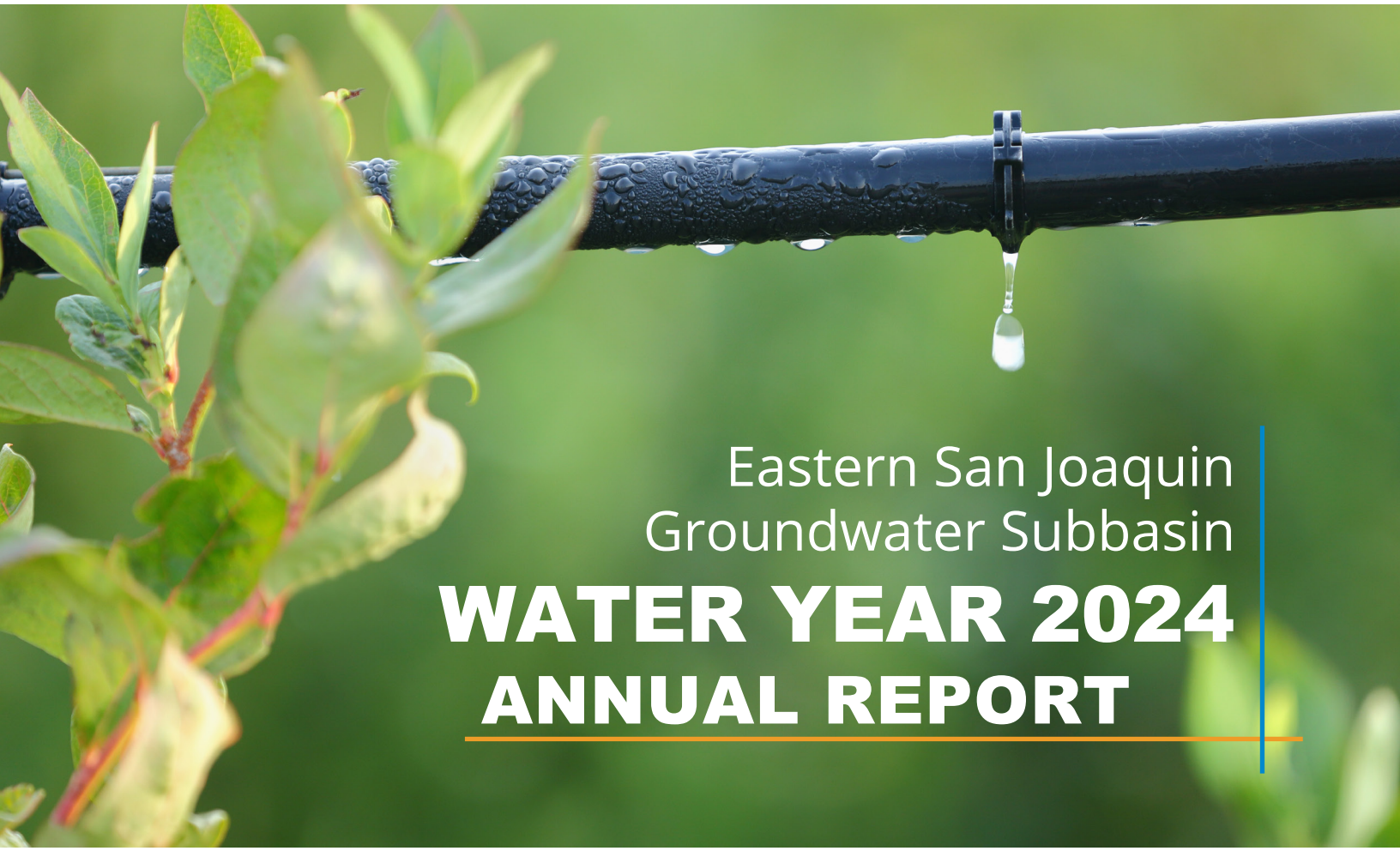
EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY



Eastern San Joaquin Groundwater Subbasin

WATER YEAR 2024 ANNUAL REPORT

March 2025

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List of Abbreviations and Acronyms

AF	acre-feet
AFY	acre-feet per year
bgs	below ground surface
CALSIMETAW	California Simulation of Evapotranspiration of Applied Water
CASGEM	California Statewide Groundwater Elevation Monitoring
CCWD	Calaveras County Water District
CDWA	Central Delta Water Agency
CGPS	Continuous Global Positioning System
CIP	Capital Improvement Program
CSJWCD	Central San Joaquin Water Conservation District
Delta	Sacramento-San Joaquin River Delta
DMS	Data Management System
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
EC	electrical conductivity
ESJ	Eastern San Joaquin
ESJGWA	Eastern San Joaquin Groundwater Authority
ESJWRM	Eastern San Joaquin Water Resources Model
ft/mi	feet per mile
GMP	Groundwater Management Plan
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWL	groundwater level
GWQ	groundwater quality

IDW	Inverse Distance Weighting
ISW	interconnected surface water
IWFM	Integrated Water Flow Model
LCSD	Lockeford Community Services District
LCWD	Linden County Water District
MAF	Million acre-feet
MAR	Managed Aquifer Recharge
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
msl	mean sea level
MT	minimum threshold
MUD	Municipal Utilities Department
NAVD	North American Vertical Datum
NRCS	Natural Resources Conservation Service
NSJWCD	North San Joaquin Water Conservation District
OID	Oakdale Irrigation District
PCBL	projected conditions baseline
PMA	projects and management actions
PRISM	Precipitation-Elevation Regressions on Independent Slopes Model
RMN	representative monitoring network
SC	Steering Committee
SDWA	South Delta Water Agency
SEWD	Stockton East Water District
SGMA	Sustainable Groundwater Management Act
SMC	sustainable management criteria
SMCL	Secondary Maximum Contaminant Level
SSJ GSA	South San Joaquin GSA
SSJID	South San Joaquin Irrigation District
TDS	total dissolved solids
USACE	United States Army Corps of Engineers

USGS	United States Geological Survey
VFD	variable frequency drive
WID	Woodbridge Irrigation District
WY	Water Year

EXECUTIVE SUMMARY

INTRODUCTION

The Eastern San Joaquin Groundwater Subbasin (Eastern San Joaquin Subbasin, or Subbasin) is governed by the *Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan* (GSP) (2019), which the Department of Water Resources (DWR) found adequate in 2022 in a 2023 Determination Letter. A 2024 Amended GSP was submitted to DWR in January 2025 in response to various recommended corrective actions included in the Determination Letter. All versions of the GSP were developed to comply with the Sustainable Groundwater Management Act (SGMA) of 2014 and the GSP Emergency Regulations.

The 2020 GSP, 2022 Revised GSP, and the 2024 Amended GSP were developed and approved by the Eastern San Joaquin Groundwater Authority (ESJGWA) and each of its member agencies. The ESJGWA is a joint powers authority of 16 groundwater sustainability agencies (GSAs) within the Eastern San Joaquin Subbasin: Central Delta Water Agency (CDWA), Central San Joaquin Water Conservation District (CSJWCD), City of Lodi, City of Manteca, City of Stockton, Eastside San Joaquin GSA (Eastside GSA) (composed of Calaveras County, Calaveras County Water District [CCWD], Stanislaus County, and Rock Creek Water District), Linden County Water District (LCWD), Lockeford Community Services District (LCSD), North San Joaquin Water Conservation District (NSJWCD), Oakdale Irrigation District (OID), County of San Joaquin GSAs (-Eastern San Joaquin 1 and -Eastern San Joaquin 2), South Delta Water Agency (SDWA), South San Joaquin GSA (composed of South San Joaquin Irrigation District [SSJID], City of Ripon, and City of Escalon), Stockton East Water District (SEWD), and Woodbridge Irrigation District (WID). Collectively, these 16 GSAs will be referred to as "GSAs."

This water year (WY) 2024 Annual Report for the Eastern San Joaquin Subbasin has been prepared in compliance with Article 7 *Annual Reports and Periodic Evaluations by the Agency*, § 356.2 *Annual Reports* of the GSP Emergency Regulations, as included in the California Code of Regulations and DWR's *A Guide to Annual Reports, Periodic Evaluations, & Plan Amendments* (CA DWR, 2023). WY 2024 covers the period from October 1, 2023 through September 30, 2024.

GROUNDWATER MANAGEMENT ACTIVITIES AND MILESTONES

The GSP sets sustainable management criteria for applicable sustainability indicators and identifies projects and management actions to aid in maintaining sustainable conditions throughout the Eastern San Joaquin Subbasin. Under SGMA, sustainable management criteria can be defined as the following:

- **Minimum Threshold** – Quantitative threshold for each sustainability indicator used to define the point at which undesirable results may begin to occur.

- **Measurable Objective** – Quantitative target that establishes a point above the minimum threshold that allows for a range of active management in order to prevent undesirable results.
- **Interim Milestones** – Targets set in increments of five (5) years over the implementation period of the GSP to put the basin on a path to achieving sustainability by 2040.
- **Margin of Operational Flexibility** – The range of active management between the measurable objective and the minimum threshold.

During WY 2024, monitoring relative to all sustainability indicators indicated the Eastern San Joaquin Subbasin was continuing to operate under sustainable conditions relative to their respective sustainability indicators and established sustainable management criteria in the GSP. The GSAs continued to implement projects identified in the GSP, as summarized in Appendix A. The Subbasin has identified 45 projects in total.

This annual report assesses sustainable management criteria against the commitments included in the 2022 Revised GSP, as this was the prevailing GSP at the time of data collection. However, a description of the changes incorporated into the 2024 Amended GSP are included, wherever applicable.

GROUNDWATER MONITORING AND CONDITIONS ASSESSMENT

Hydrologic Conditions

WY 2024 was only slightly wetter than average and classified as an above normal water year according to the San Joaquin River Valley Water Year Hydrologic Index. Estimated precipitation during WY 2023 was approximately 109% of the long-term (1969-2022) Subbasin average. Measured stream flows in the San Joaquin River were approximately 74 percent of long-term averages, whereas those in the Calaveras River were 76 percent of long-term averages and those in the Cosumnes River were 105 percent of long-term averages.

Groundwater Levels

Groundwater elevations generally were maintained throughout WY 2024 for almost all wells in the representative monitoring network with groundwater level data available. Only one well reported groundwater levels below the minimum thresholds established in the 2024 Amended GSP, by less than one foot. Out of 21 wells in the representative monitoring network for groundwater levels, five (5) wells reported Fall 2023 measurements and 9 wells reported Spring 2024 measurements that met or exceeded their measurable objective. All recent data show typical patterns of annual highs in the Spring and lows in the late Summer or Fall that match historical trends.

Groundwater Storage

The groundwater storage sustainability indicator for the Eastern San Joaquin Subbasin uses the groundwater level sustainable management criteria (i.e., Minimum Threshold, Measurable Objective, Interim Milestones, and Margin of Operational Flexibility) as a proxy. Therefore, the minimum thresholds for groundwater levels are designed to be protective of significant and unreasonable impacts to changes in groundwater storage. For WY 2024, groundwater storage was estimated using the Historical ESJWRM Version 3.0 with time series extended through WY 2024 (the Subbasin's integrated groundwater-surface water model). Based on these estimates, from the beginning to the end of WY 2024, storage in the Eastern San Joaquin Subbasin decreased by approximately 55,000 AF. This volume represents about 0.1% of the total fresh groundwater storage, which was estimated to be more than 50 million acre-feet (MAF) in 2015. This decrease in storage during WY 2024 follows an increase in total storage during WY 2023 (which was a wet water year).

Groundwater Quality

TDS and chloride are the water quality constituents for which minimum thresholds were established in the 2024 Amended GSP. In WY 2024, three of the representative monitoring wells reported measurements for total dissolved solids (TDS) and chloride. TDS and chloride were not reported at the remaining five wells due to a variety of reasons, including inactive wells due to water quality concerns. Additionally, two new wells added to the water quality representative monitoring network in the 2024 Amended GSP were also monitored within WY 2024. One well in the new network was monitored for chloride. All measurements reported are below the minimum thresholds for water quality set in the GSP.

Saltwater Migration

The Eastern San Joaquin Subbasin is not in a coastal area, and seawater intrusion is not currently present. Undesirable results related to seawater intrusion are not currently occurring and are not reasonably expected to occur. For this reason, the SMC for seawater intrusion were removed from the GSP as part of the 2025 Periodic Evaluation and Plan Amendment in response to recommended corrective actions advised by DWR in their 2023 Determination Letter. Chloride will be monitored under the groundwater quality monitoring network going forward.

Land Subsidence

The land subsidence sustainability indicator in the Eastern San Joaquin Subbasin used the groundwater level sustainable management criteria as a proxy in the 2022 Revised GSP. Therefore, because there were no undesirable results for groundwater levels, there are no undesirable results for land subsidence. In the 2024 Amended GSP, SMC and a new representative monitoring network were developed for subsidence. Land subsidence has not historically been an area of concern in the Subbasin and there are no records of significant land subsidence caused by groundwater pumping in the Subbasin. The minimum thresholds for groundwater levels are designed to be protective of significant and unreasonable impacts to

land subsidence. Continuous GPS subsidence monitoring stations in the Subbasin and InSAR data released by DWR show no greater than 0.1 feet of land subsidence occurred in the Eastern San Joaquin Subbasin. There were no minimum threshold exceedances for subsidence at locations that were monitored in the new monitoring network within WY 2024.

Groundwater-Surface Water Interaction

The depletions of interconnected surface water sustainability indicator in the Eastern San Joaquin Subbasin uses the groundwater level sustainable management criteria as a proxy in the 2022 Revised GSP. The minimum thresholds for groundwater levels are designed to be protective of significant and unreasonable impacts to depletions of interconnected surface waters. There were no undesirable results for groundwater levels; therefore, no interconnected surface water sustainability undesirable results occurred. In the 2024 Amended GSP, a new representative monitoring network for interconnected surface water was developed. More monitoring information and guidance from DWR is needed before SMC can be developed.

Total Water Use

The primary water use sectors in the Eastern San Joaquin Subbasin include urban and agriculture uses, with groundwater supplying the majority of the total water use. During WY 2024, groundwater extraction and use is estimated to be 799,476 AF for the Eastern San Joaquin Subbasin. Surface water deliveries during WY 2024 are estimated to be 588,112 AF with the majority of surface water used between May and September. Total water use is the sum of the groundwater use and surface water use; therefore, total water use during WY 2024 is estimated to be 1,387,588 AF.

ANNUAL REPORT ELEMENTS

The following table presents the sections and page numbers where requirements for Annual Report elements can be found, subject to Article 7 §356.2 of the GSP Regulation Sections in the California Code of Regulations.

California Code of Regulations - GSP Regulation Sections	Annual Report Elements	Section(s) and page numbers(s) where requirements for Annual Report elements are included
Article 7	**Annual Reports and Periodic Evaluations by Agency**	
§ 356.2	**Annual Reports**	
	Each Agency shall submit an annual report to the Department by April 1 of each year following the adoption of the Plan. The annual report shall include the following components for the preceding water year:	
	(a) General information, including an executive summary and a location map depicting the basin covered by the report.	Executive Summary, Figure 1 pg. 7:10, 17
	(b) A detailed description and graphical representation of the following conditions of the basin managed in the Plan:	--
	(1) Groundwater elevation data from monitoring wells identified in the monitoring network shall be analyzed and displayed as follows:	--
	(A) Groundwater elevation contour maps for each principal aquifer in the basin illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions.	Section 3.2, Figure 3, Figure 4 pg. 35:39
	(B) Hydrographs of groundwater elevations and water year type using historical data to the greatest extent available, including from January 1, 2015, to current reporting year.	Section 3.2, Figure 2, Appendix B pg. 35:39, 102:111
	(2) Groundwater extraction for the preceding water year. Data shall be collected using the best available measurement methods and shall be presented in a table that summarizes groundwater extractions by water use sector and identifies the method of measurement (direct or estimate) and accuracy of measurements, and a map that illustrates the general location and volume of groundwater extractions.	Section 3.8.1, Figure 14, Table 3 pg. 53:54, 56:57
	(3) Surface water supply used or available for use, for groundwater recharge or in-lieu use shall be reported based on quantitative data that describes the annual volume and sources for the preceding water year.	Section 3.8.2, Table 4 pg. 54, 58

California Code of Regulations - GSP Regulation Sections	Annual Report Elements	Section(s) and page numbers(s) where requirements for Annual Report elements are included
	(4) Total water use shall be collected using the best available measurement methods and shall be reported in a table that summarizes total water use by water use sector, water source type, and identifies the method of measurement (direct or estimate) and accuracy of measurements. Existing water use data from the most recent Urban Water Management Plans or Agricultural Water Management Plans within the basin may be used, as long as the data are reported by water year.	Section 3.8, Table 5 pg. 53:63
	(5) Change in groundwater in storage shall include the following:	--
	(A) Change in groundwater in storage maps for each principal aquifer in the basin.	Section 3.3, Figure 8 pg. 40:44
	(B) A graph depicting water year type, groundwater use, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the basin based on historical data to the greatest extent available, including from January 1, 2015, to the current reporting year.	Section 3.3, Figure 5, Figure 6, Figure 7 pg. 40:44
	(c) A description of progress towards implementing the Plan, including achieving interim milestones, and implementation of projects or management actions since the previous annual report.	Section 4, Appendix A pg. 64:79, 82:101

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1. INTRODUCTION

The Eastern San Joaquin Groundwater Subbasin (Eastern San Joaquin Subbasin or Subbasin) (**Figure 1**) has been identified by the California Department of Water Resources (DWR) as critically overdrafted. The Eastern San Joaquin Groundwater Sustainability Plan (Eastern San Joaquin GSP, GSP, or the Plan) was developed and submitted to DWR to meet the regulatory requirements of the Sustainable Groundwater Management Act (SGMA) by the January 31, 2020, deadline for critically-overdrafted basins while reflecting local needs and preserving local control over water resources. The ESJGWA received comments on the submitted GSP from DWR in April 2022. A Revised (2022) GSP was completed and adopted by the individual GSAs with the requested revisions. In a July 6, 2023 Determination Letter, DWR concluded that the GSAs have taken sufficient actions to correct the deficiencies identified by DWR and approved the 2022 Revised Plan. However, this 2023 Determination Letter also outlined eight recommended corrective actions that the GSAs could consider addressing during preparation of the first Periodic Evaluation. The first Periodic Evaluation was prepared in 2024 and the ESJGWA determined that a Plan Amendment was required to adequately address the recommended corrective actions. An Amended (2024) GSP was adopted by the individual GSAs in November 2024.

