 2022 was estimated to be 20,591 AF. Surface water use is uncertain due to lack of flow and diversion data for most streams that enter Sierra Valley, which limits model calibration efforts. Improvement of surface water diversion observations from local streams would help fill this data gap.

## 5. Total Water Use

Total water use in the Basin is grouped by water use sector and measurement method and shown in Table 3. Total water volume used in the Basin during WY 2022 was estimated to be 32,075 AF.

As discussed in Section 4 above, flow data for streams entering Sierra Valley are sporadic and surface water diversion volumes are not well-reported. Therefore, total water use is estimated using the best available data and tools.

## 6. Change in Groundwater Storage

Observed changes in water levels from Fall 2021 to Fall 2022 for the upper and lower aquifers are shown in Figure 14 and Figure 15, respectively. Volumetric change in groundwater storage for the Basin was estimated using the Sierra Valley Hydrogeologic System Model (SVHSM).

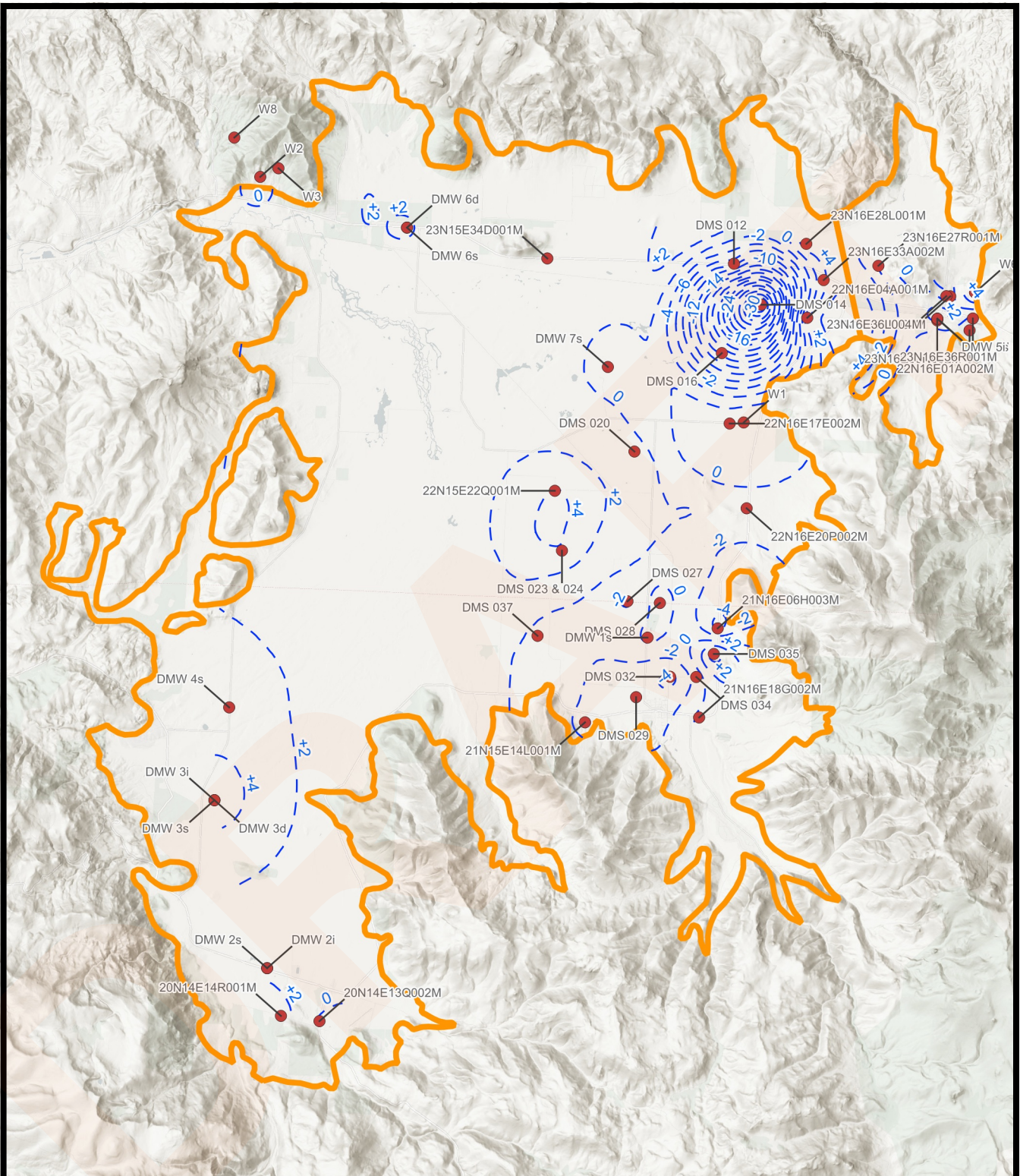
Total change in groundwater in storage in the Basin over WY 2022 was estimated to be -8,817 AF. A negative change in annual storage is expected due to critically dry conditions for WY 2022.

**Table 3. Total Water Use**

Sector	Method	Total Annual Volume (AF)	Accuracy (%)	Range (AF)
Agriculture	Totalizer	10,766	± 5 %	10,228 - 11,305
	Weir	16,341	± 5 %	15,525 - 17,159
	Estimated from model results and reported diversion data	3,450	± 20 %	2,760 - 4,139
	Estimated from previously reported diversions	800	± 33 %	536 - 800 <sup>a</sup>
Agriculture Subtotal	-	31,357	-	29,049 - 33,403
Municipal and Industrial	Totalizer	718	± 5 %	682 - 754
<b>Total</b>		<b>32,075</b>		<b>29,731 - 34,157</b>

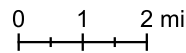
a. Upper limit established as 800 AFY





**Explanation**

- Monitoring Well
- Groundwater Basin Boundary
- - - Water Elevation Change (ft)

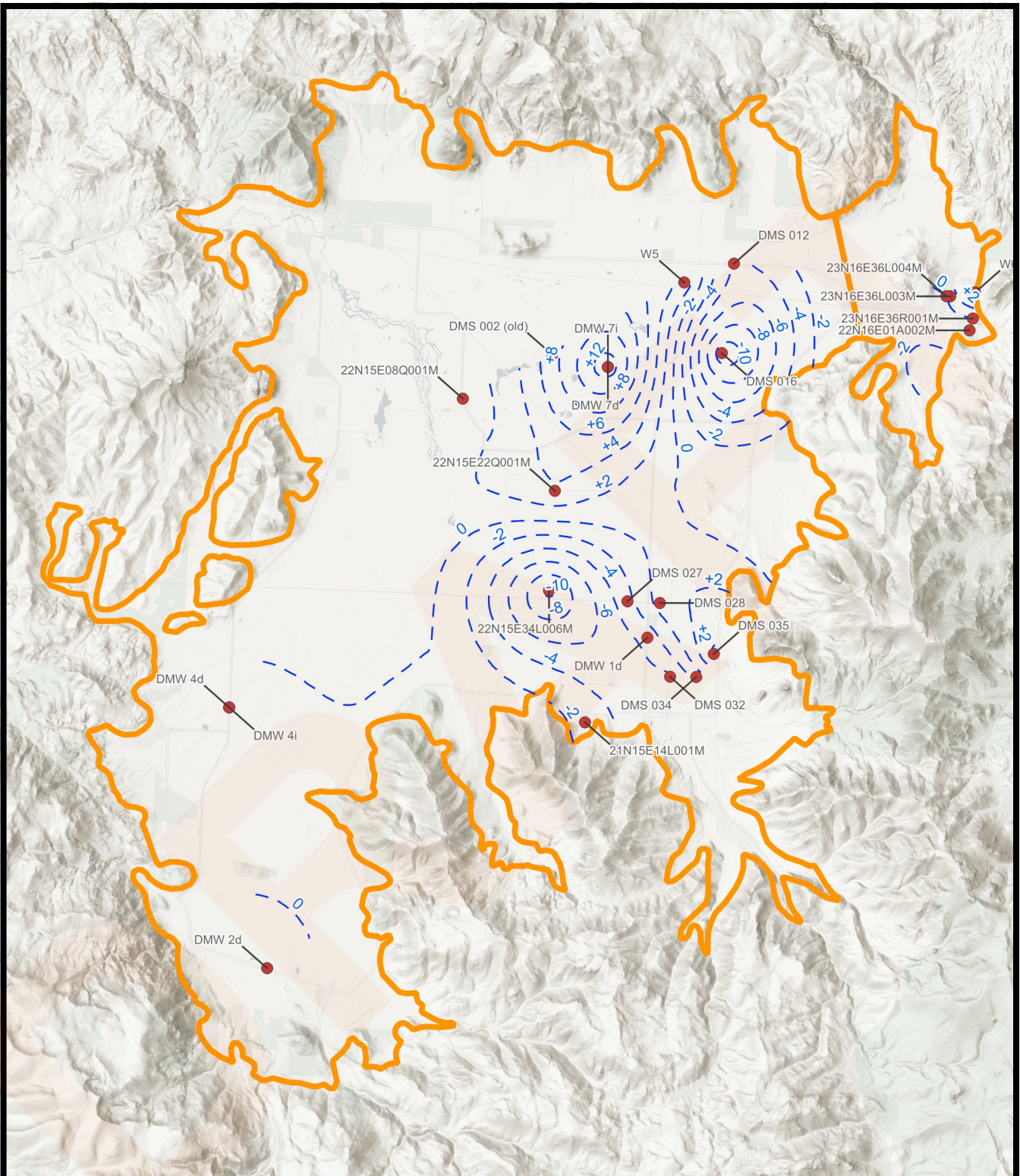


**Sierra Valley  
Groundwater  
Management District**



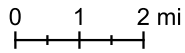
**Sierra Valley Annual Report WY 2022  
Change in Groundwater Elevations  
Upper Aquifer Fall 2021 - Fall 2022**

Figure 14



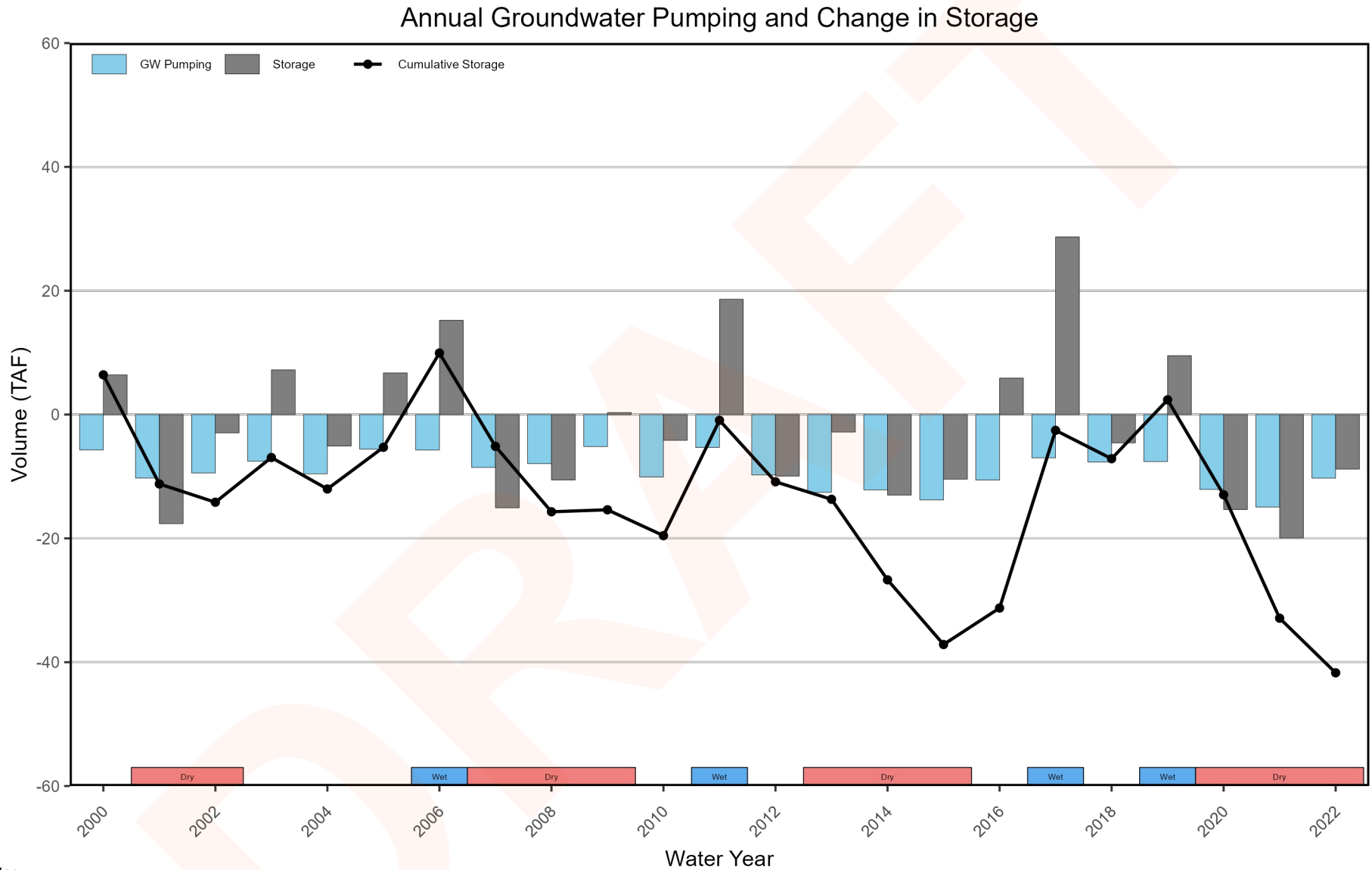
**Explanation**

- Monitoring Well
- Groundwater Basin Boundary
- - - Water Elevation Change (ft)



Sierra Valley Annual Report WY 2022  
Change in Groundwater Elevations  
Lower Aquifer Fall 2021 - Fall 2022

Figure 15



- Notes:
1. Negative GW pumping values indicate extractions from groundwater aquifer.
  2. Positive storage values indicate increasing groundwater levels.
  3. Change in storage values estimated using Sierra Valley Hydrogeologic System Model (SVHSM)

Figure 16



03/08/2023

Sierra Valley Annual Report WY 2022  
Groundwater Pumping and Change in Storage  
WY 2000-2022

Figure 16 shows annual groundwater pumping and change in storage, along with cumulative storage since WY 2000. Cumulative storage is reported as the total change in storage relative to October 1st, 1999, which is the beginning of the SVHSM historical simulation period. Through WY 2022, cumulative change in groundwater in storage since WY 2000 is estimated to be -41,713 AF.