While the GSP offers a significant approach to groundwater resource protection, it was developed within an existing framework of comprehensive planning efforts. Throughout the region, several separate yet related planning efforts have occurred or are concurrently proceeding, including integrated regional water management, urban water management, agricultural water management, watershed management, habitat conservation, and general planning and most closely, the *Eastern San Joaquin Groundwater Basin Groundwater Management Plan* (GMP) (2004). The Eastern San Joaquin GSP fits in with these prior planning efforts, building on existing local management and basin characterization.

The Eastern San Joaquin GSP provides a path to achieve and document sustainable groundwater management by 2040, promoting the long-term sustainability of locally-managed groundwater resources now and into the future. The 2020 GSP and its 2024 Amendment were developed by the Eastern San Joaquin Groundwater Authority (ESJGWA), which is a joint powers authority formed by the following 16 groundwater sustainability agencies (GSAs) within the Eastern San Joaquin Subbasin. Collectively, these 16 GSAs will be referred to as "GSAs".

- Central Delta Water Agency (CDWA)
- Central San Joaquin Water Conservation District (CSJWCD)
- City of Lodi
- City of Manteca
- City of Stockton

- Eastside San Joaquin GSA (Eastside GSA) (composed of Calaveras County, Calaveras County Water District [CCWD], Stanislaus County, and Rock Creek Water District)
- Linden County Water District (LCWD)
- Lockeford Community Services District (LCSD)
- North San Joaquin Water Conservation District (NSJWCD)
- Oakdale Irrigation District (OID)
- County of San Joaquin GSA – Eastern San Joaquin 1
- County of San Joaquin GSA – Eastern San Joaquin 2
- South Delta Water Agency (SDWA)
- South San Joaquin GSA (composed of South San Joaquin Irrigation District [SSJID] including all conveyance works, Woodward Reservoir, City of Ripon, and City of Escalon)
- Stockton East Water District (SEWD)
- Woodbridge Irrigation District (WID)

Groundwater management within the Eastern San Joaquin Subbasin has evolved through implementation of the GSP and the GSP Amendment. The 2020 GSP was developed in a stakeholder-driven environment, including 69 open meetings and numerous other outreach activities, and the 2024 GSP Amendment preparation included updates to the Eastern San Joaquin Communication and Engagement (C&E) Plan and ongoing communication and outreach efforts. The result is an updated GSP that describes groundwater conditions in the Eastern San Joaquin Subbasin and includes a system of management based on quantitative thresholds, termed sustainable management criteria (SMC), for five of the six sustainability indicators: chronic lowering of groundwater levels, degraded water quality, inelastic land subsidence, change in groundwater storage, and depletions of interconnected surface water.

This Annual Report provides information on conditions in the Eastern San Joaquin Subbasin and progress towards implementing the GSP for Water Year (WY) 2024. The report has been prepared in accordance with Article 7 *Annual Reports and Periodic Evaluations by the Agency*, § 356.2 *Annual Reports* of the GSP Emergency Regulations as contained within the California Code of Regulations. Updated guidance included in DWR's *A Guide to Annual Reports, Periodic Evaluations, & Plan Amendments* was also considered in the preparation of this report (CA DWR, 2023).

The 2024 Plan Amendment was adopted in early WY 2025. Therefore, throughout WY 2024, the monitoring completed during the water year was in compliance with the 2022 Revised GSP. Where applicable, this annual report includes the new commitments in the 2024 Plan Amendment, but progress toward implementation is evaluated against the 2022 Revised GSP since that was the prevailing document during WY 2024.

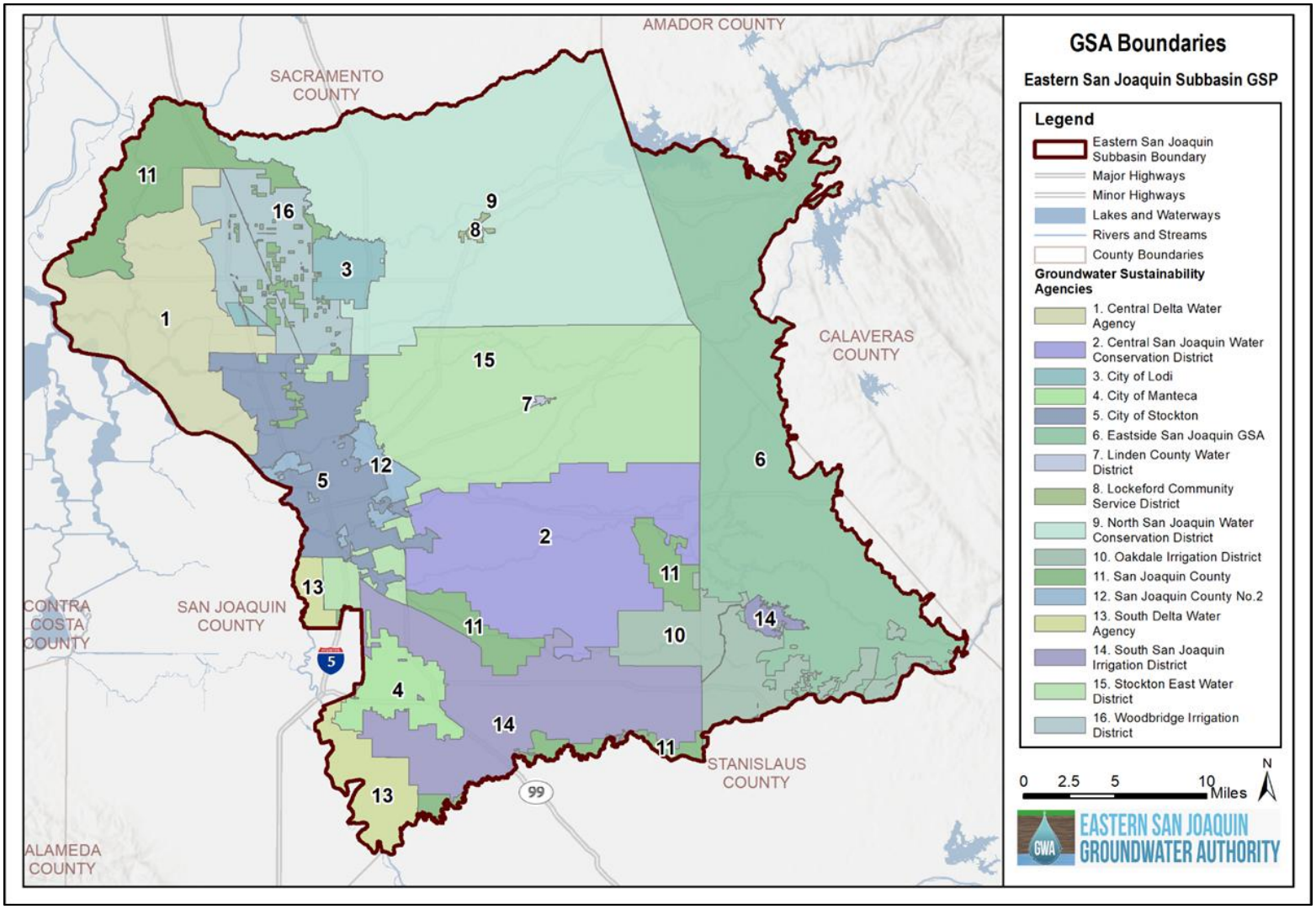

Figure 1. Eastern San Joaquin Groundwater Subbasin

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2. GROUNDWATER MANAGEMENT ACTIVITIES AND MILESTONES

This section documents the activities and milestones from the passage of SGMA throughout GSP development and amendment, summarizes the contents of the GSP for the Eastern San Joaquin Subbasin, and documents GSP implementation progress during WY 2024.

Implementation of the GSP is underway, which includes this Annual Report as well as monitoring and associated assessment of sustainable management criteria and identified projects, management actions, and adaptive management (as needed).

2.1 GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

Preliminary development of the Eastern San Joaquin GSP began with formation of the member GSAs in 2017 and agreement to form the ESJGWA for the purpose of GSP development and implementation. The ESJGWA Board of Directors (ESJGWA Board) developed an Advisory Committee (AC) that included staff members from the GSAs. Now known as the Steering Committee, the SC provides technical review and recommendations to the ESJGWA Board for ongoing sustainable groundwater management and Eastern San Joaquin GSP implementation. The ESJGWA also developed a Groundwater Sustainability Workgroup (Workgroup) for the 2020 GSP preparation to promote stakeholder input and relied upon the Workgroup when developing the original GSP. The Workgroup began with an application process to ensure a diverse cross-section of populations were represented to serve on the Workgroup. Workgroup members participated and provided valuable input throughout the GSP development process.

On March 3, 2018, the GSAs filed a notice of intent to prepare a GSP with DWR. A public draft of the 2020 GSP was posted for public comment in July 2019, and a notice of intent to adopt a GSP was sent by the ESJGWA to all cities and counties in the Eastern San Joaquin Subbasin on August 16, 2019. The Final (2020) GSP, published November 5, 2019, was adopted by the individual GSAs between November 2019 and January 2020. On January 8, 2020, the ESJGWA Board passed a resolution agreeing to submit the Plan to DWR on behalf of the 16 GSAs.

The ESJGWA received comments on the submitted 2020 GSP from DWR in April 2022. A Revised (2022) GSP was completed and adopted by the individual GSAs and re-published in June 2022 with revisions to address DWR's comments incorporated. In a July 6, 2023 Determination Letter, DWR concluded that the GSAs have taken sufficient actions to correct the deficiencies identified by DWR and approved the 2022 Revised Plan. This 2023 Determination Letter also outlined eight recommended corrective actions that the GSAs could consider addressing during preparation of the first Periodic Evaluation. In preparing that Periodic Evaluation in 2024, the ESJGWA determined that a Plan Amendment was required to adequately address the recommended corrective actions. An Amended (2024) GSP was adopted by the individual GSAs and re-published in November 2024 with revisions in response to DWR's recommended corrective actions as contained in the 2023 Determination Letter.

2.2 GROUNDWATER SUSTAINABILITY PLAN CONTENTS SUMMARY

The 2020 GSP and the 2024 GSP Amendment were prepared in compliance with all relevant elements of the SGMA Regulations and GSP Emergency Regulations, Article 5 *Plan Contents*. The subsections below summarize the contents of the GSP relevant to assessing changing conditions in the Eastern San Joaquin Subbasin for the purposes of evaluating GSP implementation progress in this Annual Report.

2.2.1 Plan Area

The GSP's plan area encompasses the Eastern San Joaquin Subbasin (5-22.01), as defined by DWR's Final 2018 Basin Boundary Modifications (released February 11, 2019). The Eastern Subbasin is located at the north end of the larger San Joaquin Valley Groundwater Basin, to the east of the Sacramento-San Joaquin River Delta (Delta), and is generally bounded by the Sierra Nevada foothills to the east, the San Joaquin River to the west, Dry Creek to the north, and Stanislaus River to the south. Major river systems traversing the Subbasin include the Calaveras, Mokelumne, and Stanislaus Rivers. Multiple smaller streams also flow through the Subbasin to the San Joaquin River.

The plan area covers areas of San Joaquin County east of the San Joaquin River, including the cities of Stockton, Lodi, Manteca, Escalon, and Ripon, and portions of Calaveras and Stanislaus Counties. The Subbasin is bordered by Sacramento, Amador, and Contra Costa Counties. Land use patterns in the Eastern San Joaquin Subbasin are dominated by agricultural uses, including nut and fruit trees, vineyards, row crops, grazing, and forage. Irrigated crop acreage in the Subbasin is 48% fruit and nut trees, 21% vineyards, and 8% alfalfa and irrigated pasture, according to 2022 DWR statewide crop mapping (LandIQ, 2024).

2.2.2 Hydrogeologic Conceptual Model

One principal aquifer exists across the Eastern San Joaquin Subbasin that is composed of three water production zones. The zones are:

- **Shallow Zone** that consists of the alluvial sands and gravels of the Modesto, Riverbank, and Upper Turlock Lake Formations
- **Intermediate Zone** that consists of the Lower Turlock Lake and Laguna Formations
- **Deep Zone** that consists of the consolidated sands and gravels of the Mehrten Formation

The Stockton Fault is the largest fault in the Eastern San Joaquin Subbasin. It is a large reverse fault with displacements of up to 3,600 feet. The Vernalis Fault is a reverse fault with a northwest-southeast trend that bounds the Tracy-Vernalis anticlinal trend that is mapped outside of the west boundary of the Eastern San Joaquin Subbasin. Additionally, the Stockton Arch is a broad transverse structure that underlies the southern half of the Eastern San Joaquin Subbasin. The

base of fresh water (encountered saline) has been observed as shallow as 650 feet below ground surface (bgs) in the eastern part of the Subbasin to over 2,000 feet bgs in the northern part of the Subbasin.

2.2.3 Existing Groundwater Conditions

Groundwater levels in some portions of the Subbasin have been declining for many years, while groundwater levels in other areas of the Subbasin have remained stable or increased in recent years. The change in groundwater levels varies across the Subbasin, with the greatest declines occurring in the central portion of the Subbasin. The western and southern portions of the Subbasin have experienced less change in groundwater levels, in part due to the minimal groundwater pumping in the Delta area to the west and the import of surface water for agricultural and urban uses.

In many areas of the Subbasin, groundwater levels reached their lowest in Fall 1992. In numerous cases, areas that experienced undesirable results in 1992 put mitigation measures in place thereafter, often deepening wells, meaning that 1992 groundwater levels would no longer trigger undesirable effects. Groundwater levels in some areas of the Subbasin have recovered since 1992; however, groundwater levels in other portions of the Subbasin declined further below 1992 levels in 2015-2016.

A central pumping depression exists east of the City of Stockton. Groundwater generally flows from the outer edges of the Subbasin towards the depression in the middle of the Subbasin. Along the eastern side of the Subbasin, the lateral gradient of groundwater levels ranges from approximately 21 feet per mile (ft/mi) during the seasonal high to 16 ft/mi during the seasonal low. Along the western side of the Subbasin, the lateral gradient ranges from approximately 7 ft/mi during the seasonal high to 6 ft/mi during the seasonal low. The steeper gradients on the east side of the Subbasin compared to the west side is primarly due to the steeper aquifer units in that area, combined with a lack of head influence from the Delta.

Groundwater quality in the Subbasin varies by location. Areas along the western margin have historically had higher levels of salinity. Salinity may be naturally occurring or the result of human activity. Sources of salinity in the Subbasin include Delta sediments, deep saline (connate) groundwater, and irrigation return water. Elevated concentrations of other constituents, such as nitrate, arsenic, and point-source contaminants, are generally localized and not widespread and are generally related to natural sources or land use activities.

While the total volume of groundwater in storage in the Subbasin has declined over time, groundwater storage reduction has not historically been an area of concern in the Subbasin as there are large volumes of fresh water stored in the aquifer. As estimated in the 2020 GSP, the total volume of fresh groundwater in storage was estimated at over 53 million acre-feet (MAF) in 2015 (Woodard & Curran, 2019, page 2-80). Significant impacts to groundwater beneficial uses were estimated (via modeling) to occur if there was a depletion of 23 MAF (e.g., only 30 MAF of fresh groundwater remained in the aquifer). However, if 23 MAF of groundwater were

removed from the Subbasin, groundwater levels would have to drop substantially below the minimum thresholds set for groundwater levels. As such, undesirable impacts would be experienced for groundwater levels long before the 23 MAF would have been removed from the Subbasin. It is therefore highly unlikely the Subbasin will experience conditions under which the volume of stored groundwater poses a concern, although the depth to access that groundwater could pose a concern.

Inelastic land subsidence has not historically been an area of concern in the Subbasin, and there are no records of significant land subsidence directly caused by groundwater pumping in the Subbasin. Subsidence concerns, if any, are focused on the non-Delta area of the Subbasin as the Delta region contains peaty soils, which can subside when the soils dewater and oxidize. Oxidation of peaty soils is not a mechanism caused by groundwater overdraft.

Within the Eastern San Joaquin Subbasin, there are three primary sources of subsidence data, each with different periods of record and methods of data collection:

- Continuous GPS vertical displacement data provided by DWR
- InSAR subsidence rates provided by DWR
- Survey benchmarks from U.S. Geological Survey (USGS), the U.S. Army Corps of Engineers (USACE), California Department of Transportation (CalTrans), the San Joaquin County Department of Public Works, and other local agencies.

The three Continuous GPS subsidence monitoring stations in the Subbasin and DWR's InSAR data all indicated less than 0.2 feet in subsidence during WY 2023. In WY 2024, a similar result was observed. These recent trends in subsidence further support the conclusion that inelastic land subsidence is not currently an area of concern in the Subbasin. However, to be protective of future changes in land subsidence, a monitoring network and SMC for subsidence were established as part of the 2024 Amended GSP in response to DWR's recommended corrective actions.

The status of interconnected surface waters (ISWs) was assessed in all prior annual reports using groundwater elevations as a proxy. Recognizing a lack of data, the Subbasin GSAs have worked actively to fill these data gaps to better assess where ISWs exist and the linkages between groundwater extraction and ISW conditions. As part of the first Periodic Evaluation and 2024 GSP Amendment, additional efforts were undertaken to assess ISWs in coordination with DWR's recently released guidance documents on ISWs.

The ISW evaluation conducted in response to DWR's recommended corrective action as part of the 2024 GSP Amendment noted that there remained a lack of shallow monitoring wells and associated historic data near the rivers and creeks across the Subbasin, which translates to a low degree of confidence in interpretations of model output because model calibration around these surface water features contains significant uncertainty. However, the GSP regulations require the identification of ISWs within a basin (and therefore identification of the degree of

connectivity) and an estimate of the timing and quantity of depletions of those systems, where depletions are defined as "conditions where groundwater pumping results in reductions in flow or water levels of ISW." Therefore, a good faith effort was conducted as part of the 2024 GSP Amendment to isolate stream depletions in the ESJ Subbasin due solely to groundwater pumping. However, the analyses resulted in an inconclusive understanding of depletions due to pumping since an equilibrium was not reached within the simulation period and depletions were heavily influenced by initial and boundary conditions. Therefore, the analyses contained in the 2024 GSP Amendment relied on the standard definition of depletions as stream losses to the aquifer system regardless of cause. This allows the GSAs to have more confidence in the results and to be able to manage and report depletions in future Annual Reports without limitations and uncertainties from the existing toolset. At the time of the 2024 GSP Amendment, the additional guidance documents anticipated from DWR (*Techniques for Estimating Depletions of Interconnected Surface Water* and *Examples of Approaches for Estimating Depletions of Interconnected Surface Water*) had not yet been released.

The GSAs understand that an ISW may be seasonally connected and/or connected in only wetter water year types. The GSAs currently do not have sufficient data to determine if or when streams or reaches are connected to the groundwater table with this level of granularity. The GSAs will be collecting more data with newly constructed ISW monitoring wells to help inform this analysis going forward. Using Historical ESJWRM Version 3.0, which was the best available tool at the time of analysis, the numerical flow model indicates that the streams that are connected 75 percent of the time are the Mokelumne River, Stanislaus River, and lower San Joaquin River. Streams that are not connected at least 75 percent of the time are Dry Creek, Calaveras River, and Mormon Slough. Other smaller creeks are not represented in ESJWRM Version 3.0 due to a lack of streamflow monitoring sites with historical data for calibration purposes.

The timing, location, and volume of depletions in the ESJ Subbasin will be revised at a later date in coordination with further guidance from DWR. In the meantime, a new monitoring network was established in the 2024 GSP Amendment specifically for interconnected surface water (ISW). The monitoring network wells include a selection of newly drilled shallow wells adjacent to streams as well as a few additional wells from the groundwater level network. Monitoring will begin at the new wells in Spring 2025.

Seawater intrusion is not present in the Subbasin. While the Delta ecosystem evolved with a natural salinity cycle that brought brackish tidal water in from the San Francisco Bay, current management practices endeavor to maintain freshwater flows through a combination of hydraulic and physical barriers and alterations to existing channels.

Major river systems in the Subbasin are highly managed to meet instream flow requirements for fisheries, water quality standards, and the water rights of users downstream. Many smaller streams run through the Subbasin that provide contributions to both groundwater, riparian habitat, and the major river systems. The interconnection between reaches of these streams and

the groundwater system will be better understood through monitoring as the GSP is implemented.

2.2.4 Water Budgets

Water budgets provide a quantitative accounting of precipitation, surface water and groundwater entering and leaving the Eastern San Joaquin Subbasin under historical, current, projected, and projected with climate change conditions. The water budgets were estimated using the Historical ESJWRM Version 3.0 with time series extended through WY 2024. The primary components of the groundwater budget are:

- Inflows:
    - Deep percolation from precipitation, applied water (surface water and groundwater) for agricultural lands, and applied water (surface water and groundwater) for outdoor use in the urban areas or industrial purposes
    - Stream seepage (i.e., losses to the groundwater system)
    - Other recharge (including unlined canals/reservoir seepage, local tributaries seepage, and Managed Aquifer Recharge [MAR] projects)
    - Subsurface inflow
- Outflows:
    - Groundwater outflow to streams (i.e., stream gain from the groundwater system)
    - Groundwater pumping
    - Subsurface outflow
- Change in Groundwater Storage (Inflows Minus Outflows)

The average annual groundwater storage is shown as decreasing under historical, current, projected, and projected with climate change conditions, suggesting conditions of overdraft without the implementation of projects and/or management actions to address this situation.

Groundwater pumping under sustainable conditions for the Eastern San Joaquin Subbasin was calculated through development of an ESJWRM sustainable conditions scenario (also called ESJWRM PCBL-DR Version 3.0) in which the goal was to generate a long-term (55-year) change in Subbasin groundwater storage of zero, a conservative approach as a change in storage of greater than zero could occur without causing undesirable results. Based on this analysis, to achieve a simulated long-term average change in storage of 0 AFY, the Subbasin-wide pumping would be approximately is 704,000 AF/year ± 10 percent. This assumes that hydrology and surface water conditions continue as modeled and no projects are implemented.

Groundwater pumping under sustainable conditions is discussed further in Section 3.8.1.

2.2.5 Sustainable Management Criteria

SGMA allows several pathways to meet the distinct local needs of each groundwater basin, including development of sustainable management criteria, usage of other sustainability

indicators as a proxy, and identification of indicators as not being applicable to the basin. Sustainable management criteria were developed based on information about the Subbasin in the hydrogeologic conceptual model, the descriptions of current and historical groundwater conditions, the water budgets (historical and projected), and input from stakeholders during the GSP development process.

The sustainability goal for the Eastern San Joaquin Subbasins is:

> *…to maintain an economically viable groundwater resource for the beneficial use of the people of the Eastern San Joaquin Subbasin by operating the Subbasin within its sustainable yield or by modification of existing management to address future conditions. This goal will be achieved through the implementation of a mix of supply and demand type projects consistent with the GSP implementation plan*.

The method prescribed by SGMA to measure undesirable results and achieve the sustainability goal involves setting minimum thresholds and measurable objectives for a series of representative monitoring sites. These representative sites are a subset of the monitoring network developed as part of the GSP. The sustainable management criteria for the Subbasin are summarized in **Table 1**.

Of the six sustainability indicators identified under SGMA, chronic lowering of groundwater levels is the driver for sustainable groundwater management in the Subbasin as several other indicators all correlated with groundwater levels. Measurable objectives, minimum thresholds, and interim milestones were developed for each of the identified representative wells.

Minimum thresholds for groundwater levels were developed with reference to historical drought low conditions and domestic well depths. Specifically, minimum thresholds were established based on the deeper of the 2015 groundwater level low plus a buffer of the historical fluctuation or the 10th percentile domestic well depth, whichever is shallower – establishing levels that are protective of 90 percent of domestic wells. In municipalities with ordinances requiring the use of municipal water (water provided by a city's municipal wells) for domestic users, the 10th percentile municipal well depth is used in place of the 10th percentile domestic well depth criteria. Measurable objectives were established based on the 2015 groundwater level low and provide a buffer above the minimum threshold. A table summarizing minimum thresholds and measurable objectives is included in the 2024 GSP Amendment. Graphs showing the minimum threshold and measurable objective for each of the representative wells are contained in an appendix to the 2024 GSP Amendment and included herein as **Appendix B**. These SMC were updated as part of the 2025 Period Evaluation and Plan Amendment in response to recommended corrective actions advised by DWR in their 2023 Determination Letter.

The Eastern San Joaquin Subbasin is not in a coastal area, and seawater intrusion is not currently present. Undesirable results related to seawater intrusion are not currently occurring and are not reasonably expected to occur. For this reason, the SMC for seawater intrusion were removed from the GSP as part of the 2025 Periodic Evaluation and Plan Amendment in response to

recommended corrective actions advised by DWR in their 2023 Determination Letter. Instead, SMC for chloride were established under the groundwater quality sustainability indicator and therefore will continue to be monitored going forward.

Minimum thresholds for water quality were defined by considering two primary beneficial uses at risk of undesirable results related to salinity: drinking water and agriculture uses. Minimum thresholds are 1,000 milligrams per liter (mg/L) for each representative monitoring well, consistent with the upper limit secondary maximum contaminant level (SMCL) for total dissolved solids (TDS). Crop tolerances in the Subbasin range by crop type from 900 mg/L TDS for almonds up to 4,000 mg/L TDS for wheat, assuming a 90 percent yield. The TDS SMC are unchanged from the 2020 GSP. The minimum threshold for chloride is 250 mg/l, consistent with the SMCL, or chloride concentrations measured in 2015, whichever is greater. The chloride SMC were designed to avoid worsening groundwater quality from 2015 conditions. The chloride SMC were re-evaluated as part of the 2025 Periodic Evaluation and Plan Amendment in response to recommended corrective actions advised by DWR in their 2023 Determination Letter.

Substantial work was completed as part of the 2025 Periodic Evaluation and Plan Amendment to quantify timing, location, and volume of depletions of interconnected surface water. Minimum thresholds and measurable objectives for groundwater levels were used as a proxy in the 2020 GSP. In the 2024 GSP Amendment, a separate monitoring network and plan for establishing SMC were developed for interconnected surface water in order to focus on wells adjacent to streams. All work related to interconnected surface water as part of the 2024 GSP Amendment was based on minimal guidance from DWR and may be reevaluated in future GSPs. Six wells from the groundwater level monitoring network were kept in the new interconnected surface water representative monitoring network and their SMC are set to be the same as those of the groundwater levels indicator SMC. Six newly constructed shallow wells were also added to the monitoring network for interconnected surface water. Without historical data at these wells, there was insufficient information from which to establish SMC for these wells in the 2024 GSP Amendment. An approach for developing future SMC was delineated in the 2024 GSP Amendment to be implemented once groundwater level data are collected.

Both the 2020 GSP and 2022 Revised GSP used groundwater level SMC as a proxy for inelastic land subsidence. SMC for subsidence based on measured land elevations were developed as part of the 2025 Periodic Evaluation and Plan Amendment in response to DWR's recommended corrective actions.

Undesirable results from inelastic land subsidence are defined as those causing significant and unreasonable impacts to the critical infrastructure, specifically conveyance infrastructure and major roads. Inelastic land subsidence related to groundwater pumping occurs due to the dewatering of fine-grained geologic materials, such as clay, leading to structural collapse and loss of void spaces. Although there is no significant historical evidence of subsidence in the Subbasin, SGMA requires that the GSP considers the potential consequences of undesirable results. Therefore, minimum thresholds for subsidence are established at 24 inches of total

inelastic subsidence based on estimates from GSAs on how much subsidence local infrastructure can withstand. Given that approximately 10 years have elapsed since the implementation of SGMA commenced in 2015, and assuming an additional 10 years for achieving significant progress towards the Subbasin's sustainability goal, it has been assumed that an additional 24 inches of total subsidence (or a 5-year average rate of 2.4 inches/year) can occur until 2040 without experiencing undesirable results relating to inelastic land subsidence. The measurable objective for subsidence is 0 inches of total subsidence.

Table 1. Summary of Sustainable Management Criteria[1]

Sustainability Indicator	Undesirable Results	Identification of Undesirable Results	Measurable Objective	Minimum Threshold
Chronic lowering of groundwater levels	An undesirable result is experienced if sustained groundwater levels are too low to satisfy beneficial uses within the Subbasin over the planning and implementation horizon of the GSP.	Undesirable results occur when more than 25% of representative monitoring wells fall below their minimum elevation thresholds for two consecutive years, according to the San Joaquin Valley Water Year Hydrologic Classification.	At each of 23[1] representative wells, the measurable objective was defined based on the 2015 groundwater level values.	The deeper of 2015 groundwater levels with a buffer of 100 percent of historical range applied, or the 10th percentile domestic well depth within a 3-mile radius of the monitoring well,[2] whichever is shallower. In municipalities with ordinances requiring the use of municipal water, the 10th percentile municipal well depth is used in place of the 10th percentile domestic well depth criteria.

[1] These SMCs represent those established in the 2024 Plan Amendment.

Sustainability Indicator	Undesirable Results	Identification of Undesirable Results	Measurable Objective	Minimum Threshold
Reduction in groundwater storage	An undesirable result is experienced if sustained groundwater storage volumes are insufficient to satisfy beneficial uses within the Subbasin over the planning and implementation horizon of the GSP. Undesirable results related to groundwater storage are not present and are not likely to occur in the Subbasin.	Undesirable results would occur if groundwater storage volumes were depleted by 23 MAF (e.g., 30 MAF of freshwater remain in storage).	Management of reduction in groundwater storage is performed using groundwater levels as a proxy. Impacts would be experienced under the definition of undesirable results for groundwater levels long before the 23 MAF would have been removed from the Subbasin.	Management of reduction in groundwater storage is performed using groundwater levels as a proxy. Impacts would be experienced under the definition of undesirable results for groundwater levels long before the 23 MAF would have been removed from the Subbasin.
Degraded water quality	An undesirable result is experienced if SGMA-related groundwater management activities cause significant and unreasonable impacts to the long-term viability of domestic, agricultural, municipal, environmental, or other beneficial uses over the planning and implementation horizon of the GSP.	Undesirable results occur when more than 25% of representative monitoring wells exceed the minimum thresholds for water quality for two consecutive years and where these concentrations are the result of groundwater management activities.	At each of 20 representative wells, 600 mg/L TDS and the maximum recent historical conditions (2015-2023) for Chloride. The measurable objective is close to the recommended SMCL for TDS of 500 mg/L and significantly below the upper limit SMCL of 1,000 mg/L.	At each of 20 representative wells, 1,000 mg/L TDS and 250 mg/l Chloride (or 2015 conditions, whichever is greater), consistent with the upper SMCL and developed based on the TDS crop tolerances for fruit and nut trees and vineyards.
Saltwater migration	Seawater intrusion is not considered an applicable sustainability indicator for the Eastern San Joaquin Subbasin as the Subbasin is not in a coastal area and seawater intrusion is not currently present and is not reasonably expected to occur due to the active management of the 'X2' salinity barrier by the State.			