## 7. Progress Towards GSP Implementation

The Sierra Valley GSP provided seven Tier I (existing) and 12 Tier II (potential) Projects and Management Actions (PMAs) to achieve sustainability goals (see Chapter 4 of the Sierra Valley GSP: <https://www.sierravalleygmd.org/files/e88626a57/Chapter+4+Projects+and+Management+Actions.pdf>). While the GSP is still being reviewed by DWR, implementation progress is underway. The sections below describe actions taken for securing funding, starting, continuing, or completing PMAs identified in the GSP during WY 2022.

### 7.1 SGM Round 2 Grant Application

SVGMD submitted an application for \$5.45M in grant funding through DWR's SGM Implementation Grant program in December 2022. The proposal includes activities associated with implementation and continued planning, development, and updating of the GSP for the Sierra Valley Groundwater Basin (Basin). The resulting updated GSP and implementation projects will incorporate appropriate Best Management Practices (BMPs) as developed by DWR, and will result in a more complete understanding of the groundwater basin to support long-term sustainable groundwater management.

The Work Plan includes five components:

- Component 1: Grant Administration
- Component 2: GSP Updates
- Component 3: Well Inventory
- Component 4: Irrigation Efficiency and Conjunctive Use
- Component 5: Groundwater Recharge

### 7.2 Agricultural Well Flow Meter Replacement and Standardization

SVGMD continues to maintain a list of large-capacity wells in the Sierra Valley Subbasin, including active metered wells and inactive wells. All active large-capacity agricultural wells are now and will continue to be fitted with flow meters owned and monitored by SVGMD.

In the past year, all large-capacity agricultural well meters were evaluated; a subset were retrofitted or replaced. All large-capacity agricultural well meter installations have been confirmed to be up to

manufacturer's specifications. GPS coordinates were also documented for all active large-capacity agricultural wells to support use in the monitoring network as needed.

### **7.3 Agricultural Irrigation Efficiency Improvements**

SVGMD conducted a review of irrigation practices in Sierra Valley and initiated a LEPA Irrigation Efficiency Demonstration Project. A technical memorandum was prepared that summarizes existing irrigation practices in Sierra Valley and potential irrigation efficiency improvements to reduce groundwater pumping. It includes details of the newly installed LEPA demonstration project at the Roberti Ranch, including guidelines for data collection.

### **7.4 Expansion of Shallow Groundwater and Land Subsidence Monitoring Network**

A 2022 Monitoring Networks Expansion O&M Manual was prepared that summarizes new equipment installations and provides guidance for monitoring, maintenance, and operation, including flow meters, four GDE monitoring sites, and four new land surface elevation (subsidence) monuments. Engineering packet with drawings, details, and specifications (i.e., Standard Operating Procedures or SOPs) is included.

In addition to adding the 4 new subsidence monuments, existing elevation monuments were identified for use in the network with the purpose of monitoring subsidence to facilitate determination of significant and unreasonable effects.

An initial Groundwater Dependent Ecosystems (GDE) Monitoring Network was installed and consists of four shallow monitoring wells with transducers and telemetry.

### **7.5 Groundwater Recharge Opportunity Analysis**

A technical memorandum, Review of Potential Water Supply Augmentation Projects and Management Actions, was prepared and provides an overview of surface water resources, surface water resource management, and recommendations for next steps in developing a groundwater recharge pilot project. Two areas of Sierra Valley have been identified as candidates for conducting these projects:

- A region in the south east corner of the Subbasin where excess winter flows from Smithneck Creek would be diverted for recharge
- A region in the north east corner of the Subbasin where excess winter flows from Little Last Chance Creek would be diverted for recharge.

SVGMD is pursuing grant funding to conduct both of these projects and will be working with ranchers and other stakeholders to identify feasible recharge sites in 2023.

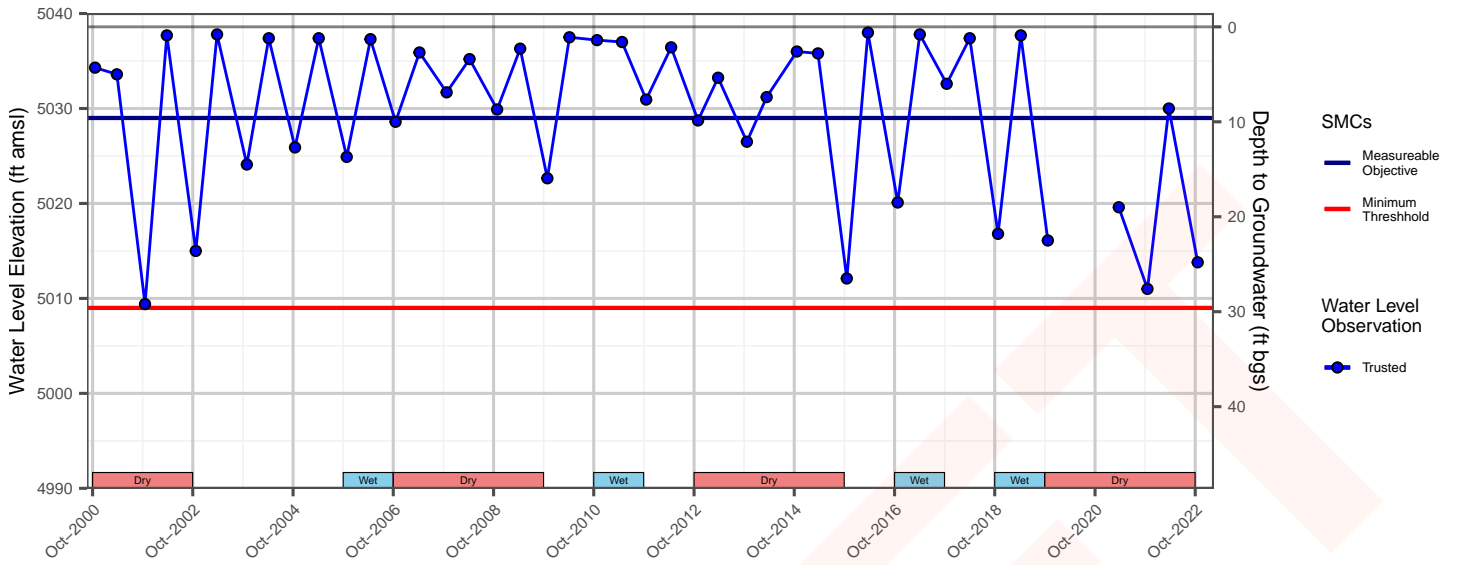
## 8. References

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- McGinley & Associates. 2022b. Sierra Valley Irrigation Review & LEPA Irrigation Efficiency Demonstration Program, Sierra Valley, Sierra and Plumas County, California. Technical Report.
- Sierra Valley Groundwater Management District (SVGMD). 2022a. Sierra Valley Subbasin Groundwater Sustainability Plan. <https://sgma.water.ca.gov/portal/gsp/preview/125>
- Sierra Valley Groundwater Management District (SVGMD). 2022b. DMS Technical Memorandum. Appendix 2-1 of Sierra Valley Subbasin Groundwater Sustainability Plan. <https://www.sierravalleygmd.org/files/51e7b778f/Appendix+2-1+DMS+Tech+Memo.pdf>
- Sierra Valley Groundwater Management District (SVGMD). 2022c. Sierra Valley Hydrogeologic System Model and Water Budget Report. Appendix 2-7 of Sierra Valley Subbasin Groundwater Sustainability Plan. <https://www.sierravalleygmd.org/files/5e6d7e8c6/Appendix+2-7+SVHSM+Model+Water+Budget+Report.pdf>
- Sierra Valley Groundwater Management District (SVGMD). 2022d. Sierra Valley Groundwater Basin GSP Annual Report Water Year 2021. Technical Report. <https://www.sierravalleygmd.org/files/f538cd202/Submitted+Annual+Report+4-1-22.pdf>

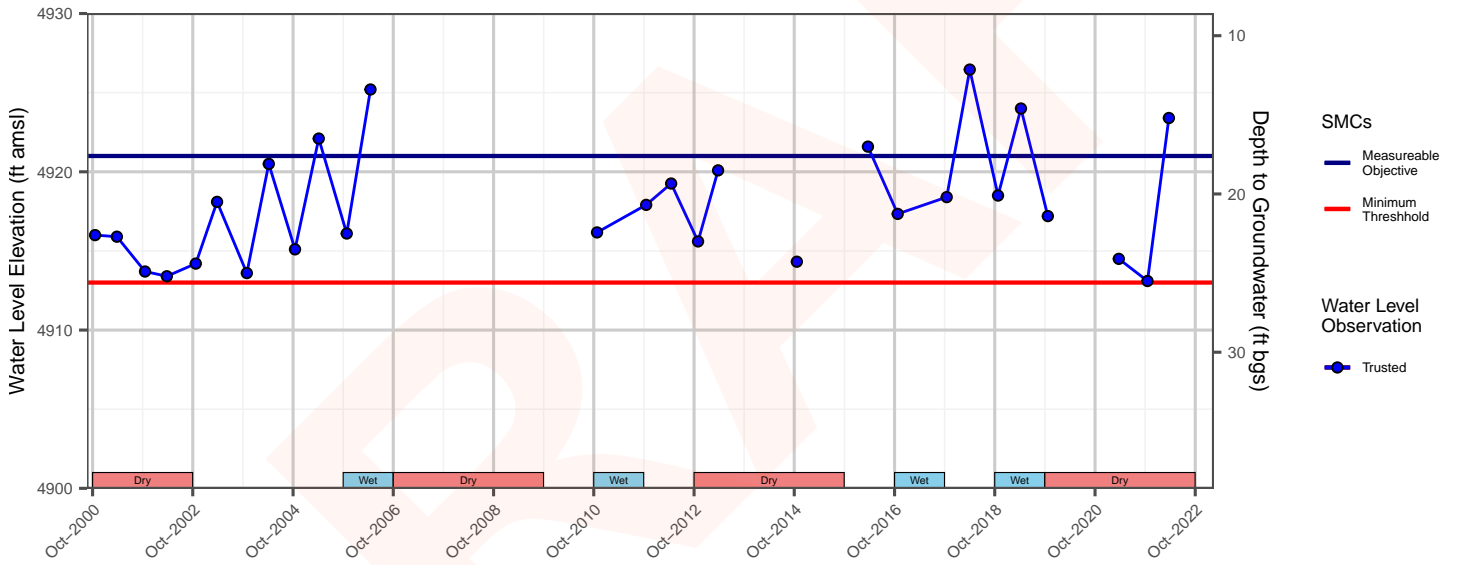
# Appendix A

## Representative Monitoring Point Hydrographs

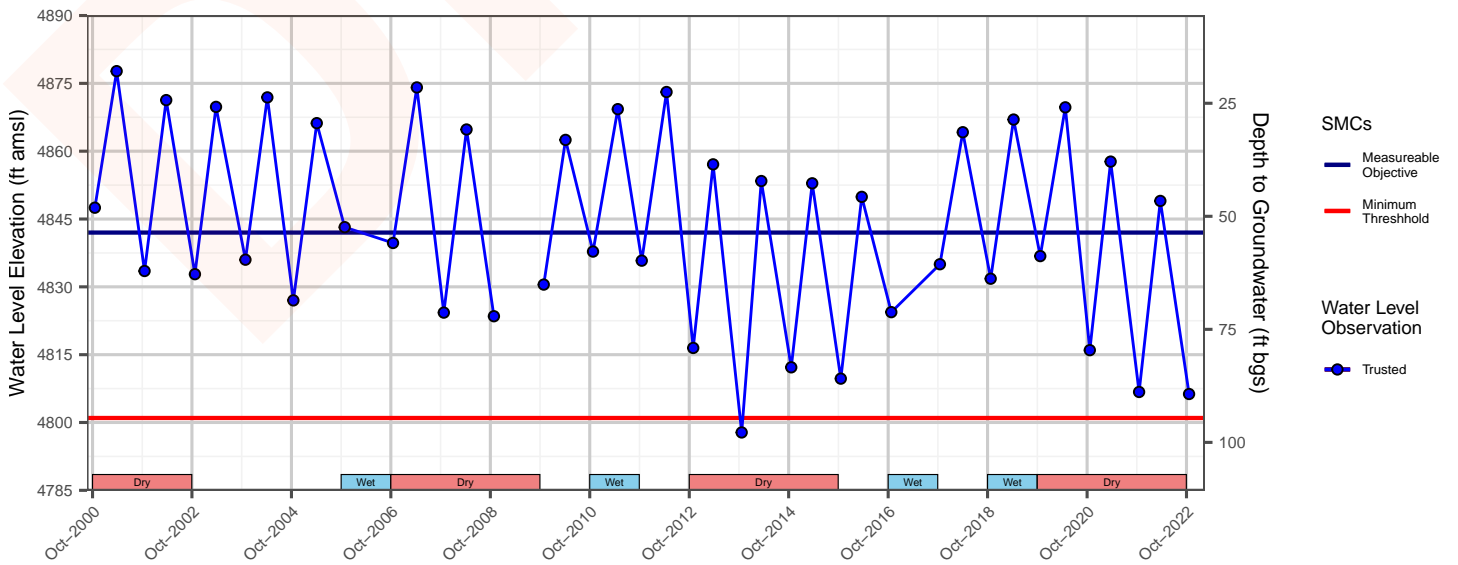
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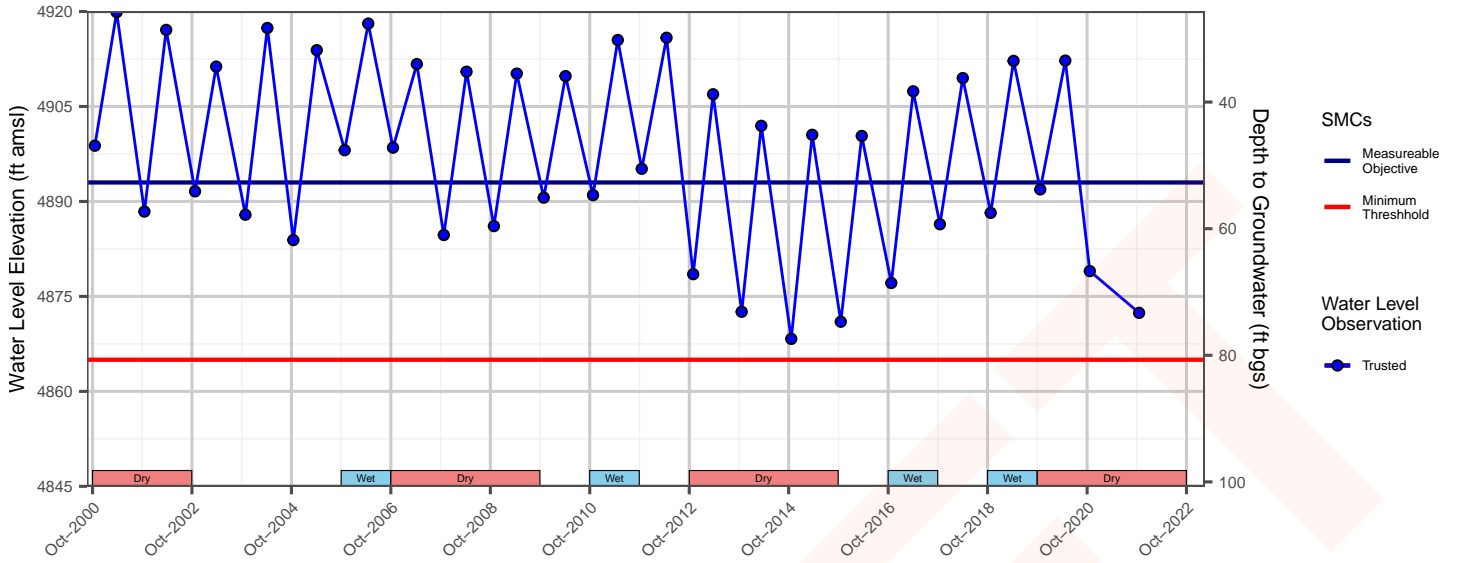