Sustainability Indicator	Undesirable Results	Identification of Undesirable Results	Measurable Objective	Minimum Threshold
Land subsidence	An undesirable result is experienced if the occurrence of land subsidence substantially interferes with beneficial uses of groundwater and infrastructure within the Subbasin over the planning and implementation horizon of the GSP. There are no historical records of significant and unreasonable impacts from subsidence in the Subbasin.	An undesirable result occurs when subsidence substantially interferes with beneficial uses of groundwater and surface land uses. Undesirable results would occur when substantial interference with land use occurs, including significant damage to canals, pipes, or other water conveyance facilities.	0 ft of inelastic land subsidence by 2040.	The minimum threshold for land subsidence in the Subbasin is set at no more than 0.2 foot/year (2.4 inches/year) in any five-year period between 2020 and 2040, resulting in no more than a total additional 2 feet (24 inches) of land subsidence by 2040.

Sustainability Indicator	Undesirable Results	Identification of Undesirable Results	Measurable Objective	Minimum Threshold
Depletions of interconnected surface water (ISW)	An undesirable result is experienced if the depletions of ISW causes significant and unreasonable adverse effects on beneficial uses of surface water within the Subbasin over the planning and implementation horizon of the GSP.	The undesirable result for depletions of ISW is depletions that result in reductions in flow or levels of major rivers and streams that are hydrologically connected to the basin such that the reduced surface water flow or levels have a significant and unreasonable adverse impact on beneficial uses and users of the surface water.	New monitoring network for ISW consists of a subset of wells from the chronic lowering of groundwater levels RMN combined with new wells constructed specifically to fill data gaps relating to an understanding of ISW. As such, some wells have a data set that allows for the setting of SMC, while others lack data because they are new. The ISW measurable objectives for wells with historical groundwater level observations are the same as for the chronic lowering of groundwater levels measurable objectives.	New monitoring network for ISW consists of a subset of wells from the chronic lowering of groundwater levels RMN combined with new wells constructed specifically to fill data gaps relating to an understanding of ISW. As such, some wells have a data set that allows for the setting of SMC, while others lack data because they are new. The ISW minimum thresholds for wells with historical groundwater level observations are the same as for the chronic lowering of groundwater levels minimum thresholds.

Notes:
1 20 wells were included in the representative monitoring network for groundwater levels in the 2020 GSP. As of the 2024 Amended GSP, 23 wells are included in the representative network for groundwater levels in an effort to fill identified data gaps in the Subbasin.
2 A radius of 2 miles was used for well 03N07E21L003 to reflect domestic well depths in close proximity to the Mokelumne River.

2.2.6 Monitoring Networks:

Monitoring networks were developed for the sustainability indicators that apply to the Eastern San Joaquin Subbasin, leveraging existing monitoring that has been conducted locally and in cooperation with DWR. The objective of these monitoring networks is to monitor conditions across the Subbasin so that the GSAs can continue to manage groundwater sustainably. Specifically, the monitoring networks were developed to do the following:

- Monitor impacts to the beneficial uses or users of groundwater.

- Monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds.
- Demonstrate progress toward achieving measurable objectives described in the GSP.
- Support estimation of annual changes in water budget components.

To achieve these objectives, the monitoring networks incorporate sites and frequencies that can detect seasonal and long-term trends for each applicable sustainability indicator. This includes selection of an appropriate temporal frequency and spatial density to evaluate groundwater conditions related to the effectiveness of the GSP.

There are four monitoring networks established within the 2024 Eastern San Joaquin Subbasin Amended GSP: a representative network for water levels, a representative network for water quality, a representative network for interconnected surface water, and a representative network for subsidence. Monitoring well data, as well as survey data for subsidence, from the representative monitoring networks are used to determine compliance with the minimum thresholds.

Wells in the monitoring networks are measured on a semi-annual schedule (spring and fall) for both groundwater levels and water quality, under the groundwater level, groundwater quality, and interconnected surface water networks. Data from four CGPS stations and six survey benchmarks will be collected annually starting in 2025. Historical measurements have been entered into the Subbasin's Data Management System (DMS), and future data will also be stored in the DMS.

A summary of the monitoring points in the representative monitoring networks is shown in **Table 2** below.

Table 2. Summary of Monitoring Network Wells

Representative Networks	Monitoring Location Count
Groundwater Levels	23
Groundwater Quality	20
Interconnected Surface Water (Groundwater Levels)	12
Subsidence (CGPS Stations)	4
Subsidence (Survey Benchmarks)	6

2.2.7 Projects and Management Actions

Achieving sustainability in the Subbasin requires implementation of projects and management actions. The Subbasin will achieve sustainability by implementing water supply projects that either replace groundwater use or supplement groundwater supplies to attain the current estimated pumping offset and/or recharge targets identified in the 2024 Amended GSP. In addition, various projects have been identified that support demand-side reduction activities through conservation measures, including water use efficiency upgrades. Currently, no pumping restrictions have been proposed for the Subbasin; however, GSAs maintain the flexibility to implement such demand-side management actions in the future if need is determined. While it is still the priority of the Subbasin to implement projects and management actions, a demand management program is currently in development that can be activated if the benefits of the projects and management actions are not realized.

Additional management activities are:

- Monitoring and recording of groundwater levels, groundwater quality, and subsidence data
- Maintaining and updating the DMS with newly collected data
- Annual monitoring of progress toward sustainability
- Annual reporting of Subbasin conditions to DWR as required by SGMA

As part of the effort to respond to DWR's comments on the 2020 GSP, projects and management actions were incorporated into a version of the ESJWRM Projected Conditions Baseline (PCBL) Version 2.0 and ESJWRM Projected Conditions Baseline with Climate Change (PCBL-CC) Version 2.0 to evaluate the impacts of such projects on the overall water budget of the Subbasin. Initially, all the projects from the 2020 GSP and 2022 Sustainable Groundwater Management (SGM) Grant Program's SGMA Implementation Round 1 application were considered. Based on updates in previous annual reports and information from representatives

of the GSAs, these projects have been categorized as Category A or B based on the following criteria:

- Category A projects - projects that were completed or are anticipated to advance in the next five years and have existing water rights or agreements.
- Category B projects - projects that are not anticipated to advance in the next five years, but may be implemented in the future, particularly if Category A projects do not fully achieve stated recharge and/or offset targets or do not produce a response as simulated in the model.

A call for projects was completed as part of the 2025 Periodic Evaluation and Plan Amendment to add additional projects as necessary. As of the 2024 GSP Amendment, Category A included 14 projects (summarized in the table in **Appendix A**); 12 of those projects were simulated in ESJWRM and tested against varying hydrologic, water supply, and demand conditions in the PCBL Version 3.0 and PCBL-CC Version 3.0 scenarios.

2.2.8 Implementation

Implementation of the GSP includes monitoring of conditions, comparing against sustainable management criteria, reporting of those conditions, implementing adaptive management strategies, implementing projects and management actions, and funding of these activities. Data are collected through monitoring on a prescribed schedule for each monitoring network. The data collected are used to improve the understanding of the Subbasin, as well as for comparison with the sustainable management criteria. Each representative monitoring site included in each monitoring network has defined quantitative measurable objectives and minimum thresholds for each applicable sustainability indicator. Comparison of monitoring data and measurable objectives allow for assessment and tracking of desired conditions. Comparisons with minimum thresholds allow for assessment and tracking of undesirable results.

While undesirable results are not anticipated, should measured data at representative monitoring sites begin to approach minimum thresholds, the ESJGWA will convene a working group to evaluate adaptive management strategies, such as the implementation of groundwater pumping curtailments, land fallowing, etc. Further, the total percentage of representative sites exceeding minimum thresholds will be calculated and compared against the percentage which has been identified as reflective of undesirable results. As part of the 2024 Amended GSP, the GWA developed a framework for a Demand Management Program intended as a backstop to achieving the Subbasin's sustainability goals (Appendix 6-B). This program is expected to be developed and adapted over the next 3 years, driven by the GSAs. It is expected that the program will be implemented by GSAs by December 31, 2028, if necessary. Adaptive management is a key component of the program. A program that is flexible and developed to adapt to changing conditions will be the most effective. There are many uncertainties in meeting demand management goals, including hydrology, PMA implementation schedule, PMA benefits, and modeling uncertainty. Given these unknowns, the program will be adapted on an annual

basis. Each year, the hydrologic conditions will be evaluated through the existing annual report process. Progress toward reaching PMA goals will be reported by GSAs as well. The ESJWRM flow model will be updated annually to incorporate the latest hydrologic conditions and demand assumptions. It will then be used to calculate a new demand reduction target. Through this iterative approach the Subbasin will be able to adjust the approach to the natural conditions and accommodate any project delays. A Dry Domestic Well Mitigation Program was approved by the GWA at its September 11, 2024 Board Meeting. The resolution and details of the program are included as Appendix 3-J of the 2024 Amended GSP.

The Eastern San Joaquin Subbasin applied for funding under the Proposition 68 Sustainable Groundwater Planning Grant Program, Round 3. The ESJGWA was awarded $500,000 on January 24, 2020 and used that data to improve monitoring data collection and upload to the DMS, for the construction of a nested monitoring well adjacent to the Delta to assess cross-boundary flows in the area, and to develop a tool to facilitate fiscal planning for GSP implementation. Additionally, the ESJGWA received funding under the Proposition 68 Sustainable Groundwater Management Grant Program – Critically Overdrafted Basin SGMA Implementation Round 1 to identify and implement projects that enhance direct recharge in the Subbasin. Projects in the Subbasin are being implemented at the GSA level and include monitoring and reporting, model verification efforts, and public engagement and outreach. Finally, the ESJGWA submitted a grant application under the Proposition 68 Sustainable Groundwater Management Grant Program Round 2 for additional funding to further implementation of the identified projects. Unfortunately, the Subbasin's funding application was not successful.

Implementation activities are reported in annual reports due April 1st of each year and include conditions and activities from the previous water year. This WY 2024 report is the sixth annual report to be prepared following GSP submittal on January 31, 2020. Evaluation reports will also be developed every five years to document progress on implementation and to reconsider elements of the GSP. The first Periodic Evaluation was submitted to DWR on January 28, 2025. The 2024 GSP Amendment was also submitted on January 28, 2025, with updates to the GSP in response to DWR's recommended corrective actions as contained in their 2023 Determination Letter.

3. GROUNDWATER DATA ANALYSIS SUMMARY

This section discusses hydrologic conditions, groundwater elevation trends, groundwater quality, subsidence, and groundwater-surface water interaction in the Eastern San Joaquin Subbasin.

3.1 HYDROLOGIC CONDITIONS:

Rainfall data derived from the PRISM (Precipitation-Elevation Regressions on Independent Slopes Model) dataset of the DWR's California Simulation of Evapotranspiration of Applied Water (CALSIMETAW) model indicate a Subbasin average of 17.3 inches of rainfall during WY 2024. This represents approximately 109% of the long-term (WY 1969-2022) Subbasin average precipitation of 15.9 inches. San Joaquin River flow at Vernalis for the same period had an average monthly discharge of approximately 195 thousand acre-feet, representing about 74% of the long-term (WY 1965-2024) average flow at that location (USGS, 2024). The Cosumnes River at Michigan Bar for this period had an average monthly discharge of approximately 33 thousand acre-feet, representing about 105% of the long-term (WY 1965-2024) average flow at that location (USGS, 2024); and the Calaveras River flow below New Hogan Dam had an average monthly discharge of approximately 10 thousand acre-feet, representing about 76% of the long-term (WY 1965-2024) average flow at that location (US Army Corps of Engineers, 2024).

3.2 GROUNDWATER LEVELS:

Figure 2 shows the location of the representative monitoring wells identified in the GSP monitoring network for the chronic lowering of groundwater levels. Individual hydrographs[2], charts of groundwater levels over time, for these wells are included in **Appendix B**. The hydrographs display historical trends of groundwater levels in the Subbasin through WY 2024, contingent upon data availability. All available data are shown (DWR, 2024). Hydrographs for representative monitoring wells also display the quantitative minimum threshold and measurable objective that were documented in Chapter 3 (Sustainable Management Criteria) of the 2024 Amended GSP.

All hydrographs show yearly cycles of groundwater level declines in summer due to typical patterns in groundwater pumping and recharge during winter recovery. Of the 23 representative monitoring wells, 15 wells reported groundwater levels for Fall 2023 and 17 wells reported groundwater levels in Spring 2024 as shown in **Table 7**. Wells that were not monitored were noted as "Inaccessible" during these two time periods and therefore measurements could not be collected.

A comparison of Spring 2024 groundwater levels with the range of historical spring levels for

[2] Except where noted, groundwater levels in hydrographs were converted to the North American Vertical Datum of 1988 (NAVD88), consistent with CASGEM groundwater data reporting.

representative wells in the Subbasin shows a mix of minimal increasing and decreasing trends in groundwater levels over Spring 2023, varying by well. These minimal changes are generally consistent with an Above Normal water year type where the hydrologic conditions are neither extremely wet or extremely dry.

According to DWR's Dry Well Reporting System, Eastern San Joaquin Subbasin had three reported water shortages from dry wells in the 365 days prior to the preparation of this report (DWR, 2025).

All monitoring data collected in WY 2024 are included in a table in **Appendix C**.

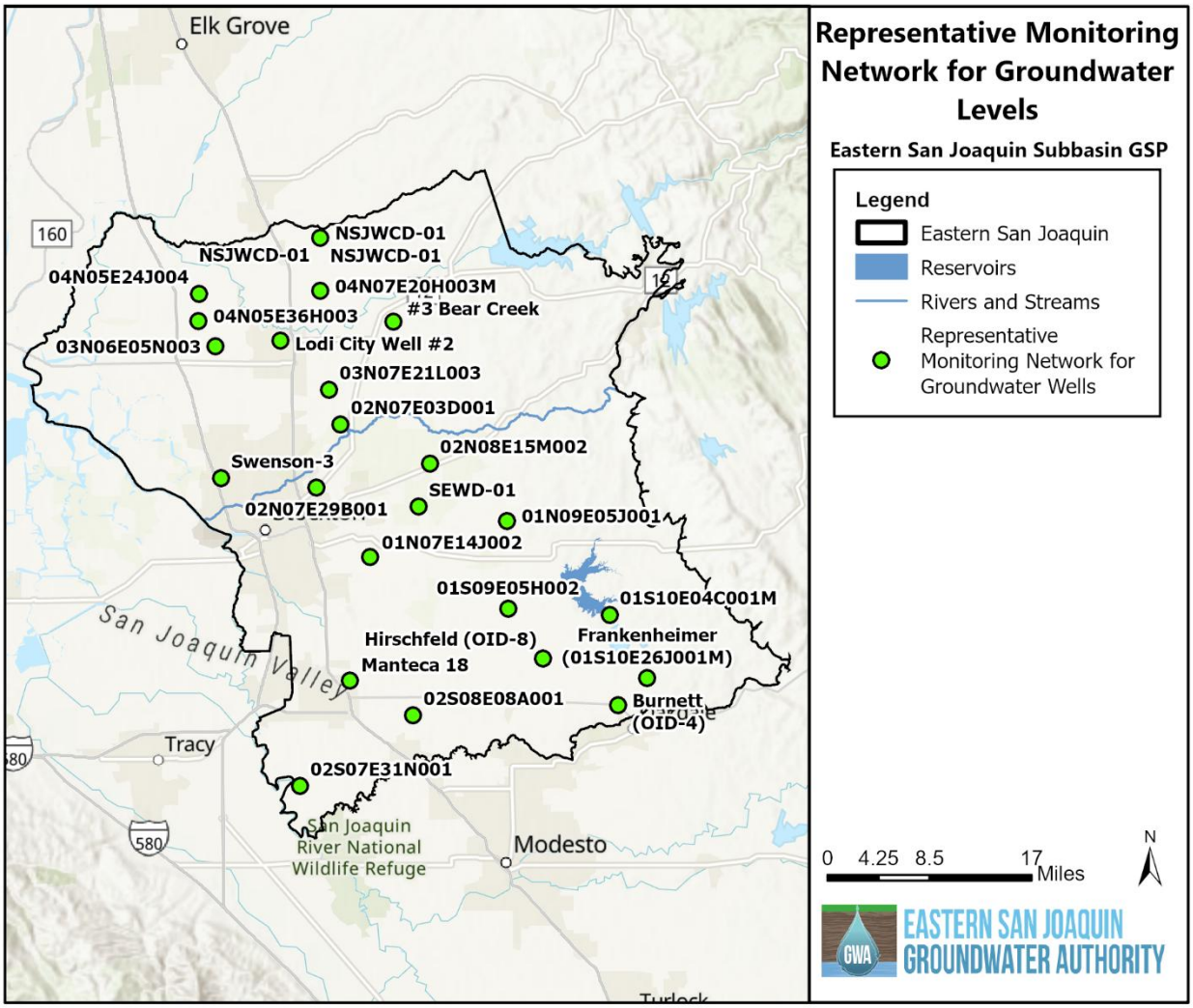


Figure 2. Groundwater Level Representative Monitoring Well Locations

3.2.1 Groundwater Level Contour Maps:

Groundwater level contour maps were developed as part of this annual report to represent seasonal high and seasonal low groundwater conditions. Fall 2023 (September, October,

November 2023) and Spring 2024 (March, April, May 2024) groundwater elevation maps are included in **Figure 3** and **Figure 4**.

Previous work expanded the groundwater level period to include September and May for seasonal low and seasonal high readings, respectively. This definition was used again in this year's annual report. This approach reduces the impact of disruptions to the monitoring data quality used to develop the groundwater contour map by increasing the number of groundwater level measurements considered during contour development. This also allowed the analysis to capture a larger dataset and better represent current conditions.

Groundwater levels in the center of the Subbasin fell slightly between Spring of WY 2023 and the beginning of WY 2024 (Fall 2023). Between Fall WY 2024 (Fall 2023) and Spring WY 2024 (Spring 2024), groundwater levels increased, particularly in the center of the basin, reflecting a typical rebound of water levels in the wetter season. The seasonal low in WY 2024 had higher groundwater levels than the seasonal low of WY 2023, likely as a result of the wet year conditions in WY 2023 that raised groundwater levels.

Groundwater elevation contours shown in **Figure 3** and **Figure 4** used the Inverse Distance Weighting (IDW) interpolation method (as opposed to the spline interpolation used in the 2020 GSP) as the IDW method better represented the updated data set. Areas where there were limited WY 2024 data available are indicated with hash marking on both figures. There is a notable data gap on the eastern side of the Subbasin. While efforts have been made to fill data gaps in this region of the Subbasin since 2020, it continues to be identified as a data gap. Filling in this data gap continues to be a critical management action for the Subbasin.

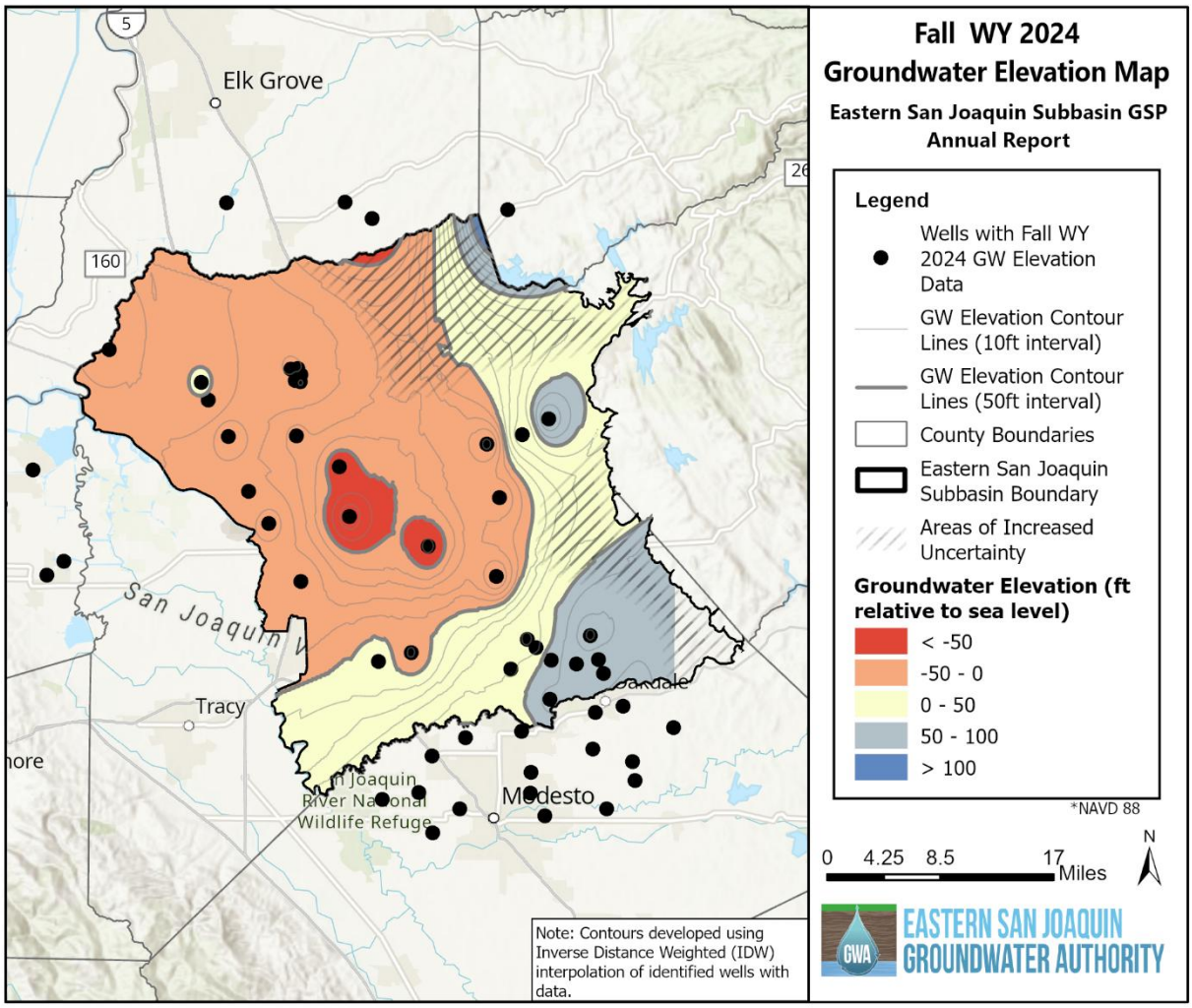


Figure 3. Seasonal Low Groundwater Levels in the Eastern San Joaquin Subbasin, based on data from September 2023 (WY 2023), October 2023 (WY 2024), and November 2023 (WY 2024)

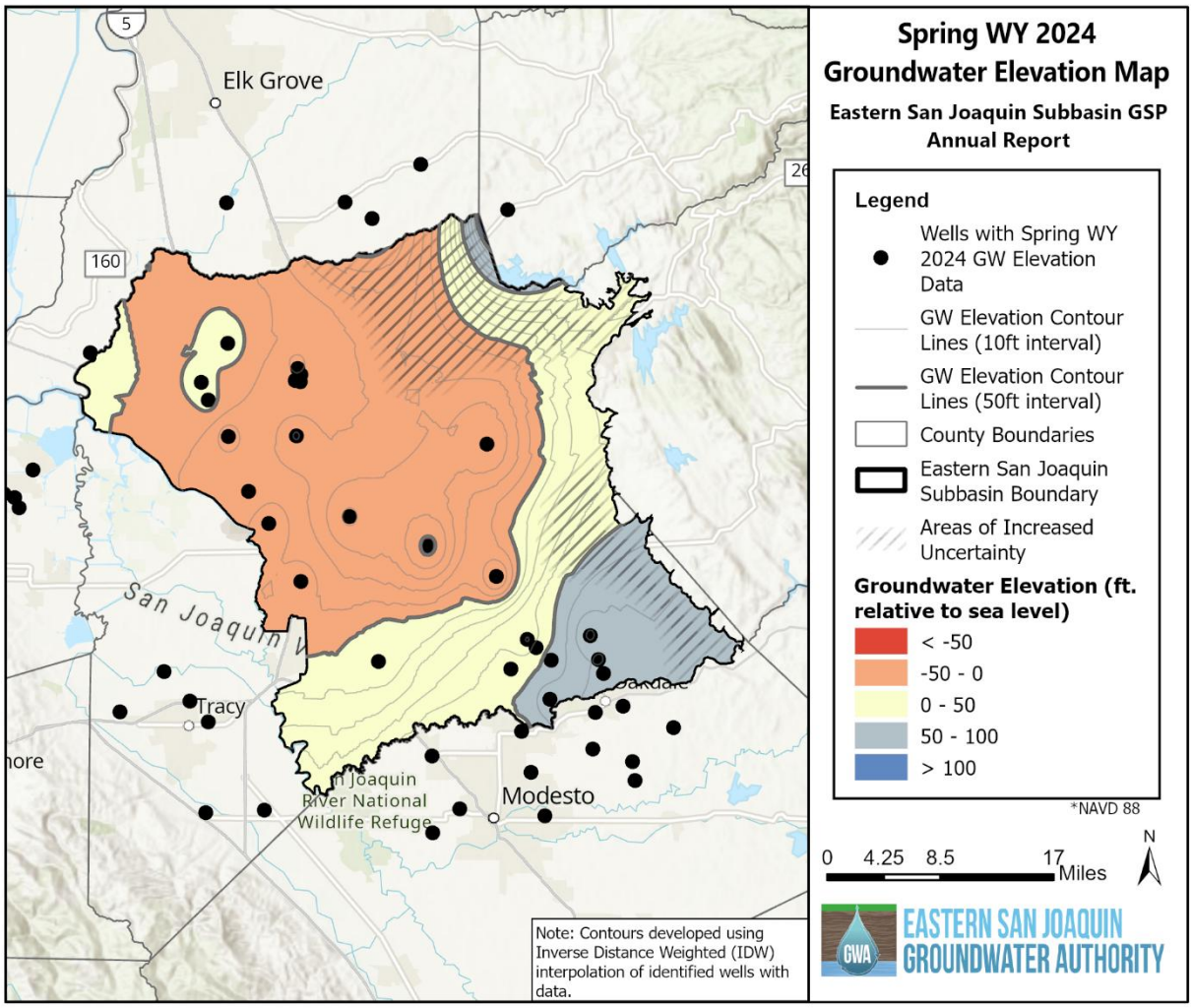


Figure 4. Seasonal High Groundwater Levels in the Eastern San Joaquin Subbasin, based on data from March, April, and May 2024 (WY 2024)

3.3 CHANGE IN GROUNDWATER STORAGE

Change in groundwater storage is estimated using the Historical ESJWRM Version 3.0 with time series extended through WY 2024. **Figure 5** shows the annual and cumulative change in storage from WY 1996 to 2024 for the Eastern San Joaquin Subbasin. In WY 2024 (October 1, 2023 to September 30, 2024), the Eastern San Joaquin Subbasin had a decrease in groundwater in storage of approximately 55,000 AF, reflecting the normal conditions of the year. **Figure 5** indicates positive "Change in Storage", meaning that inflows (consisting of deep percolation, recharge, flow from streams, and boundary inflows) were smaller than outflows in WY 2024. **Figure 6** adds all inflows together to highlight the annual change in storage. **Figure 7** shows this inverse "Change in Storage" plotted with "Groundwater Pumping" and "Cumulative Change in Storage." Since 2015, ESJWRM estimates there has been a cumulative decrease in storage of approximately 624,400 AF.

Figure 8 shows the change in groundwater storage for the Eastern San Joaquin Subbasin by ESJWRM element between October 1, 2023 and September 30, 2024. On an ESJWRM element basis, groundwater storage was estimated to increase or decrease by 0.25 feet over much of the Subbasin, with small areas of decrease of up to 1.1 feet in the western portion of the Subbasin, closer to the foothills, and along Mokelumne River. The areas that likely benefited from the WY 2023 wet year conditions seem to be those that experienced a decrease in WY 2024 as conditions became drier. The north-west portion of the Subbasin experienced the largest increase in storage in comparison to WY 2023, with up to a 0.4-foot increase during WY 2024. Though change in storage varied on an ESJWRM element basis, there was an overall net decrease in groundwater storage in the Eastern San Joaquin Subbasin during WY 2024 as previously stated and reflected in **Figure 5** to **Figure 7** and mapped in **Figure 8**.

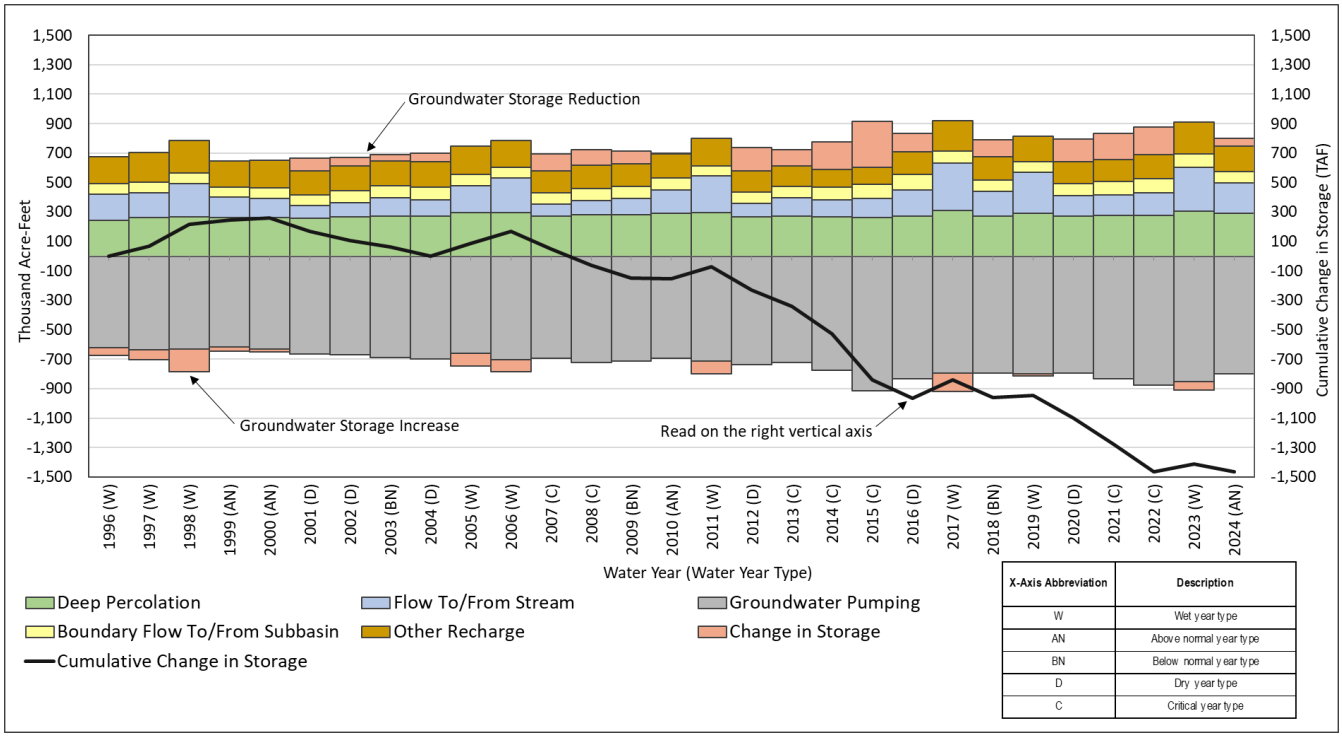


Figure 5. Modeled Change in Annual Storage with Water Use and Year Type

Notes:

1. Water Year Types based on San Joaquin Valley Water Year Index (CA DWR, 2025). Water Year 2024 classification is above normal (AN) based on the hydrologic conditions for this analysis; however, the San Joaquin Valley Water Year Index has not yet published the official WY 2024 designation.
2. "Other Recharge" includes managed aquifer recharge, recharge from unlined canals and/or reservoirs, and recharge from ungauged watersheds.
3. "Change in Storage" balances the water budget. For instance, if annual outflows (-) are greater than inflows (+), there is a decrease in storage, but this would be shown as storage depletion on the positive side of the bar chart to balance out the increased outflows on the negative side of the bar chart.
4. The uncertainty associated with estimating change in storage using Historical ESJWRM Version 2.0 was evaluated using sensitivity analysis. This analysis indicates that the average difference in change in storage estimates varies approximately 47% across all sensitivity runs.