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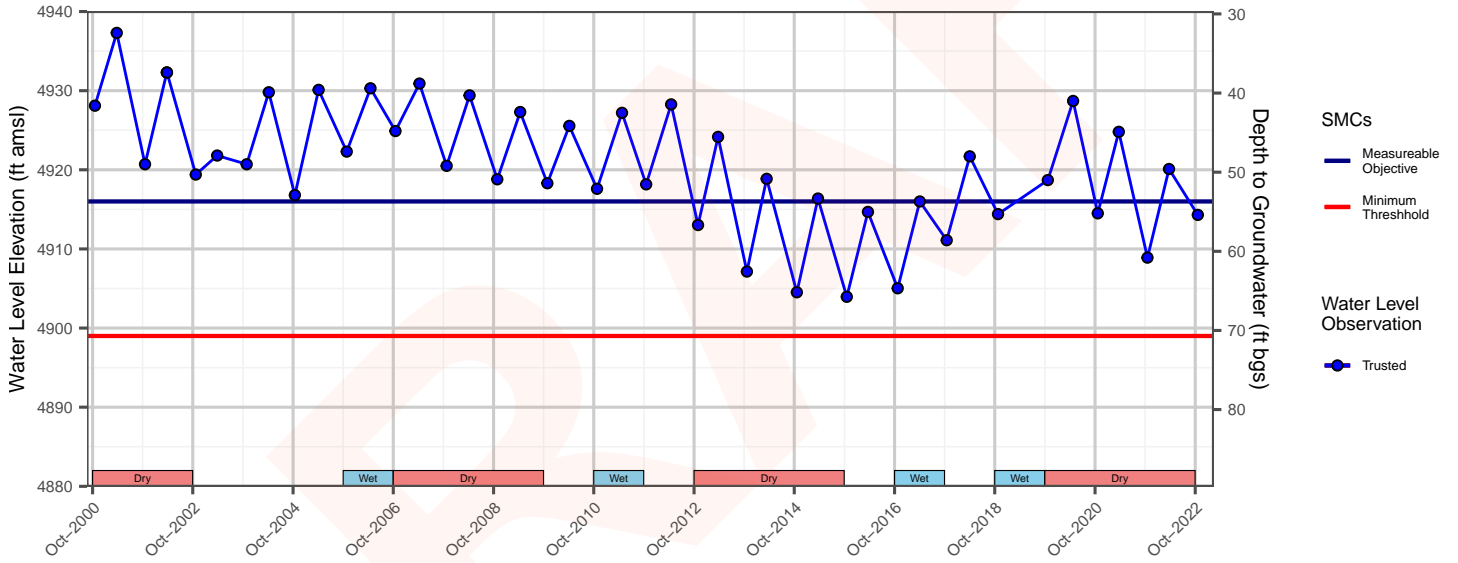