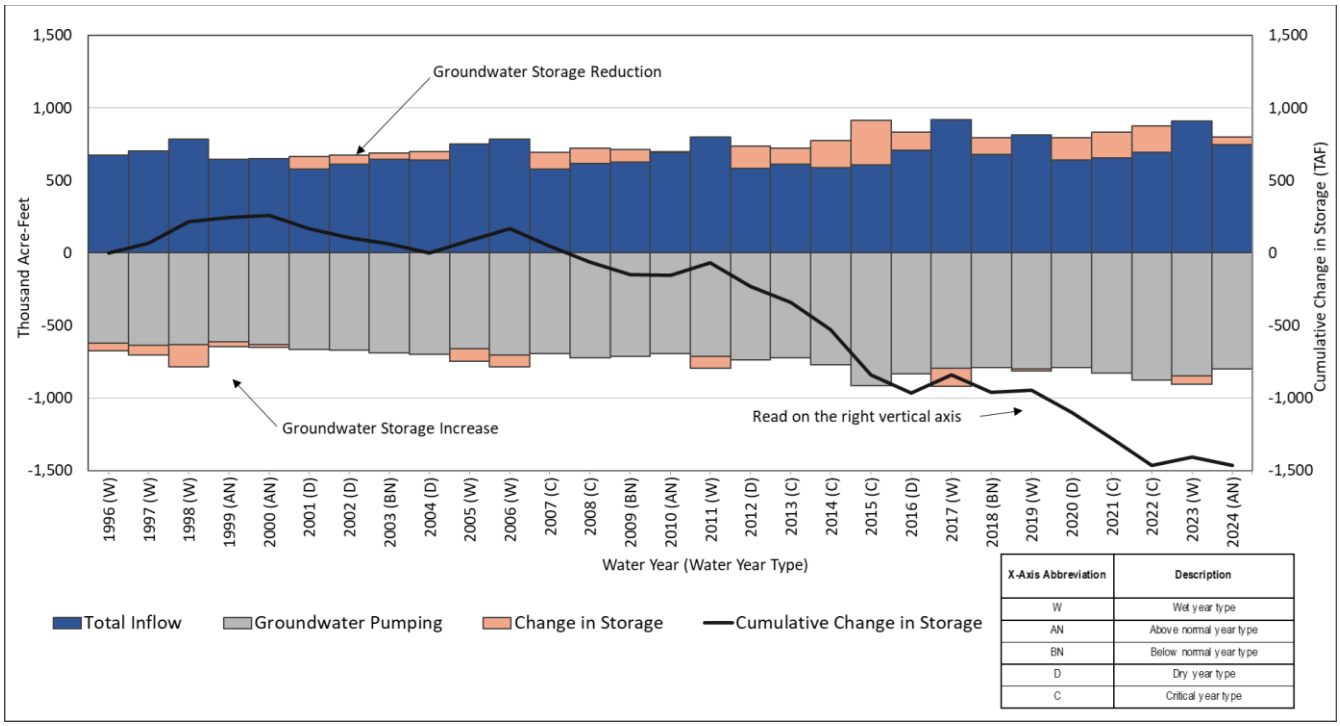


Figure 6. Modeled Change in Annual Storage with Inflows and Year Type

Notes:

1. Water Year Types based on San Joaquin Valley Water Year Index (CA DWR, 2025). Water Year 2024 classification is above normal (AN) based on the hydrologic conditions for this analysis; however, the San Joaquin Valley Water Year Index has not yet published the official WY 2024 designation.
2. "Total Inflow" includes "Deep Percolation", "Flow To/From Stream", "Other Recharge", and "Boundary Flow To/From Subbasin" from **Figure 5**.
3. "Change in Storage" balances the water budget. For instance, if annual outflows (-) are greater than inflows (+), there is a decrease in storage, but this would be shown as storage depletion on the positive side of the bar chart to balance out the increased outflows on the negative side of the bar chart.

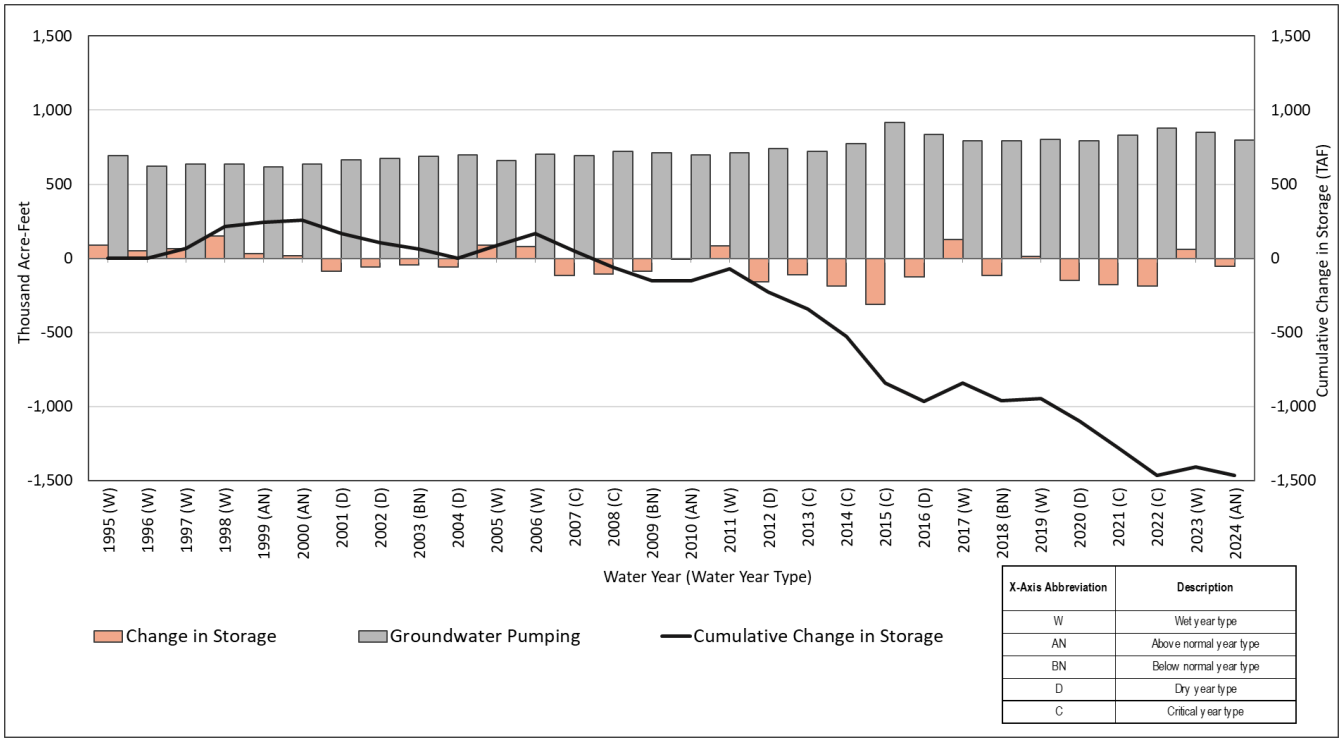


Figure 7. Modeled Change in Annual Storage with Groundwater Pumping and Year Type

Notes:

1. Water Year Types based on San Joaquin Valley Water Year Index (CA DWR, 2025). Water Year 2024 classification is above normal (AN) based on the hydrologic conditions for this analysis; however, the San Joaquin Valley Water Year Index has not yet published the official WY 2024 designation.
2. "Groundwater Pumping" and "Change in Storage" are the inverse of what is shown in **Figure 5** and **Figure 6**. In this figure, a positive "Change in Storage" indicates an increase in groundwater storage, while a negative "Change in Storage" indicates a decrease in groundwater storage. These changes are directly reflected in the "Cumulative Change in Storage" line. The annual "Groundwater Pumping" is shown adjacent to the "Change in Storage" for the same year.

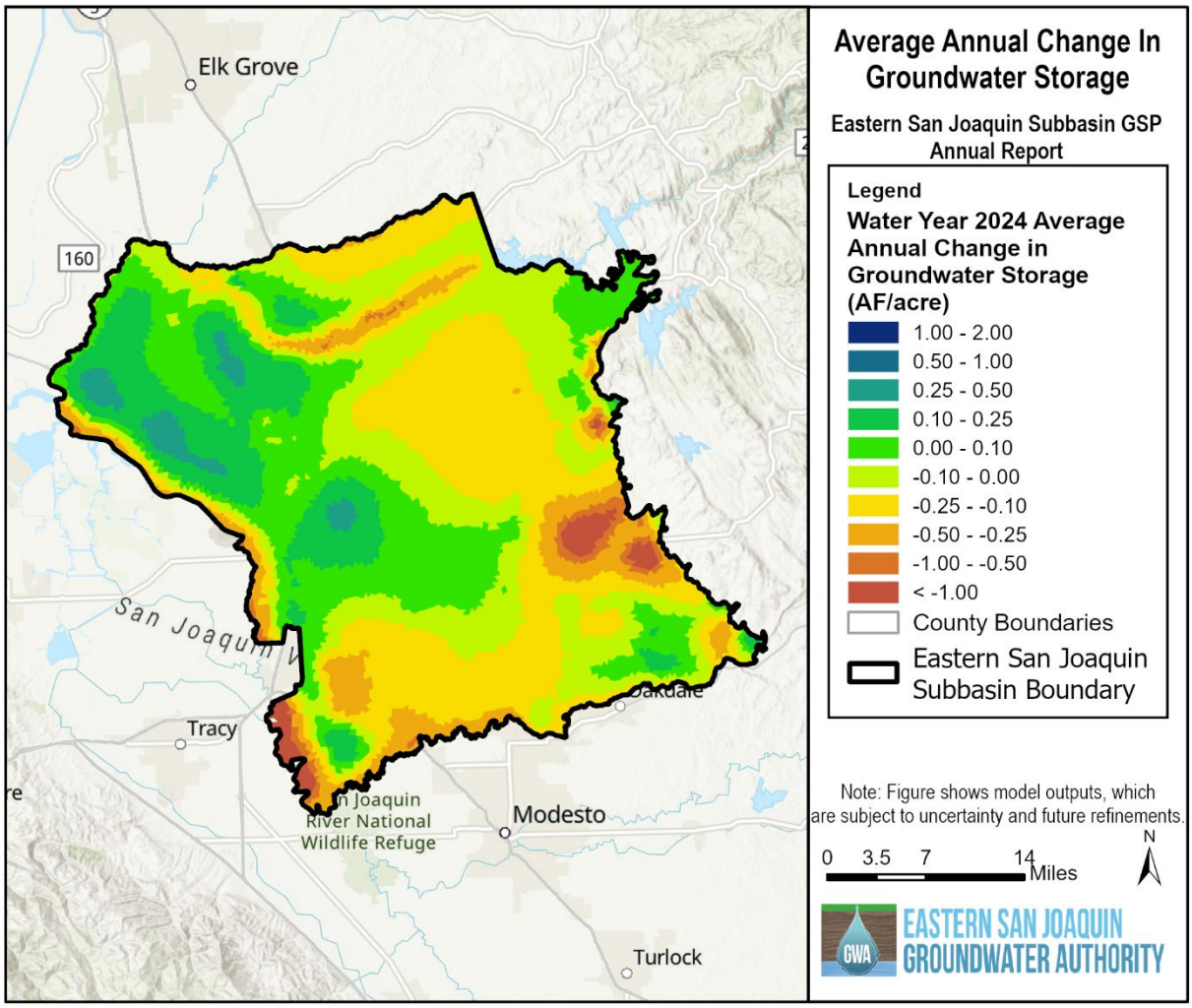


Figure 8. Eastern San Joaquin Subbasin WY 2024 Change in Storage

3.4 GROUNDWATER QUALITY

While groundwater quality in the Eastern San Joaquin Subbasin is generally sufficient to meet beneficial uses and is on track to surpass measurable objectives, there are a few constituents of concern that are either currently impacting groundwater use or could impact groundwater use in the future. Each water quality parameter may be naturally occurring or anthropogenic in source, as well as localized or widespread.

The monitoring network for water quality is tested for TDS and chloride, as defined in the 2024 Plan Amendment. Other constituents are currently being monitoring in other ongoing programs (such as the Irrigated Lands Regulatory Program), and data from these programs are considered in the annual evaluation of Subbasin groundwater quality. If groundwater quality conditions violate existing regulations or if monitoring efforts indicate concerning trends, the ESJGWA will take steps to coordinate with regulatory agencies implementing those programs and will evaluate establishing minimum thresholds and measurable objectives for these constituents at that time. Future amendments to the GSP will continue to document trends in monitored constituents as needed and identify opportunities for coordination with existing programs.

Ten representative monitoring wells were selected for the representative monitoring network for groundwater quality in the 2020 GSP. Ten additional wells were added as part of the 2024 Plan Amendment in order to fill data gaps in the network. With the implementation of the 2024 Plan Amendment, the ESJGWA GSAs have jointly decided to improve the monitoring of groundwater quality in the Subbasin by contracting with a single entity to monitor all wells. This monitoring program began in Fall 2024. The groundwater quality monitoring that did take place in WY 2024 is summarized in **Table 8** and **Table 9** in Section 4.1.3, Progress Toward Implementation of this Annual Report. Details regarding the status of wells that were not sampled during WY 2024 are also included. There were no minimum threshold exceedances to report for WY 2024.

3.4.1 Total Dissolved Solids Measurements in Representative Monitoring Network Wells

During WY 2024, TDS measurements were reported in either Fall 2023 or Spring 2024 from seven of the ten representative monitoring wells for water quality required under the 2022 Revised GSP. Of the wells that were added as part of the 2024 Plan Amendment, two were sampled in WY 2024. The ESJGWA has committed to monitoring all twenty wells with the required frequency stated in the 2024 Plan Amendment starting in WY 2025. The Fall 2024 measurements are also included in **Table 8** to indicate progress toward this commitment. The locations of the ten representative monitoring wells included in the 2022 GSP are shown in **Figure 9**. There were no minimum threshold exceedances to report for WY 2024.

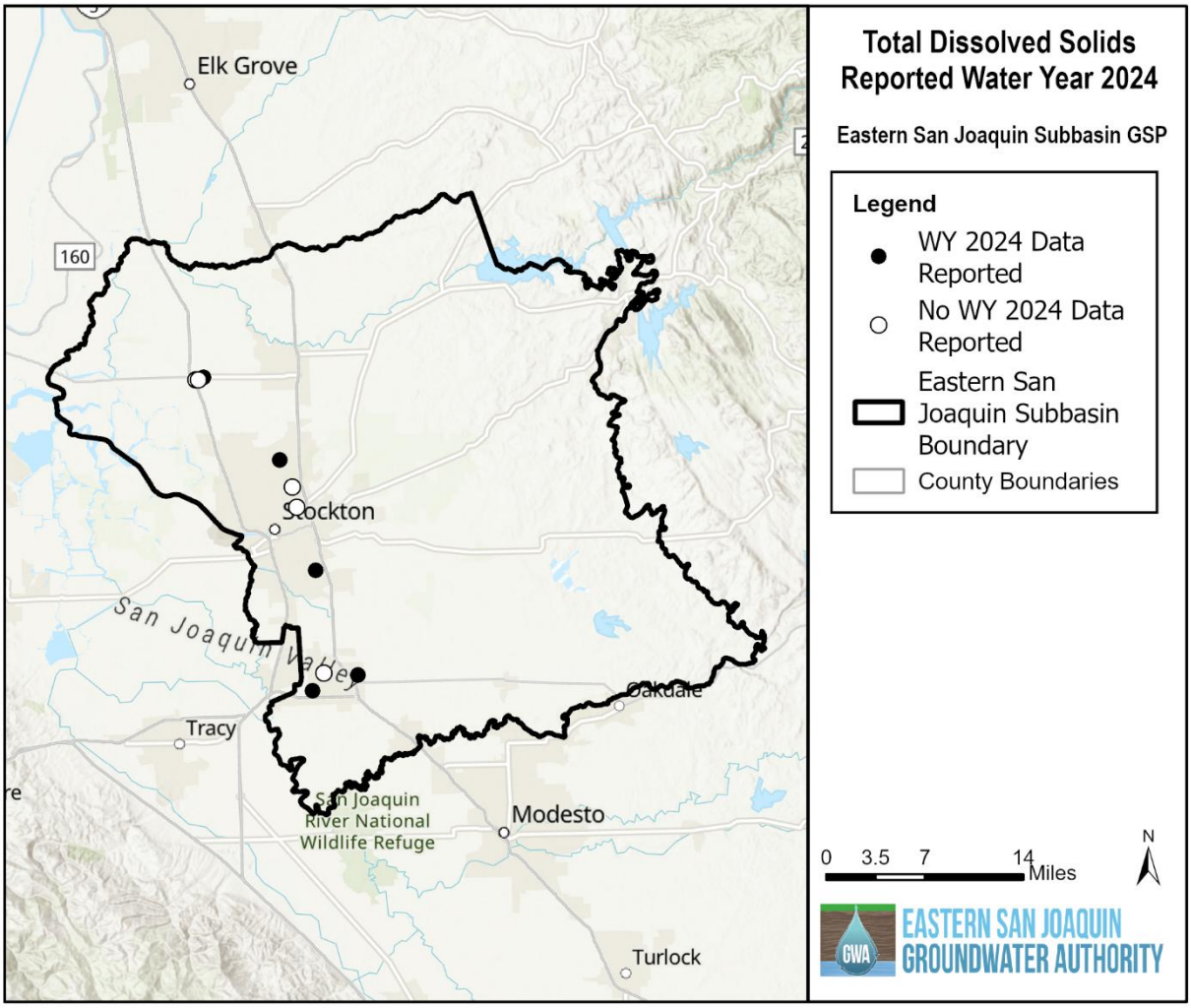


Figure 9. Water Year 2024 Total Dissolved Solids Measurements at Representative Monitoring Well Sites (2022 Revised GSP RMN)

3.4.2 Chloride Measurements in Representative Monitoring Network Wells

During WY 2024, chloride measurements were reported in either Fall 2023 or Spring 2024 from seven of the ten representative monitoring wells for water quality required under the 2022 Revised GSP. Of the ten wells that were added as part of the 2024 Plan Amendment, two were sampled in WY 2024. The ESJGWA has committed to monitoring all twenty wells with the required frequency stated in the 2024 Plan Amendment starting in WY 2025. The Fall 2024 measurements are also included in **Table 9** to indicate progress toward this commitment. The locations of the ten representative monitoring wells required as part of the 2022 GSP are shown in **Figure 10**. There were no minimum threshold exceedances to report for WY 2024.