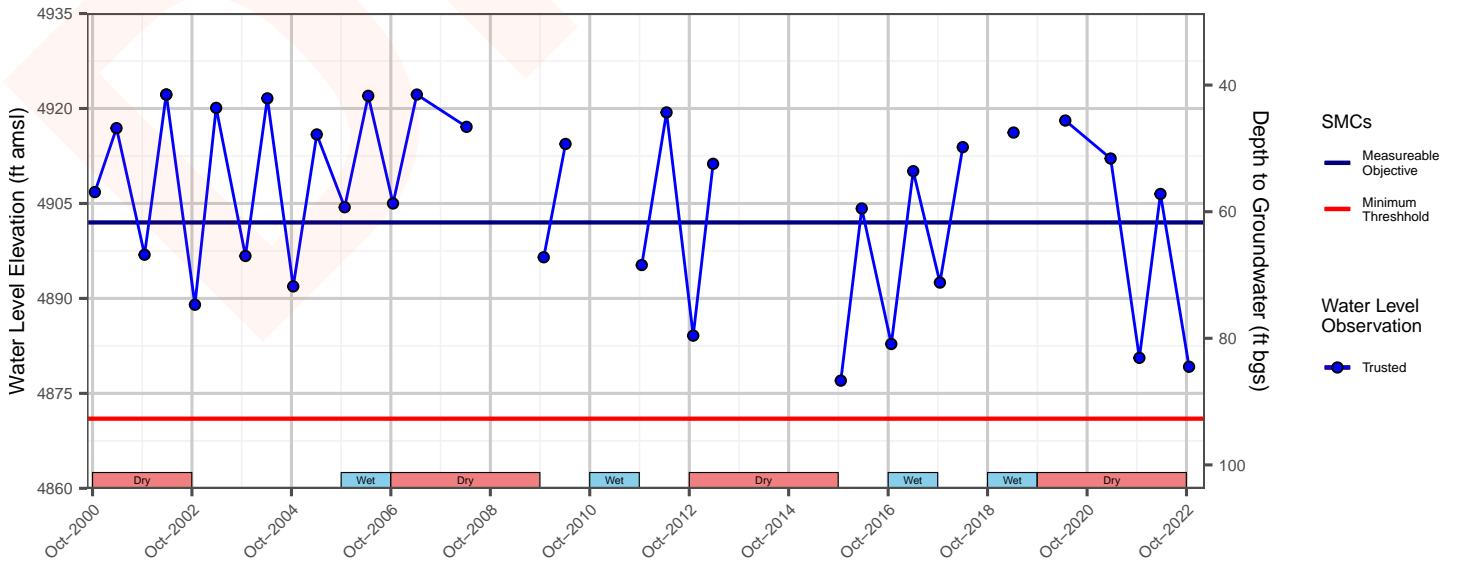
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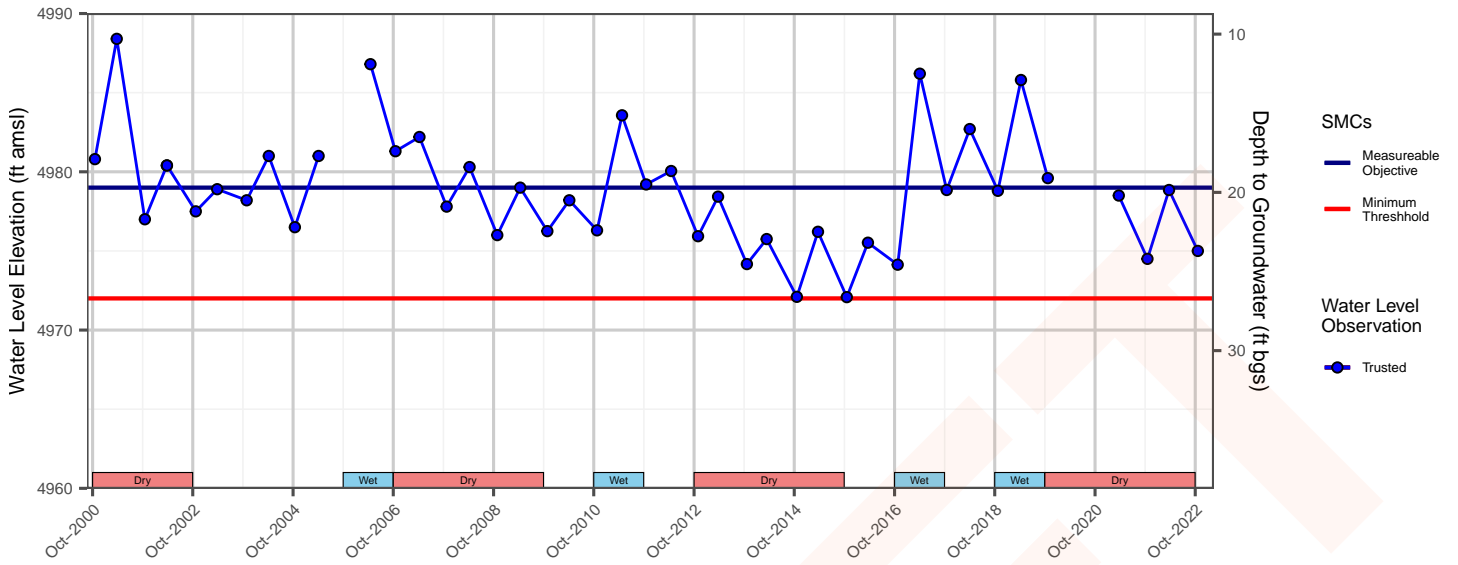
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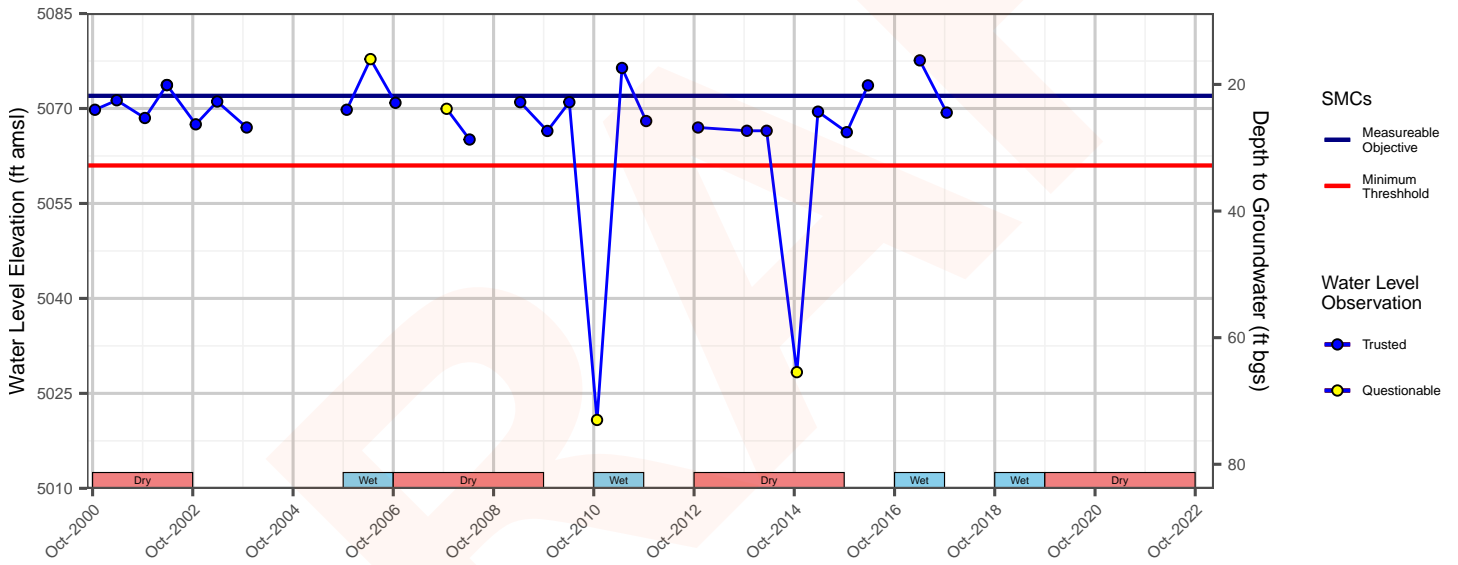
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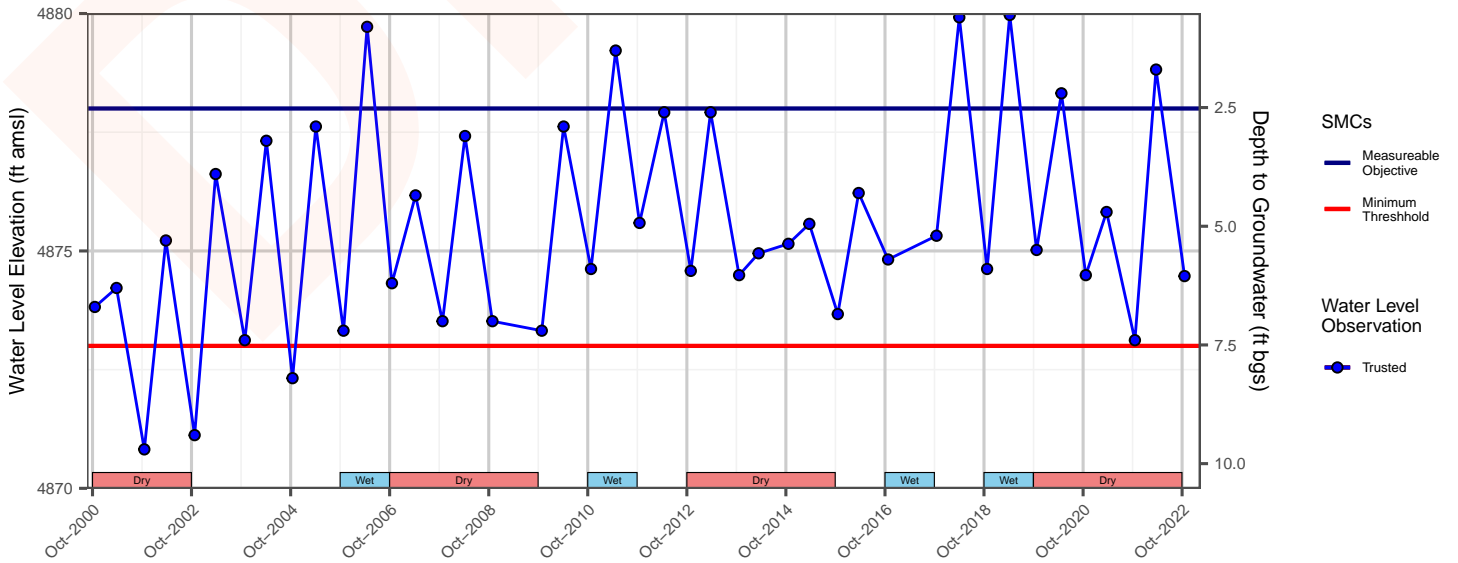
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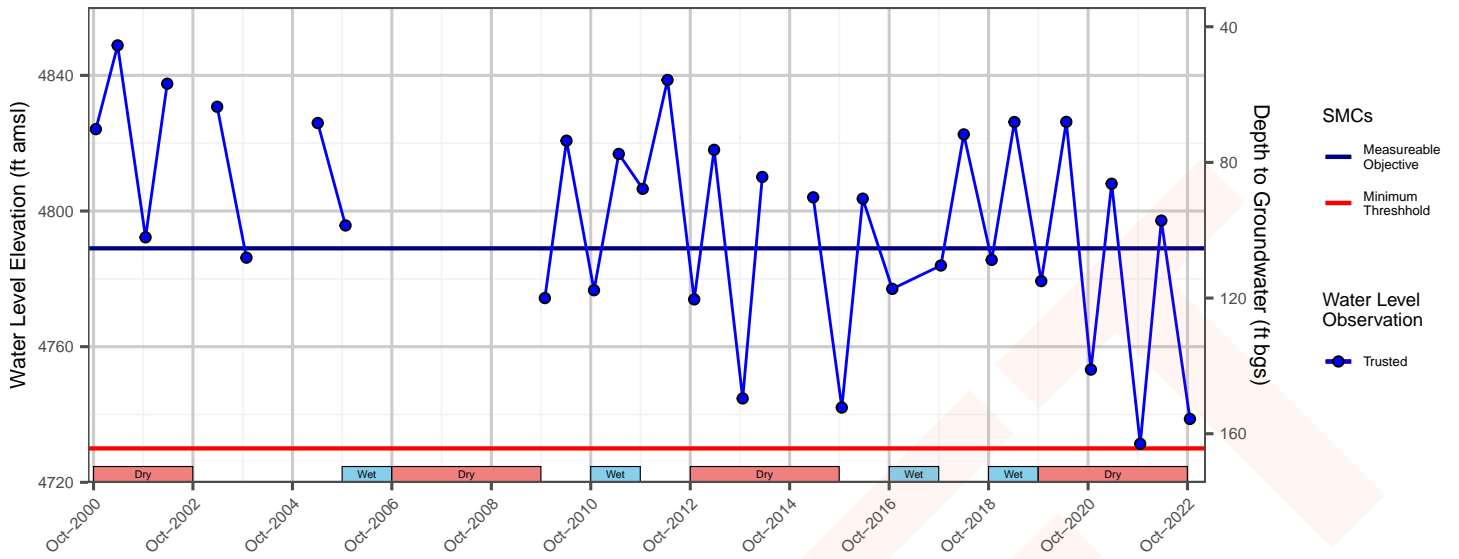
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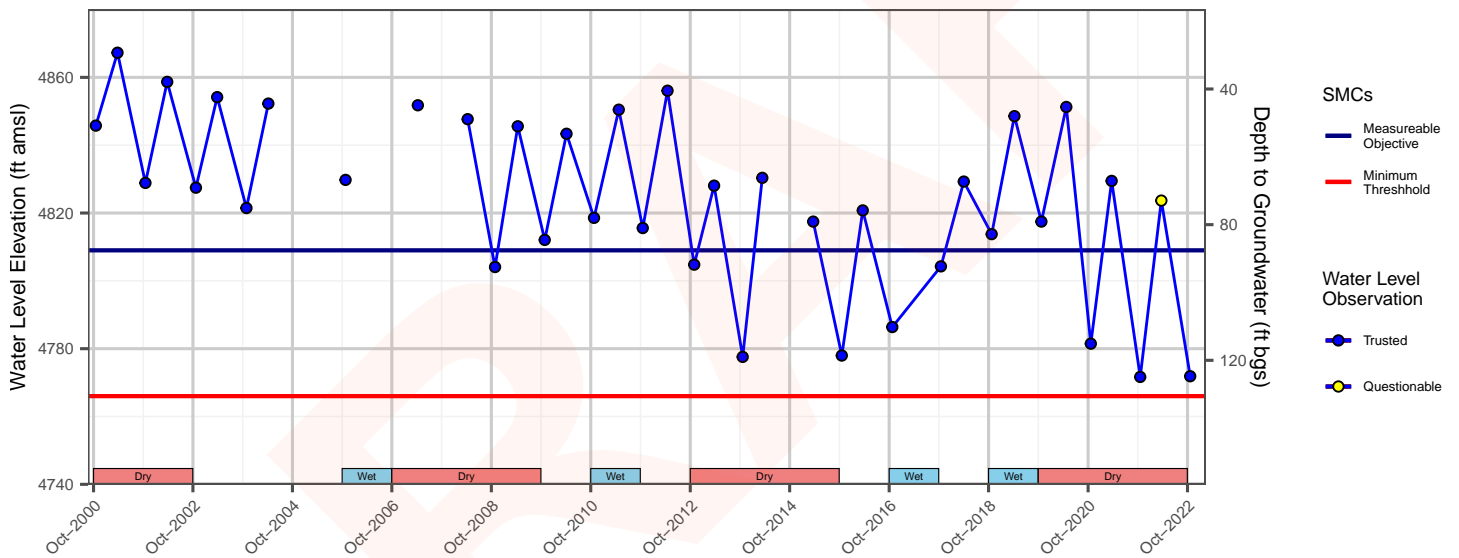
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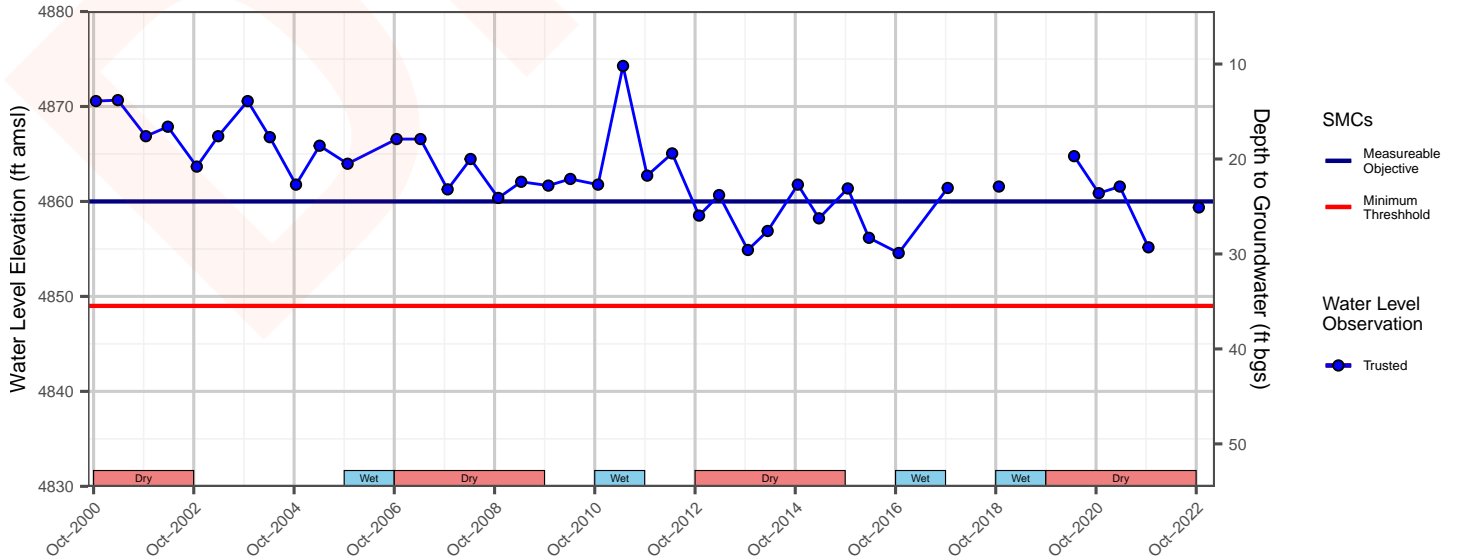
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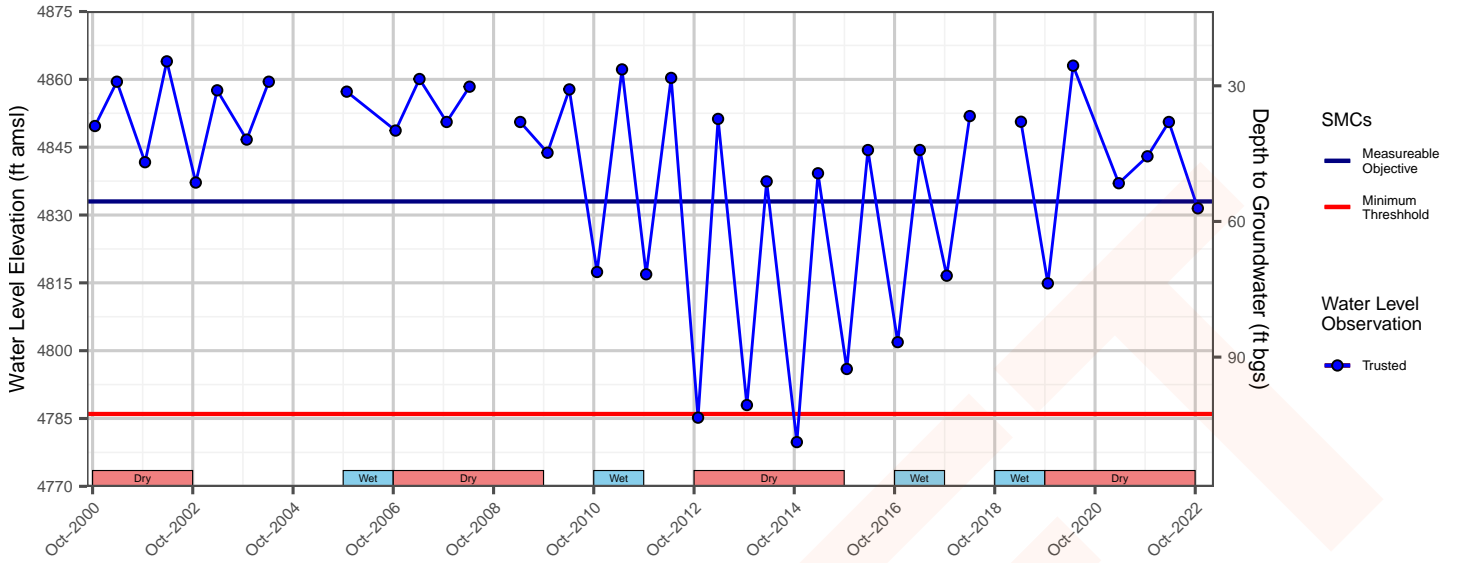
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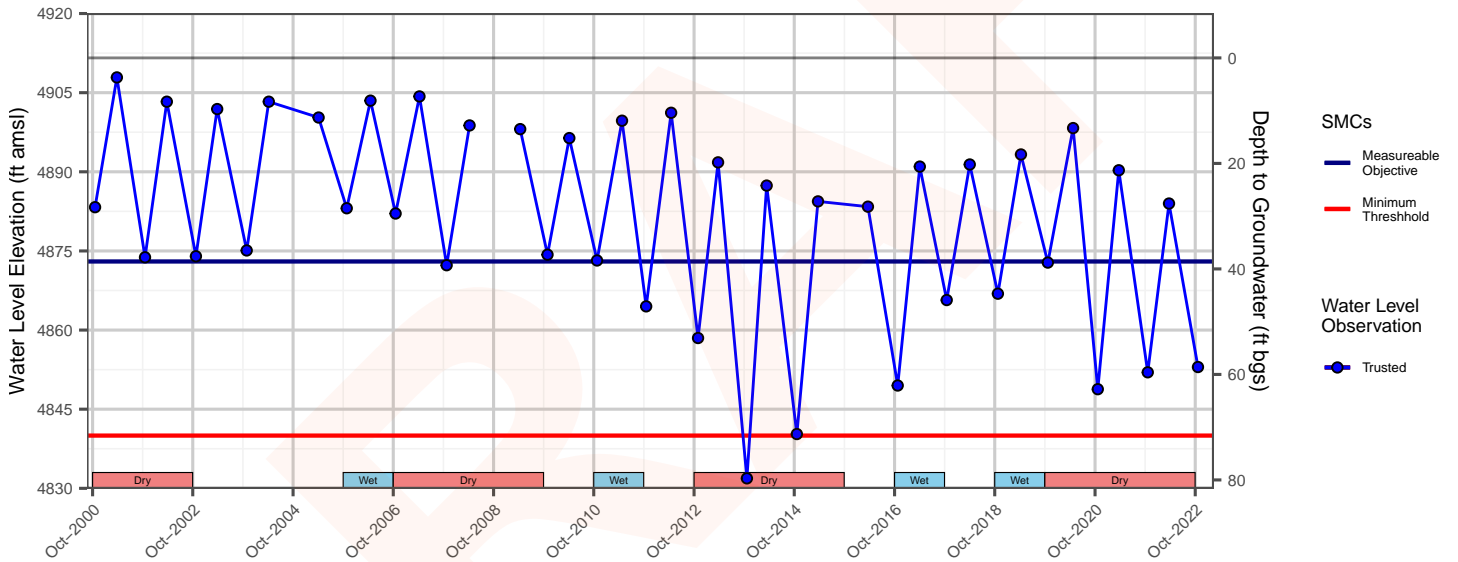
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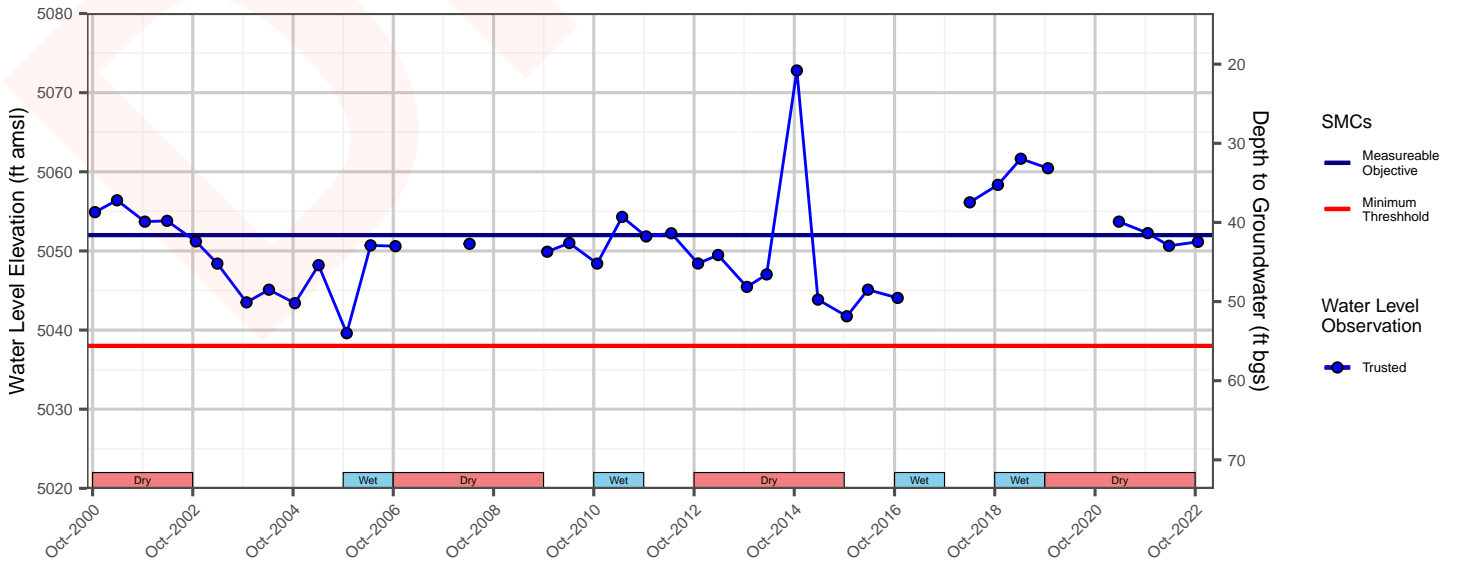
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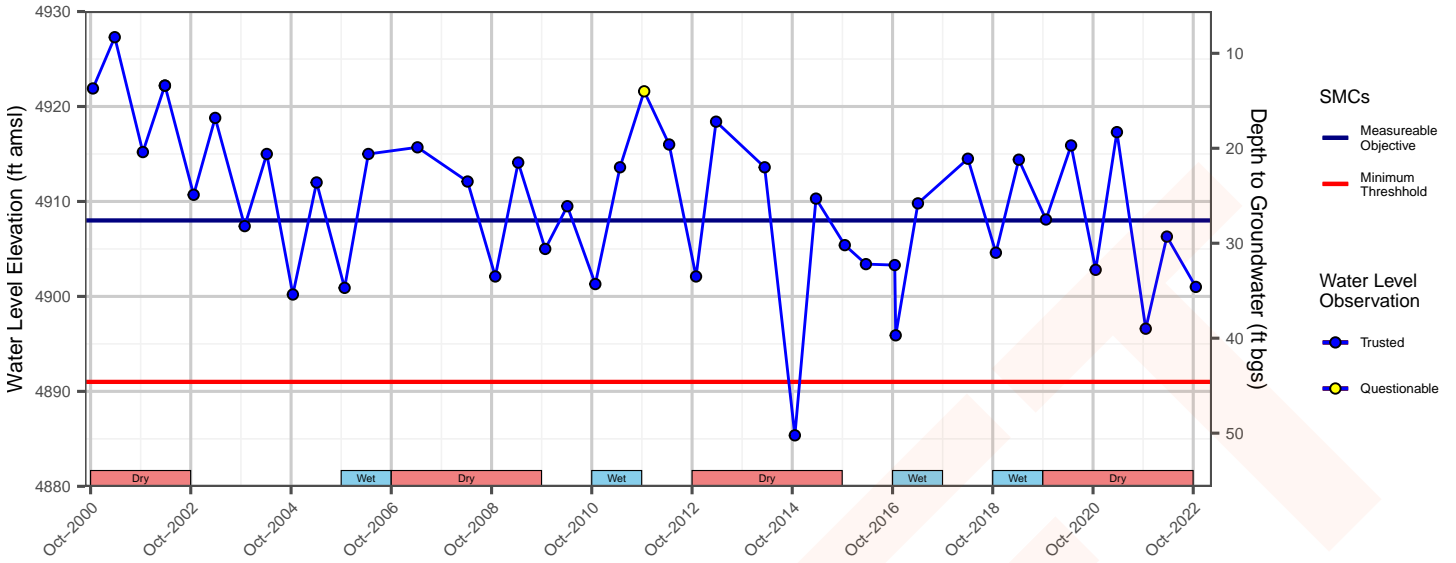
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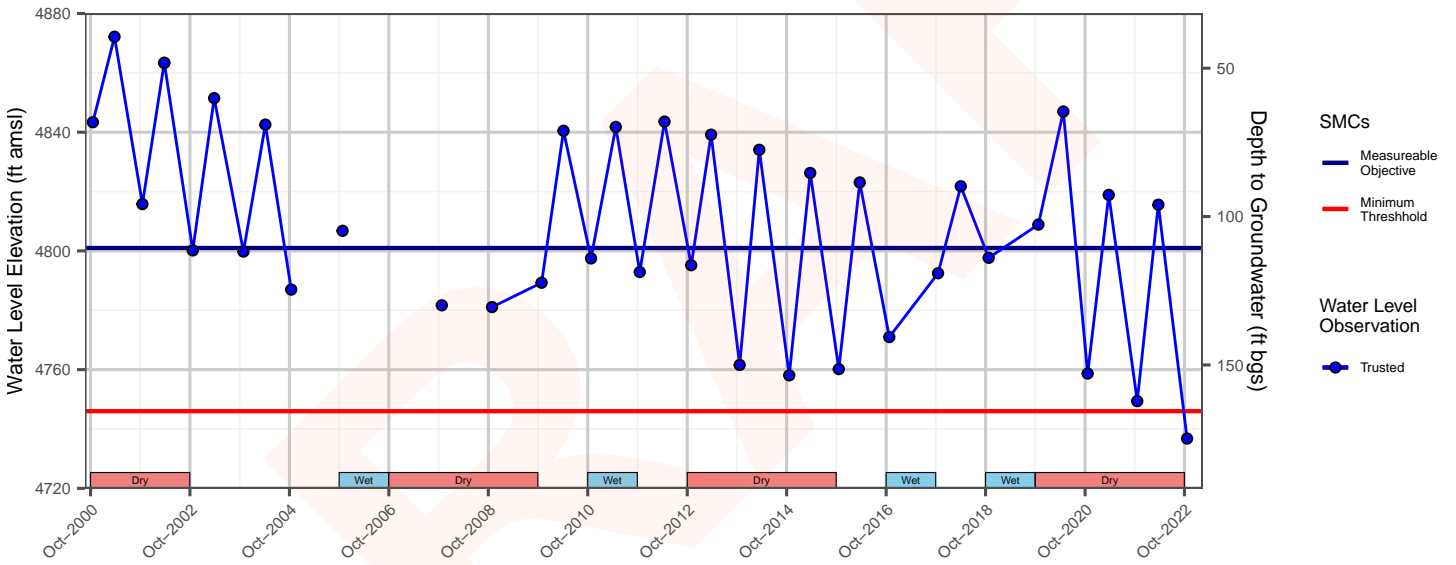
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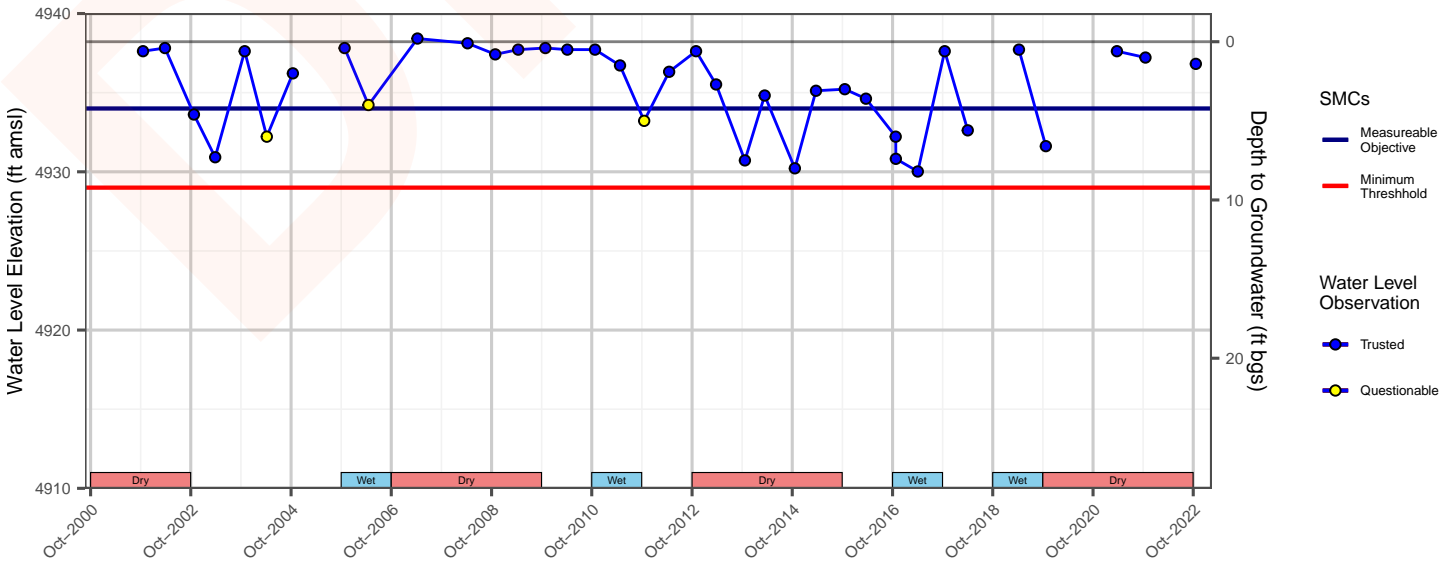
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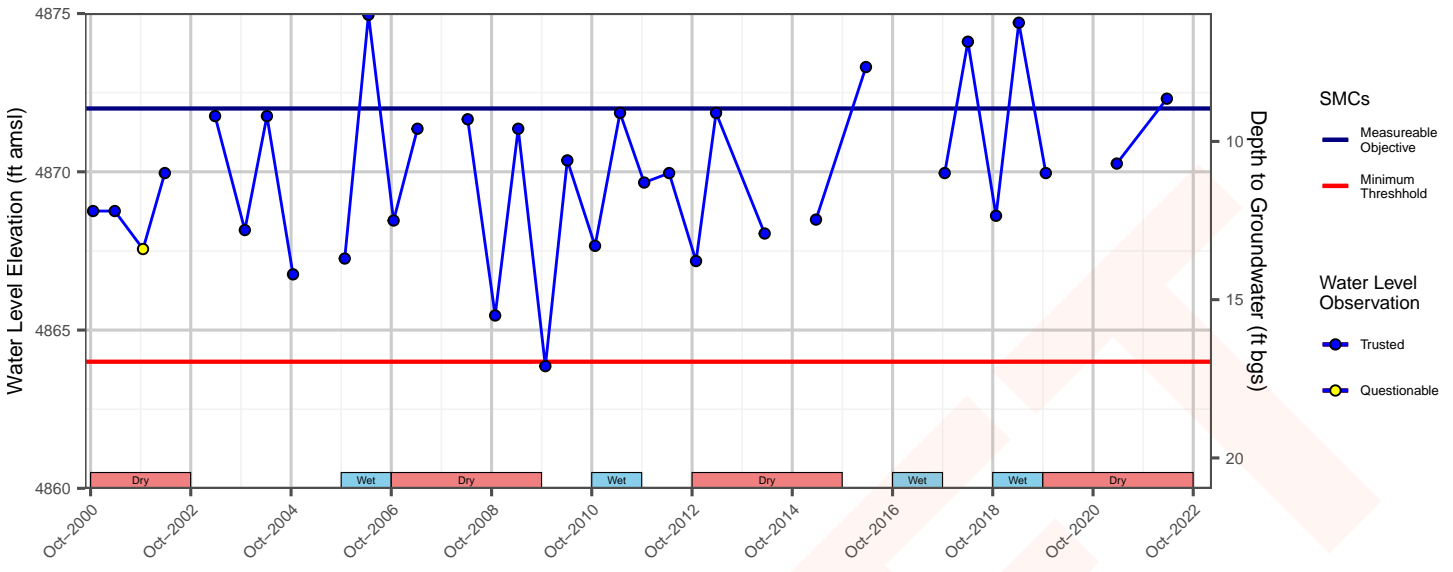
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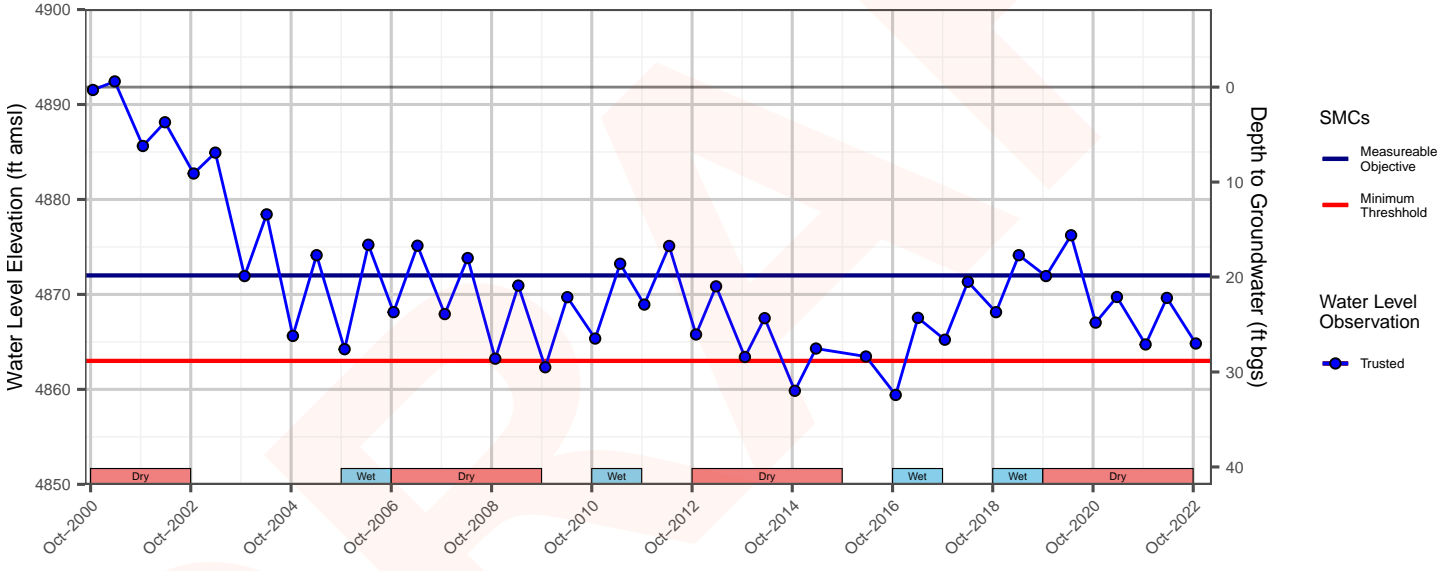
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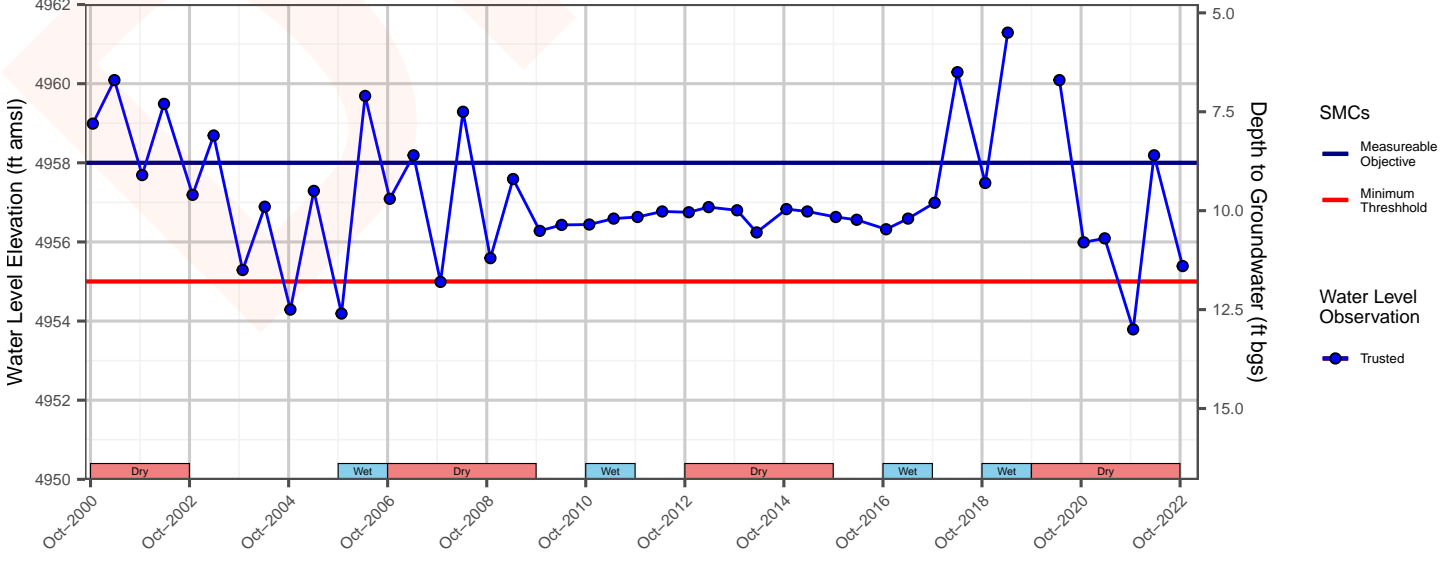