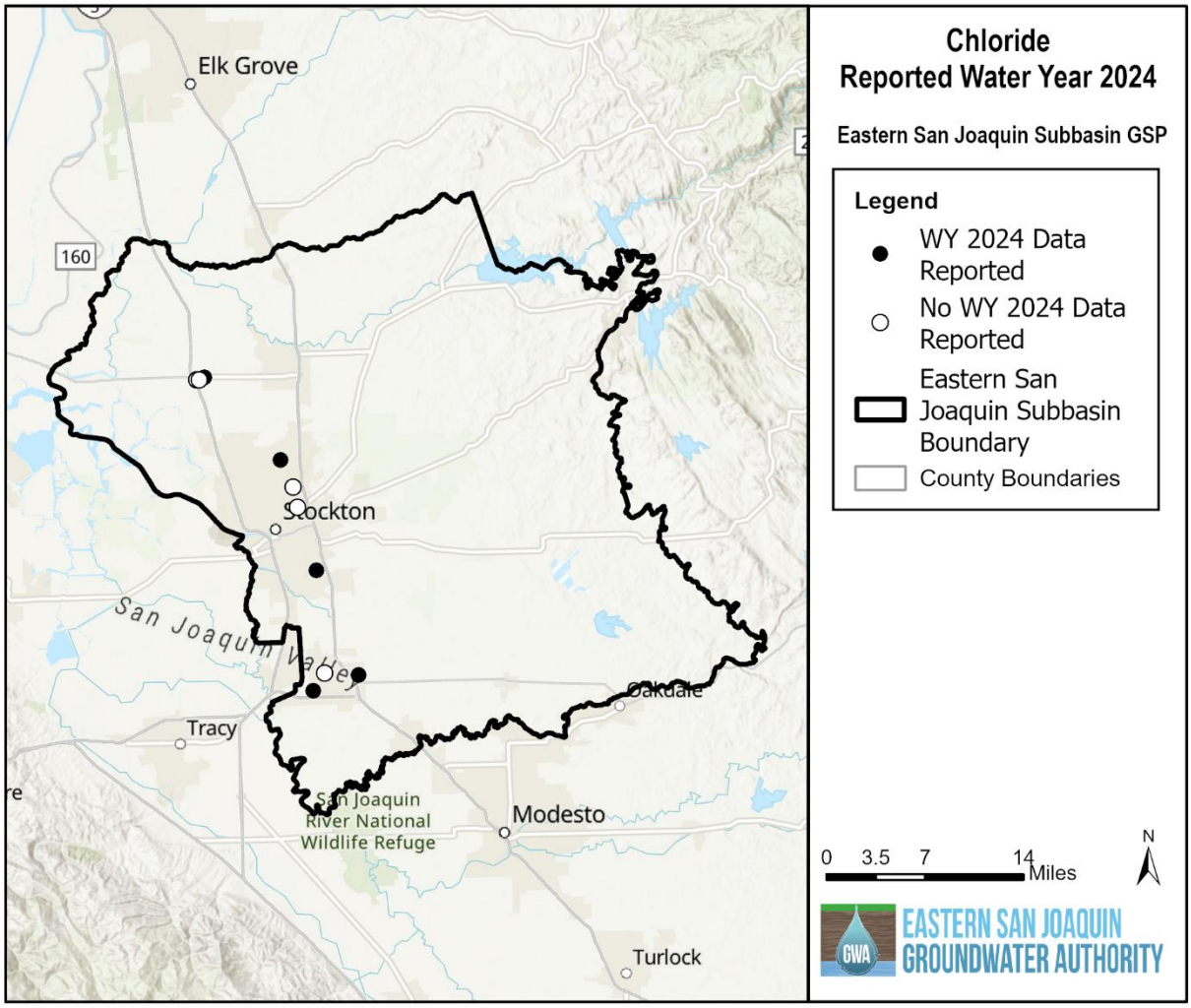


Figure 10. Water Year 2024 Chloride Measurements at Representative Monitoring Well Sites (2022 Revised GSP RMN)

3.4.3 Contaminated Sites

At the time of preparation of this annual report, there were 122 open or active point source contamination sites identified by GeoTracker in the Eastern San Joaquin Subbasin. Out of the 122 open or active sites, there are 81 sites that have ongoing cleanup programs in progress, 38 sites are locations of leaking underground storage tanks (LUSTs), and 3 are military cleanup sites that are being remediated. There is one Superfund site on the National Priorities List within the Subbasin boundary, in the City of Stockton (SWRCB, GeoTracker, 2025). Real-time data on contaminated sites added during a single water year are limited and variable.

3.4.4 Regional Groundwater Quality

The primary naturally-occurring water quality constituents of concern are salinity and arsenic, while primary water quality constituents related to human activity include nitrates, salinity, and

various point-source contaminants. According to the 2024 Aquifer Risk map, which shows aquifer risk based on groundwater that may not be meeting primary drinking water standards, water quality across the Subbasin is most degraded along the western side of the Subbasin, particularly in the southwest corner of the Subbasin and around the cities of Stockton, Manteca, and Lodi. Nitrate and arsenic are designated as the highest category of risk in these areas. High Risk areas for arsenic are mostly concentrated right along the western boundary of the Subbasin and High Risk areas for nitrate cover much of the western half of the Subbasin (SWRCB, 2024).

3.4.5 Relationship Between Groundwater Levels and Groundwater Quality

As part of the 2024 Amended GSP, the ESJGWA committed to completing an annual trends analysis to track the relationship between declining groundwater levels and degraded groundwater quality as part of their response to DWR's recommended corrective actions. Three wells that overlap between the representative monitoring network for groundwater levels and the new representative monitoring network for groundwater quality were selected to report this analysis each year, including: Swenson-3, Lodi City Well #2, and OID-8. Only Fall 2024 (WY 2025) measurements of TDS and chloride have been collected so far at these wells, and therefore, there is not sufficient historical data to report a trend in this annual report. The initial trends analysis included in Appendix 3-C of the 2024 Amended GSP represents the best available assessment of the relationship between groundwater levels and degrading groundwater quality. This initial assessment concluded that there is not substantial evidence of a relationship between these two variables at adjacent wells.

An analysis will be reported in future annual reports once there is sufficient data collected at these wells to identify a trend.

3.5 SALTWATER MIGRATION

Sustainable management criteria were included for saltwater migration in the 2020 GSP and 2022 Revised GSP. However, in responding to the recommended corrective actions contained in DWR's 2023 Determination Letter, the Subbasin reevaluated the logic of seawater intrusion as an applicable sustainability indicator for the Subbasin. The Subbasin GSAs, in discussion with DWR, determined that seawater intrusion is not an applicable sustainability indicator for the Subbasin because the Sacramento-San Joaquin River Delta (Delta) is managed as a freshwater body by the State, there is minimal groundwater pumping near the Delta, and there are relatively low chloride concentrations in the Subbasin (as demonstrated by the mapping of current chloride concentrations in the Subbasin). The Subbasin will continue to address salinity as a groundwater quality issue through groundwater quality SMCs, and the Subbasin is committed to monitoring and changing management strategies if conditions warrant. As a result, in the 2024 GSP Amendment, the Subbasin GSAs removed seawater intrusion as an applicable sustainability indicator and added chloride to the degradation of groundwater quality sustainability indicator as a constituent of concern.

Any migration of saltwater that may occur would be captured within the monitoring for degradation of water quality indicator.

3.6 LAND SUBSIDENCE

SGMA considers the impact of groundwater management actions on land subsidence through the land subsidence sustainability indicator. In the 2022 Revised GSP, the land subsidence sustainability indicator used the groundwater level sustainability indicator as a proxy. In the 2024 Plan Amendment, a new representative monitoring network was developed for subsidence and SMC were developed for each location. This monitoring network includes both Continuous GPS (CGPS) stations and survey benchmarks. The CGPS stations are collected continuously, and their data are publicly available. Two CGPS subsidence monitoring stations (MTWK and P309) were measured during WY 2024. Vertical displacement measured at those locations throughout WY 2024 are shown in **Figure 12** and **Figure 13**. MTWK station shows approximately 0.03 inches of subsidence and P309 shows approximately 0.05 inches of subsidence during WY 2024. InSAR data released by DWR were also available and is shown in **Figure 11**. InSAR data indicate that throughout the Subbasin within the water year, there was at maximum between 0.01 and 0.1 feet (or between 0.12 and 1.2 inches) of subsidence.

Monitoring at the survey benchmark locations will begin in Spring 2025 and be reported on in the WY 2025 annual report. There were no minimum threshold exceedances for subsidence at CGPS stations, or as shown in the InSAR data, in WY 2024.

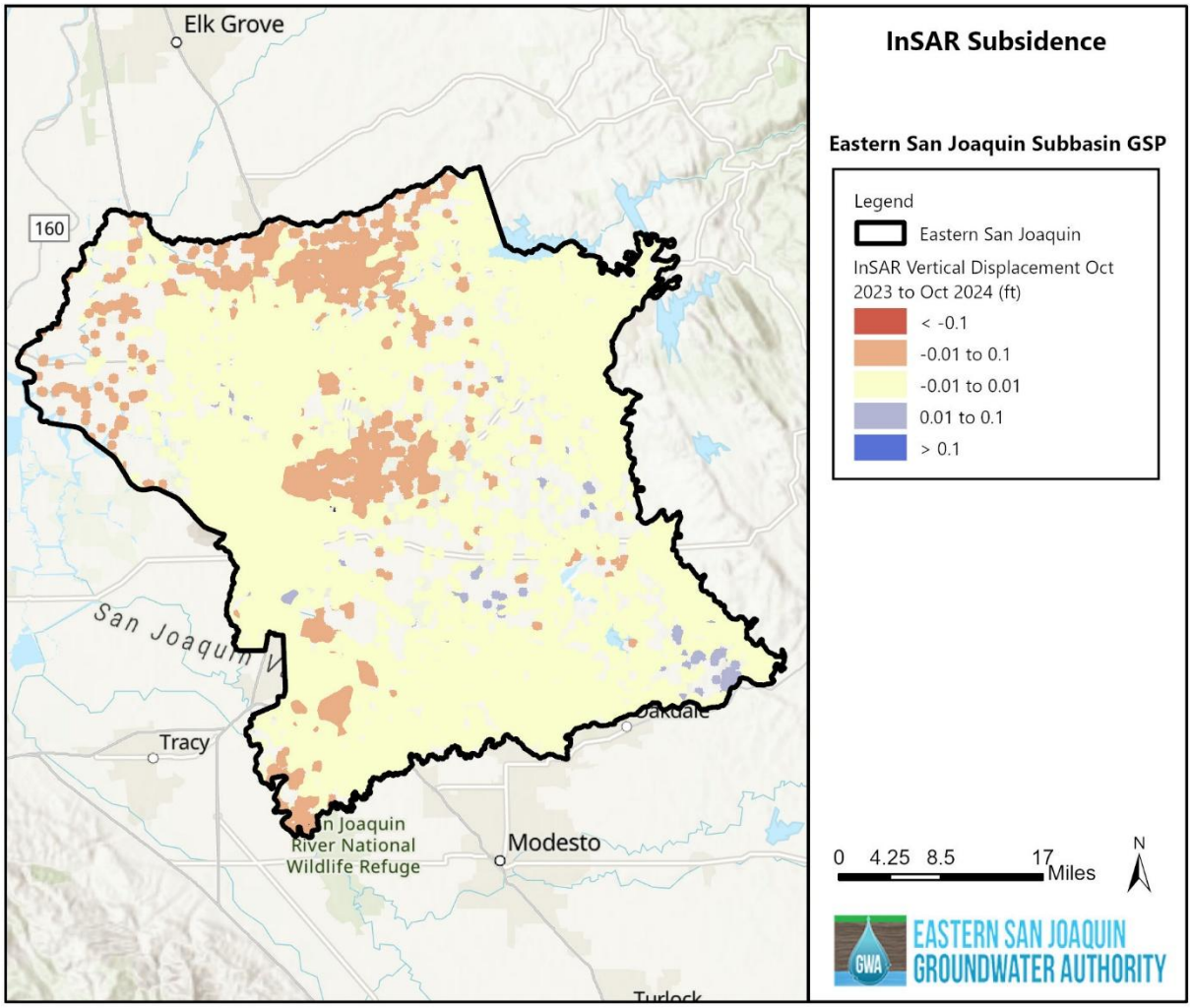


Figure 11. Water Year 2024 InSAR Vertical Displacement (October 2023 – October 2024)