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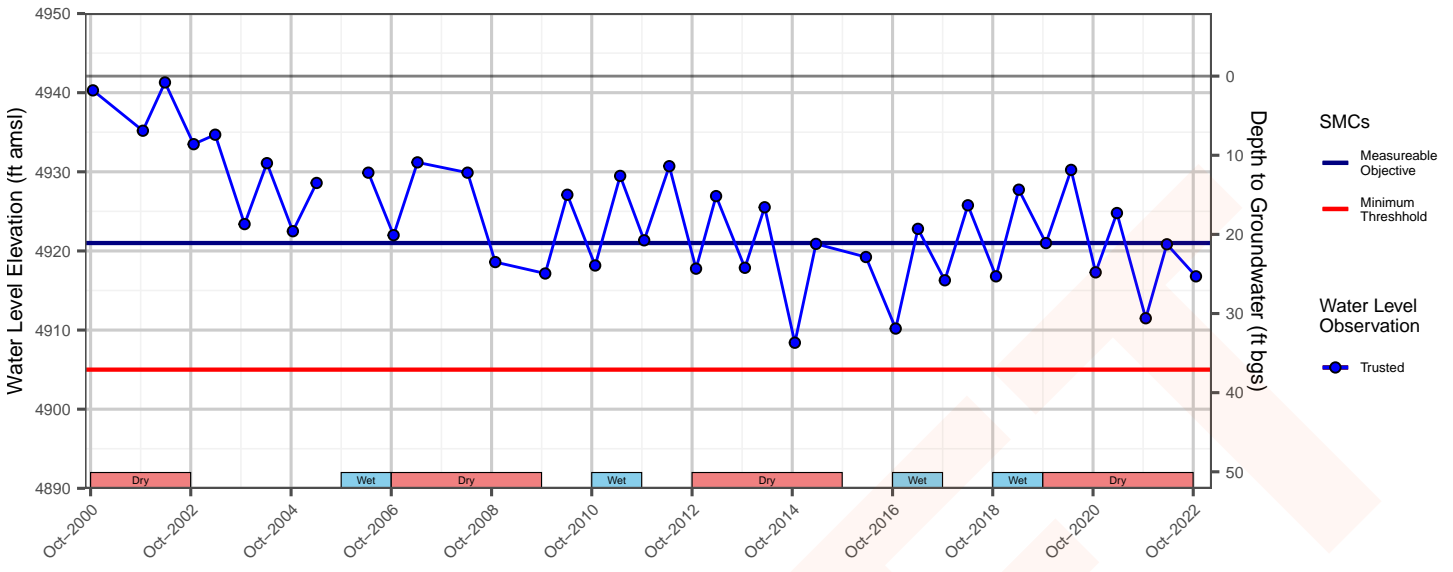
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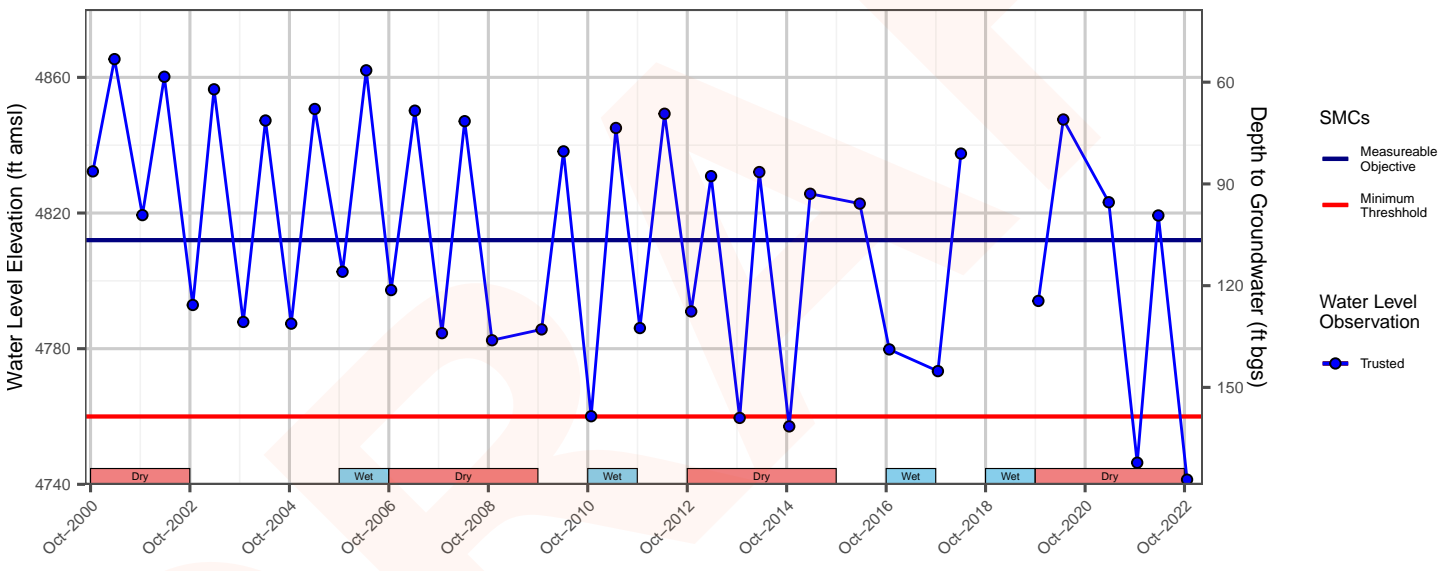
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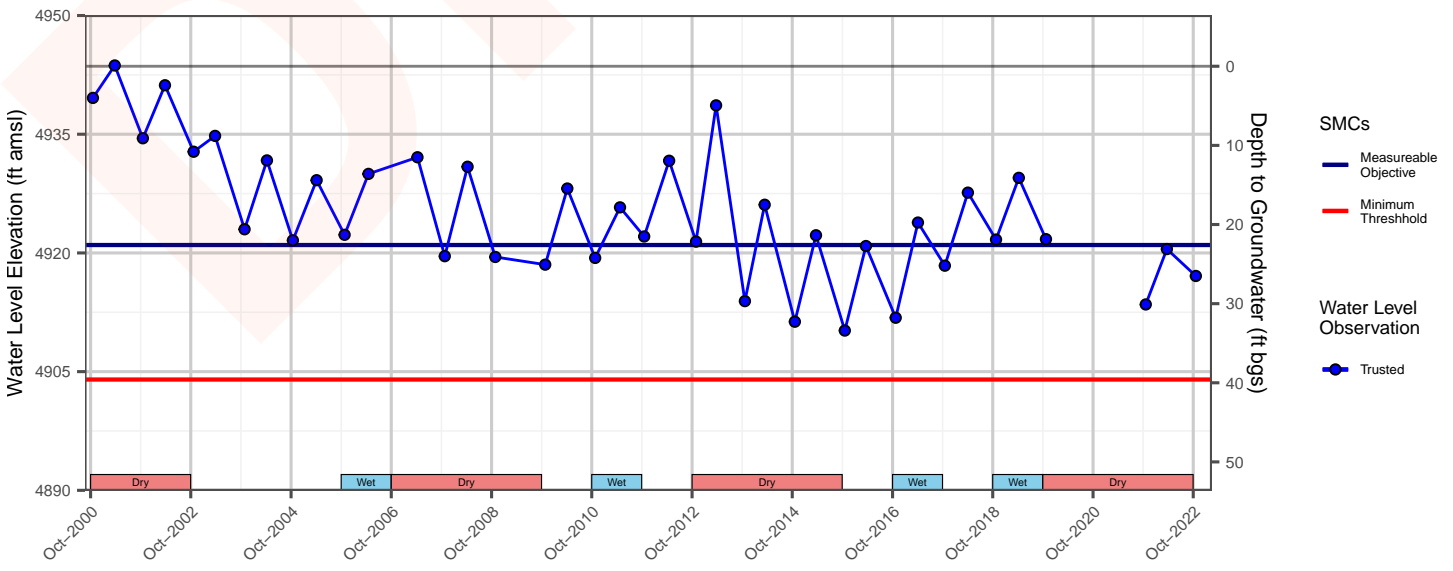
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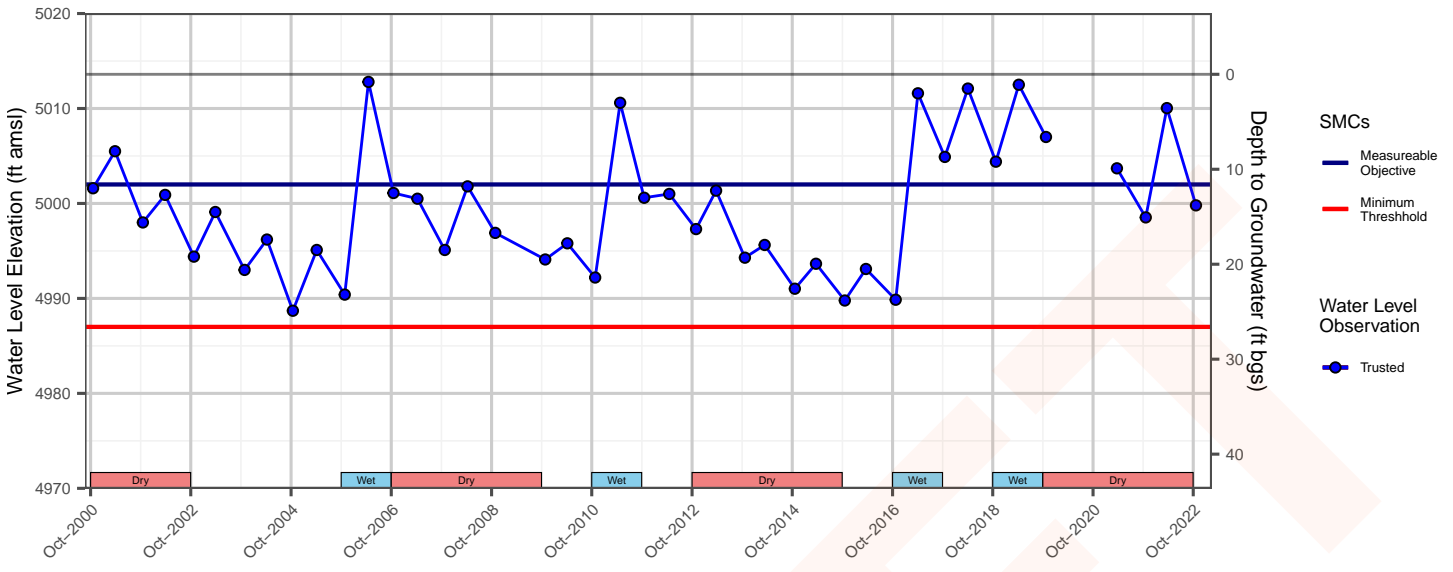
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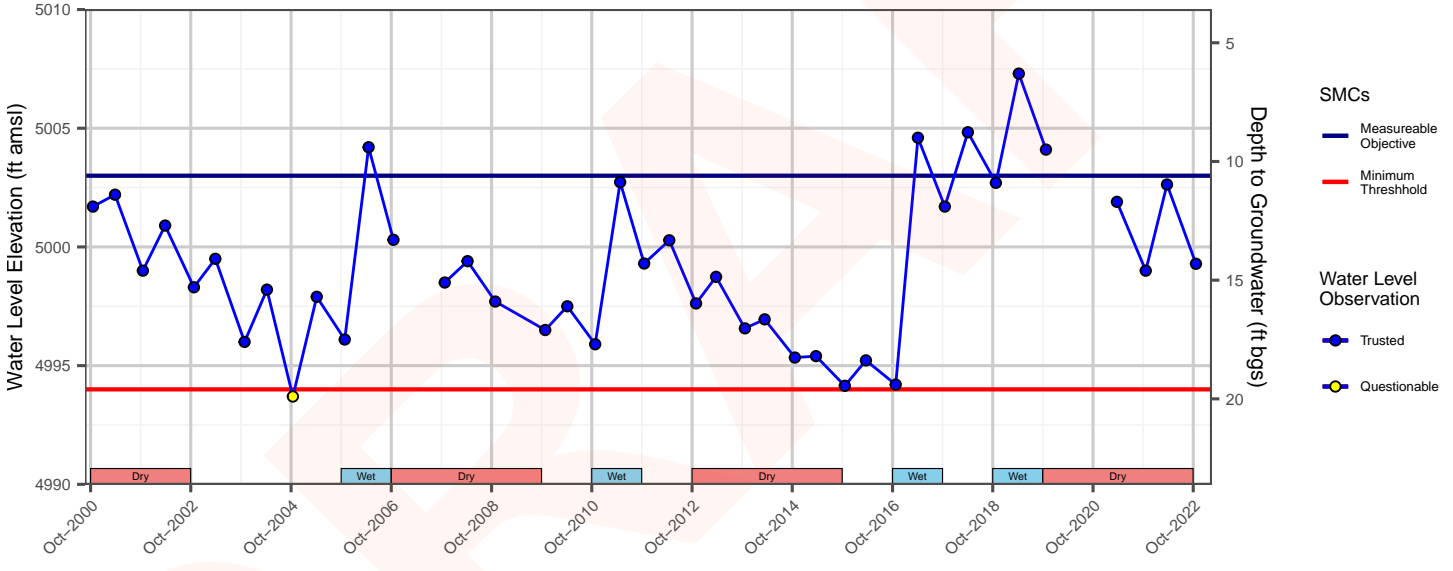
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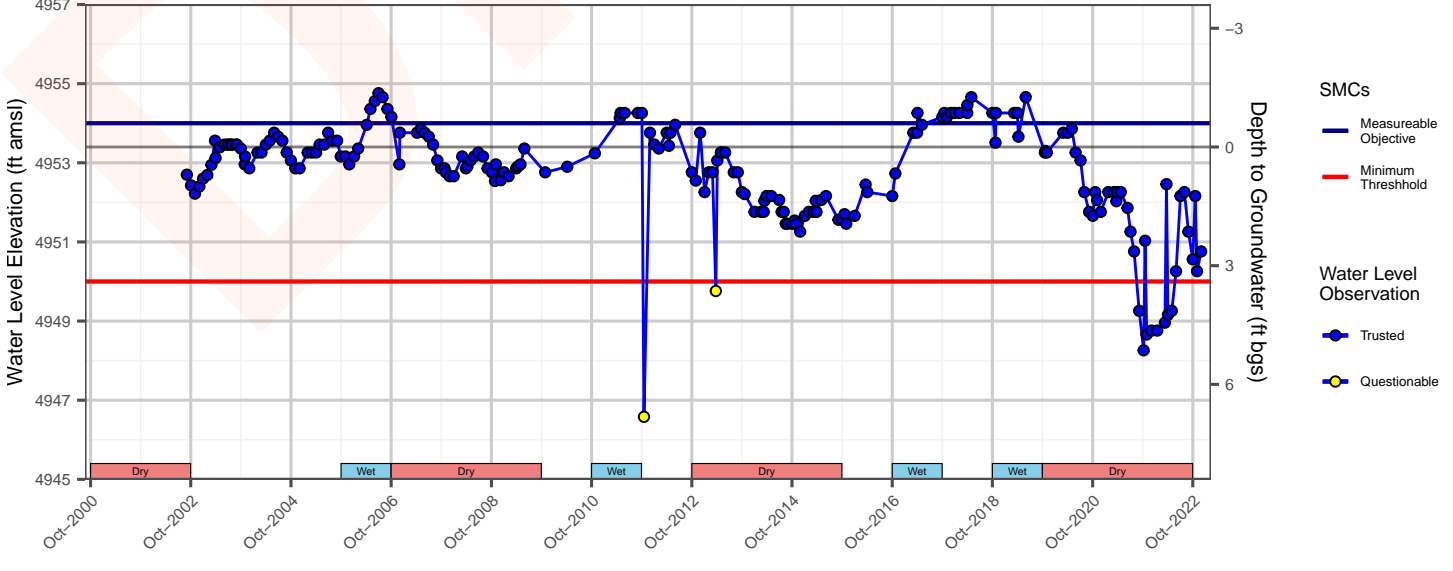
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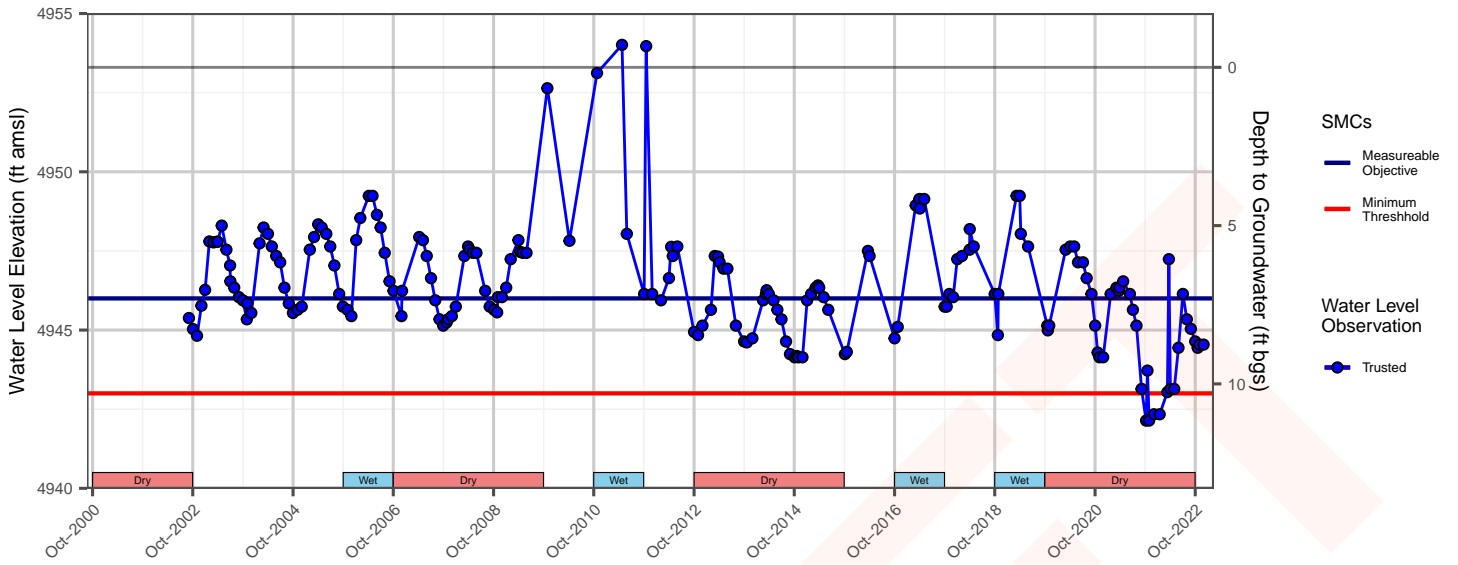


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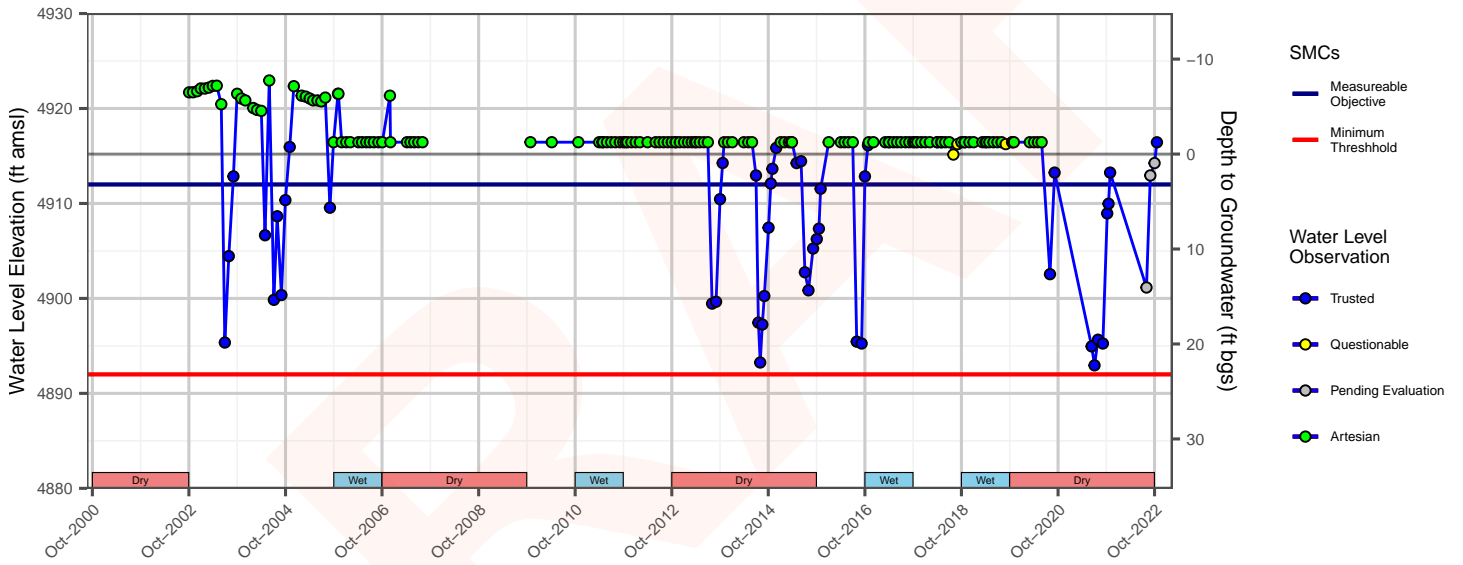




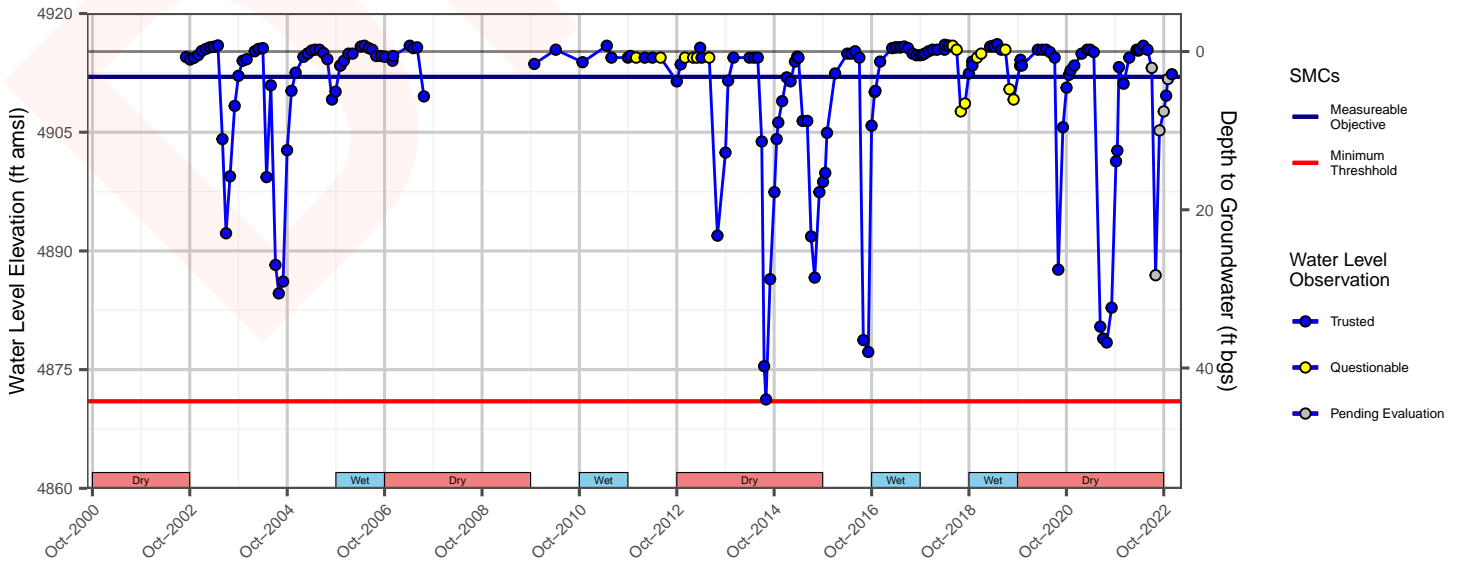
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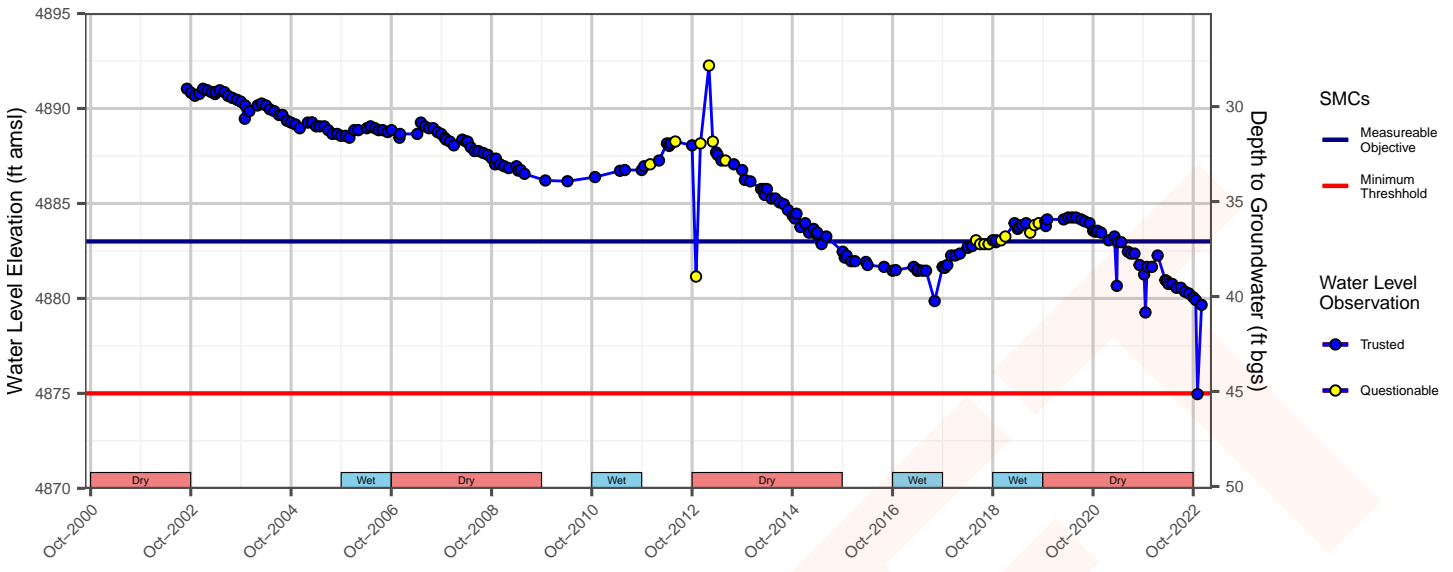
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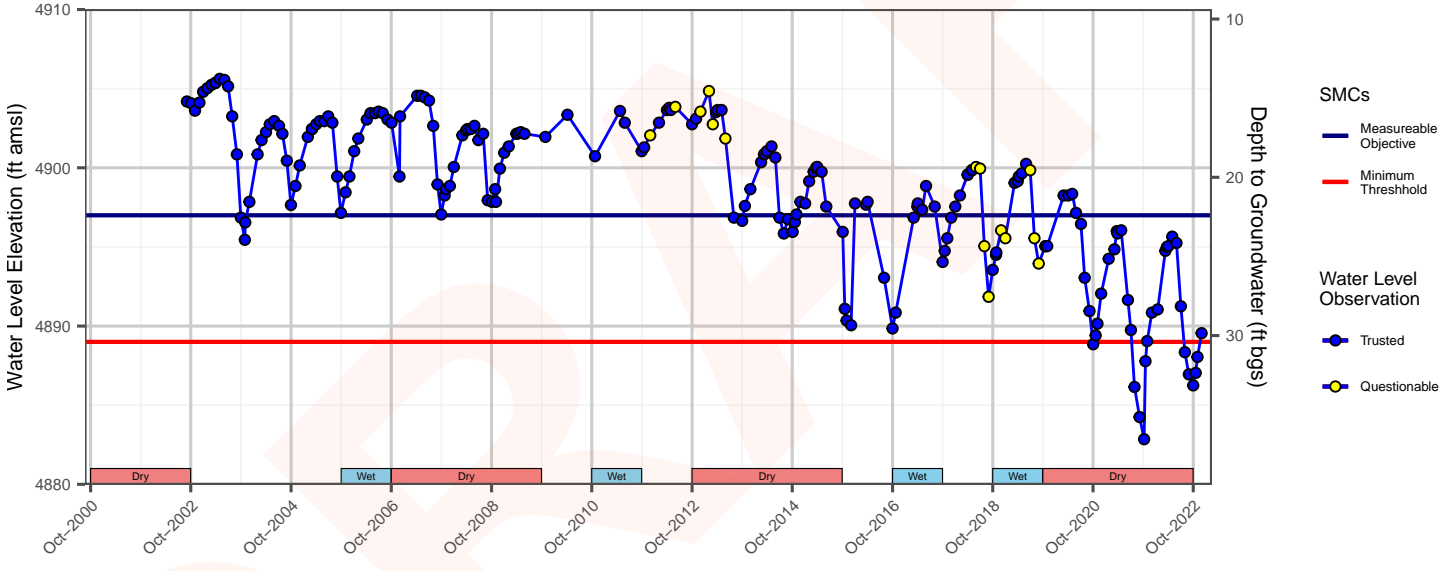
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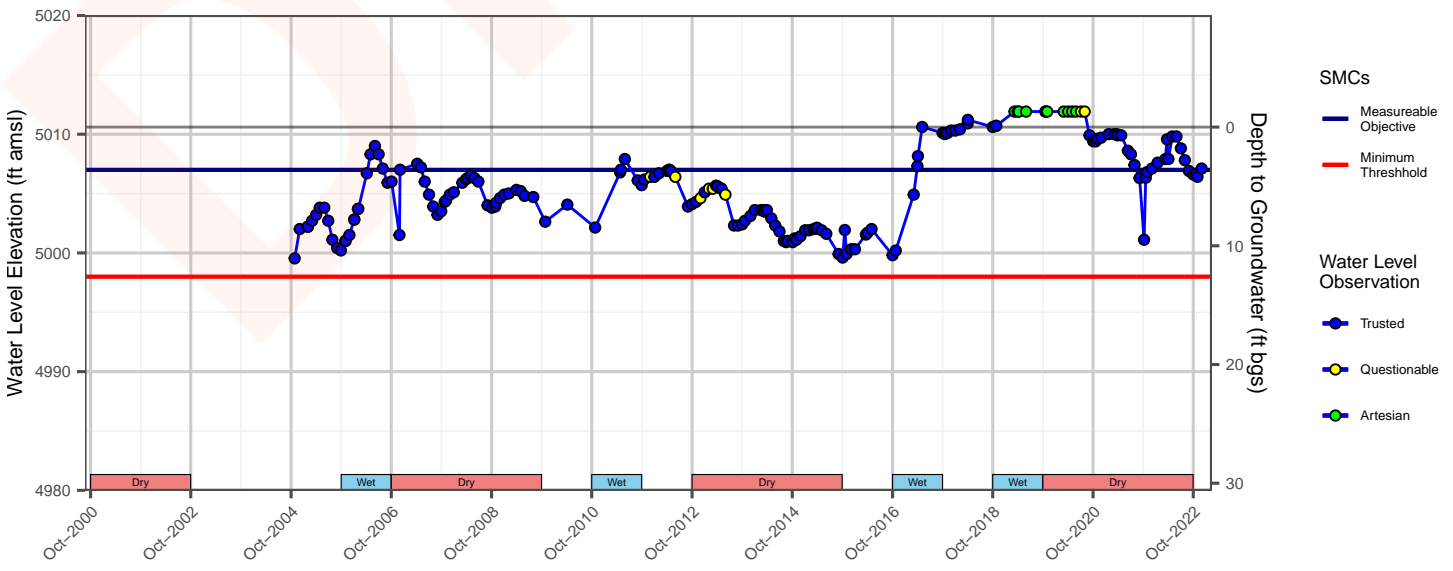
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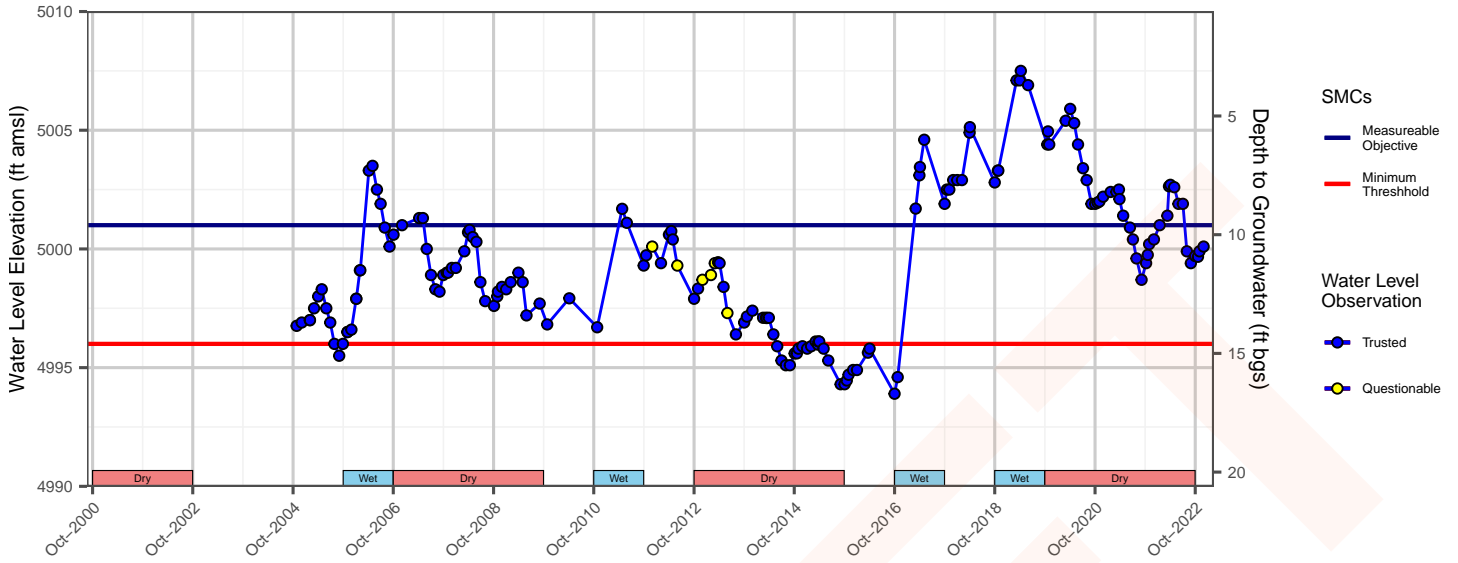
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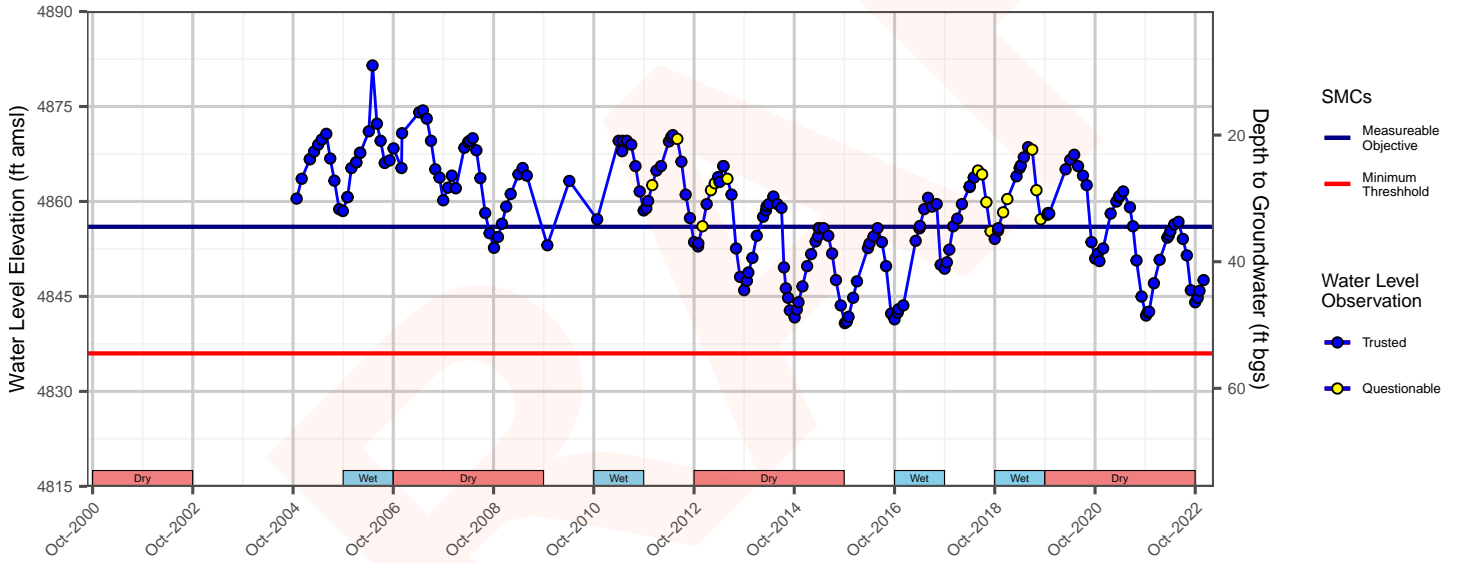
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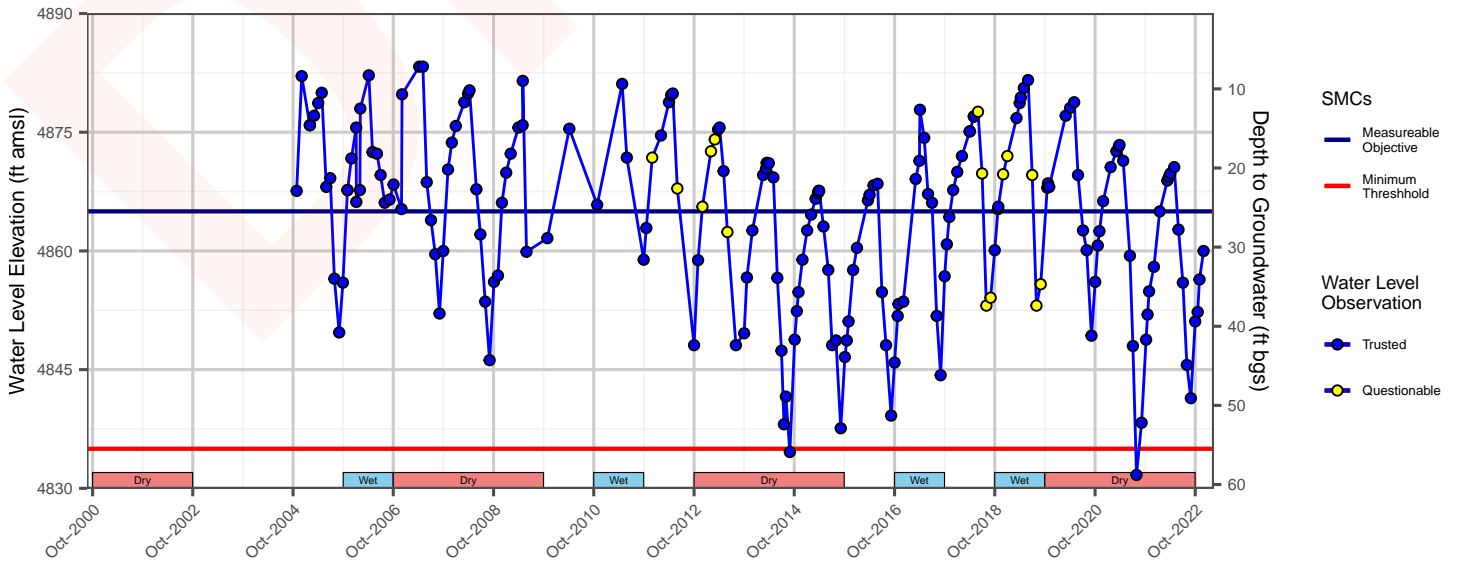
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DMW 6d



DMW 6s





## Groundwater Sustainability Agencies Contact Information

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