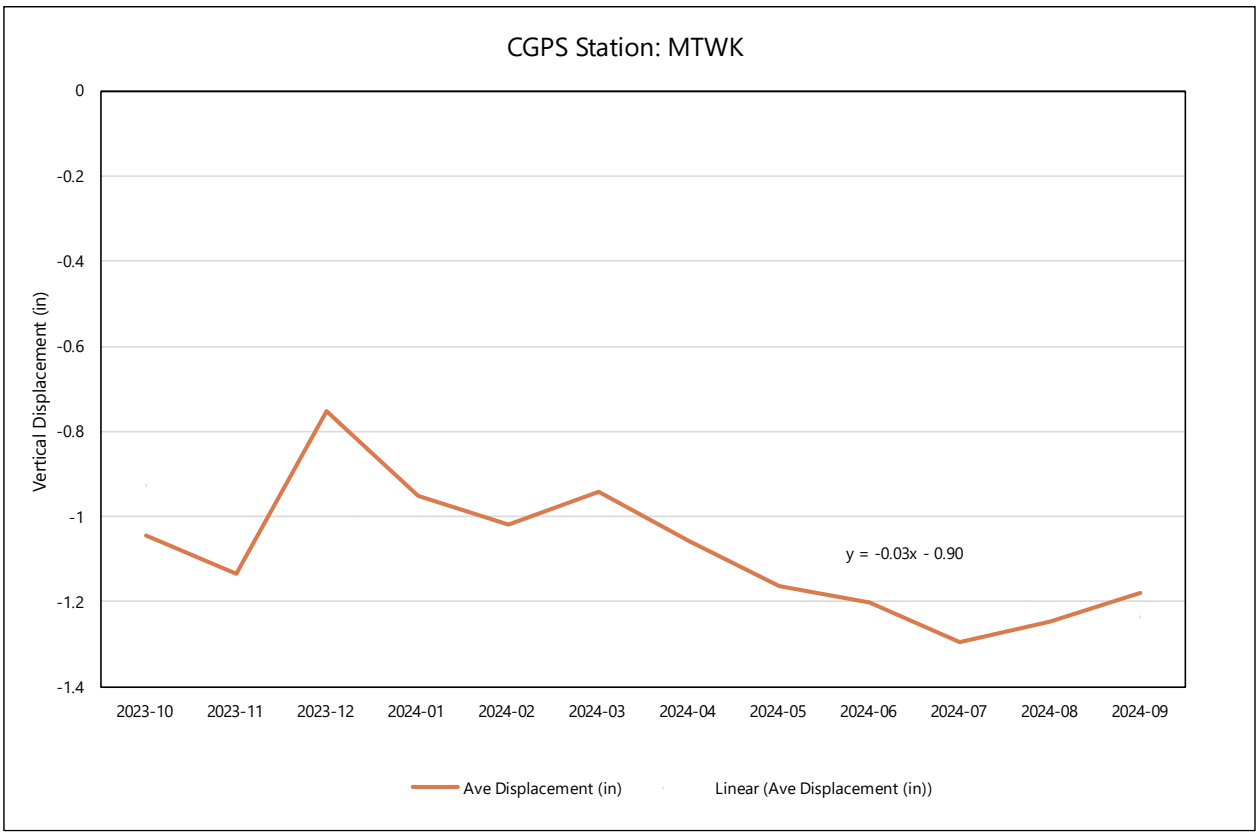


Figure 12. Vertical Displacement at CGPS Station MTWK in Water Year 2024

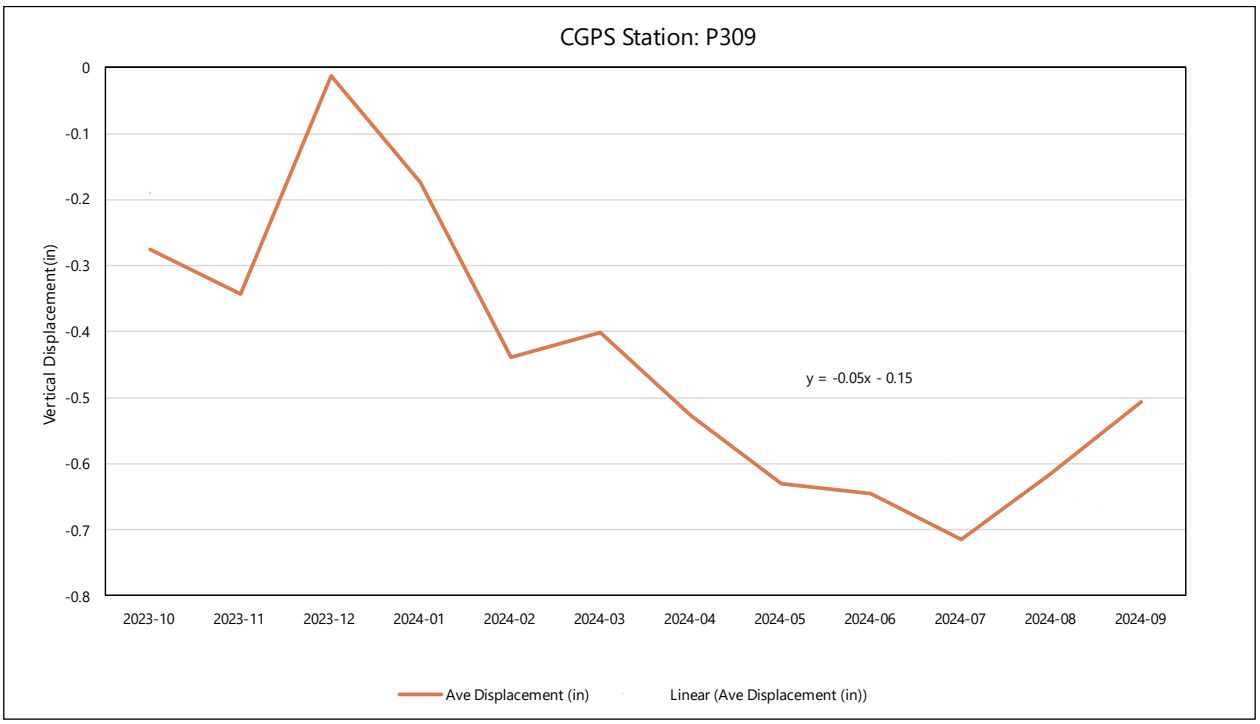


Figure 13. Vertical Displacement at CGPS Station P309 in Water Year 2024

3.7 GROUNDWATER-SURFACE WATER INTERACTION

SGMA considers the impact of groundwater management actions on groundwater-surface water interactions through the depletions of interconnected surface water sustainability indicator. In the Subbasin's 2022 Revised GSP, the depletions of interconnected surface water sustainability indicator used the groundwater level sustainability indicator as a proxy. Minimum thresholds for groundwater levels were considered protective of significant and unreasonable impacts to interconnected surface waters. As part of the 2024 Plan Amendment, multiple new wells are included in a new monitoring network dedicated to this indicator in response to DWR's recommended corrective actions as contained in their 2023 Determination Letter. Monitoring will begin at these wells in WY 2025. Once sufficient data have been collected at these wells, SMC will be developed for the wells in the representative monitoring network and will be reported on in future annual reports. It is also expected that additional guidance will be released by DWR in WY 2025 that will help the GSAs more effectively assess interconnected surface waters in the Subbasin. As such, the timing, location, and volume of depletions reported in the 2024 Plan Amendment are considered to be the best estimate at the time this report was prepared. These estimates will be revised at a later time in coordination with further guidance from DWR.

Based on the ISW SMC set forth in the 2022 Revised GSP, there were no minimum threshold exceedances for groundwater levels; therefore, there were no interconnected surface water impacts to report for WY 2024.

3.8 TOTAL WATER USE

The assessment below relies on information extracted from the ESJWRM. All references to ESJWRM in the section below refer to the Historical ESJWRM Version 3.0 with time series extended through WY 2024, which is the version of ESJWRM updated for this report.

3.8.1 Groundwater Extraction

Groundwater pumping data are available only from a limited number of metered wells within the Eastern San Joaquin Subbasin, with the remainder of extraction information estimated using ESJWRM[3]. Metered data for WY 2024 are available from municipal water purveyors (Cal Water, City of Escalon, City of Lodi, City of Stockton, LCSD, and SEWD). OID and SSJID provided metered data from their district-owned ag wells. Remaining agricultural, private domestic, and other groundwater production in the Subbasin is largely unmetered and were estimated using the ESJWRM, which bases water use on crop type, hydrologic data (precipitation and evapotranspiration), irrigation efficiency, and population information. WY 2024 metered groundwater production data were not available from LCWD, City of Manteca, and City of Ripon and therefore was also estimated using the ESJWRM using the same approach.

Figure 14 shows the general location and volume of groundwater pumping within the Subbasin by ESJWRM element for WY 2024. Large portions of the Subbasin elements experience very little pumping, between 0.0 to 0.5 AF/acre, while areas with agriculture or municipal pumping wells have pumping ranging from 0.5 to approximately 10 AF/acre. Groundwater pumping increased overall between WY 2023 and WY 2024, likely due to the return of drier hydrologic conditions following a very wet winter season during WY 2023.

In WY 2024, total groundwater use in the Eastern San Joaquin Subbasin was estimated at 799,476 AF across water use sectors, as shown in **Table 3**. As the estimated sustainable yield of the Eastern San Joaquin Subbasin is 704,000 AFY ± 10 percent over the long-term, pumping may exceed the sustainable yield during certain years, balanced by other years with reduced pumping so that the long-term average remains at or below the sustainable yield. The groundwater use simulated in ESJWRM over the last 15 years (WY 2010-2024) ranged from a low of about 696,000 AF in WY 2010 (above normal year) to a high of about 916,000 AF in WY

[3] A pilot project was undertaken in SEWD to test use of satellite technology to measure and quantify crop evapotranspiration. These measurements, in combination with known data on surface water deliveries, could provide a more direct measure of groundwater pumping for agricultural irrigation. The approach will be further evaluated and may be used along with modeling to quantify agricultural groundwater extractions in the future.

2015 (critical year), with 5 of the 15 simulated years staying within the range of the sustainable yield due to two droughts occurring during the simulation period..

3.8.2 Surface Water Supply

Surface water delivery data are available from purveyors in the Subbasin and include deliveries for urban and industrial use (City of Lodi; Jenny Lind; City of Manteca; and City of Stockton, including Cal Water and unincorporated portions of San Joaquin County) and deliveries for agricultural use (CCWD, CSJWCD, NSJWCD, OID, SSJID, SEWD, and WID). The remaining surface water use is estimated in the ESJWRM and includes riparian diversions occurring in the CDWA, SDWA, and along major Subbasin rivers. Sources of surface water in the Subbasin include Calaveras River, Mokelumne River, San Joaquin River, and Stanislaus River. Surface water deliveries during WY 2024 are estimated to be 588,112 AF for the Eastern San Joaquin Subbasin (**Table 4**), with most of the surface water used between May and September.

Conjunctive use is the use of surface water in coordination with groundwater to allow the Subbasin to recharge and store additional water supply, either through in-lieu use or direct recharge. In-lieu recharge occurs for both agricultural and municipal purveyors wherever surface water is being delivered to offset groundwater that would have otherwise been used. Agencies conducting in-lieu recharge include Cal Water, CCWD, City of Escalon, City of Lodi, City of Manteca, City of Ripon, City of Stockton, CSJWCD, LCWD, LCSD, NSJWCD, OID, SSJID, SEWD, and WID. While in-lieu recharge was not quantified separately in this report, estimates may be made in future annual reports.

Direct recharge projects exist in NSJWCD and SEWD and recharged over 15,000 AF in WY 2024. These projects use water from the Calaveras River, Mokelumne River, and Stanislaus River and include NSJWCD's Tracy Lake Groundwater Recharge Project; NSJWCD's Cal-Fed/Costa Recharge project; NSJWCD's Reynolds Recharge project; NSJWCD's Tecklenburg, Miller, and Bear Creek/Pixley Slough Recharge projects; and SEWD's Farmington Groundwater Recharge Program.

3.8.3 Total Water Use

Total water use is the sum of the groundwater use and surface water use. Total water use during WY 2024 is estimated to be 1,387,588 AF for the Eastern San Joaquin Subbasin (**Table 5**). Groundwater pumping accounts for almost 58% of total water use in the Subbasin, while surface water deliveries are a little more than 42% of total water use. Due to the above normal year in WY 2024 that followed the wet year in WY 2023, shifts in timing of the irrigation and harvest periods in each of those years likely impacted which water year peak demand periods fell under. As a result, a direct accounting comparison of total water use between WY 2023 and WY 2024 may not be representative of the specific water year hydrologic conditions between those two years. Furthermore, the ESJWRM model version used for analysis in this report (Historical ESJWRM Version 3.0) is different from the model version used in previous annual reports and has slight changes to data in earlier water years which impacts total water use results. Longer-

term comparisons across multiple dry and multiple wet years show a more complete characterization of conditions within the basin.

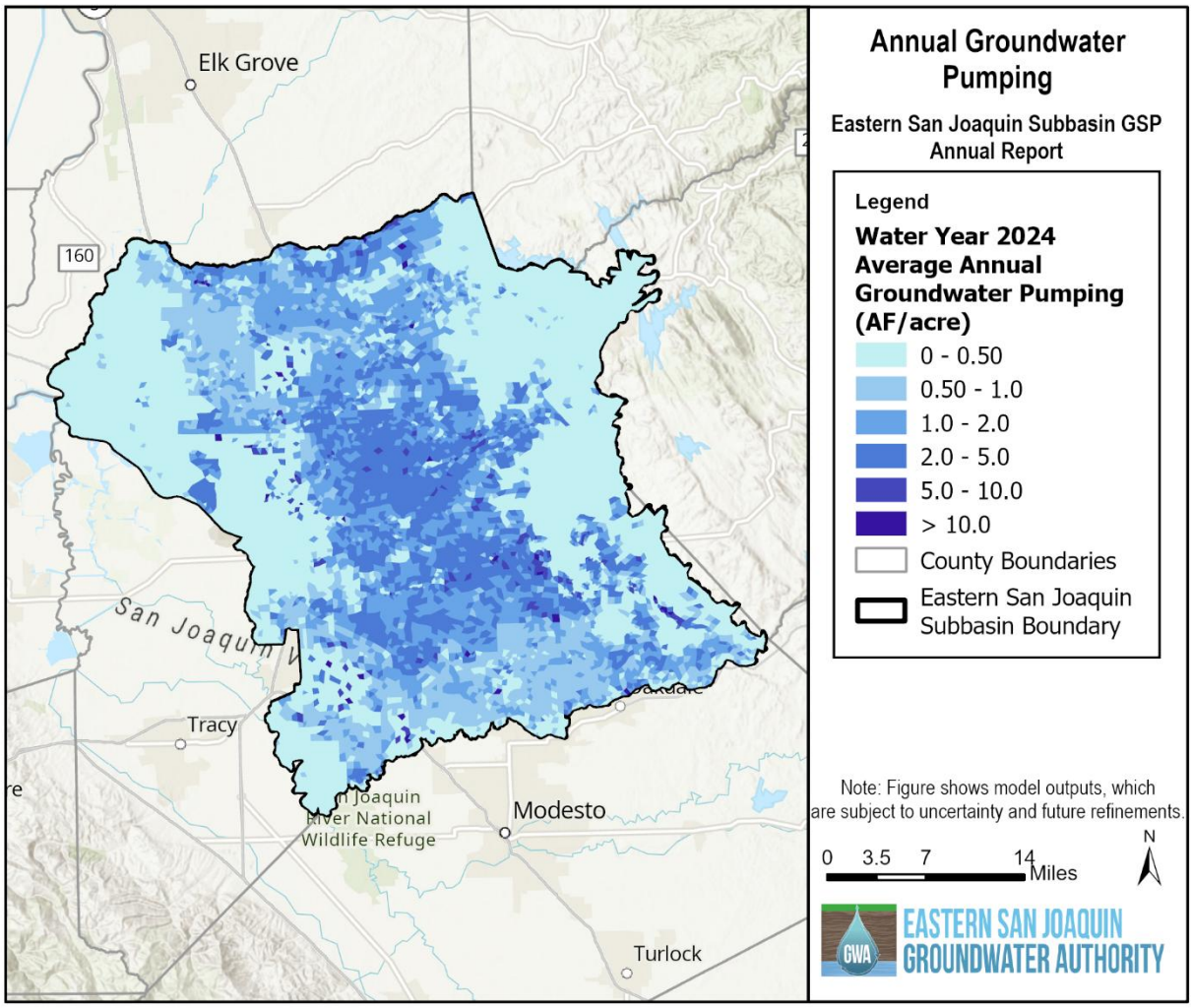


Figure 14. Eastern San Joaquin Subbasin WY 2024 Groundwater Extraction

Table 3. Water Year 2024 Monthly Groundwater Extraction (in acre-feet)[4]

Month	Agricultural		Urban and Industrial		Total
	Agency Reported Values*	***Estimated Agricultural*****	***Agency Reported Values****	***Private Domestic*****	
Oct-23	456	90,400	1,571	2,900	95,327
Nov-23	92	2,900	1,091	2,100	6,183
Dec-23	102	3,100	718	2,200	6,121
Jan-24	121	2,900	565	2,700	6,286
Feb-24	359	18,500	1,096	1,900	21,855
Mar-24	557	12,400	1,466	2,100	16,523
Apr-24	596	81,400	1,107	2,700	85,804
May-24	1,270	104,900	1,444	4,200	111,814
Jun-24	1,420	129,300	1,941	4,600	137,262
Jul-24	1,741	82,900	2,352	5,000	91,993
Aug-24	1,138	120,900	2,452	4,700	129,191
Sep-24	672	84,700	2,246	3,500	91,118
Total	***8,526***	***734,300***	***18,050***	***38,600***	***799,476***
Measurement Accuracy	***High***	***Medium***	***High***	***Medium***	***-***

* Agency reported values for agriculture were collected for some of the agencies (Manteca and OID) that report pumping for either agricultural or landscape use.

** Additional groundwater pumping is estimated by the ESJWRM based on crop type, hydrologic data (precipitation and evapotranspiration), irrigation efficiency, and population information.

[4] Groundwater pumping estimated using ESJWRM assumes an uncertainty of +/- 20%. This uncertainty has been applied only to unmetered data, which have been rounded to indicate uncertainty. Metered data have been directly reported by the Subbasin GSAs.

Table 4. Water Year 2024 Monthly Surface Water Delivered for Use (in acre-feet)

Month	Agricultural		Urban and Industrial		Total
	Agency Reported Values*	***Estimated Riparian****	***Agency Reported Values***	***Estimated in ESJWRM***	
Oct-23	22,020	10,100	7,581	0	39,701
Nov-23	4,241	800	5,515	0	10,556
Dec-23	2,111	300	4,239	0	6,650
Jan-24	2,313	500	2,951	0	5,764
Feb-24	8,282	900	2,886	0	12,068
Mar-24	9,932	2,400	3,775	0	16,108
Apr-24	21,673	9,400	5,317	0	36,391
May-24	40,674	44,000	7,281	0	91,955
Jun-24	50,027	24,800	8,836	0	83,663
Jul-24	56,787	44,800	9,858	0	111,445
Aug-24	52,355	29,500	8,717	0	90,572
Sep-24	44,536	31,100	7,605	0	83,241
Total	***314,951***	***198,600***	***74,562***	***0***	***588,112***
Measurement Accuracy	***High***	***Medium***	***High***	***Medium***	***-***

* Agency reported values reflect deliveries to meet demand, which was based on evapotranspiration and land use.

** Estimated agricultural surface water deliveries include deliveries to Central Delta Water Authority, South Delta Water Authority, and riparian users along major streams.

Table 5. Water Year 2024 Monthly Total Water Use (in acre-feet)

Month	Agricultural						Urban and Industrial						Total
	Direct Measurement			*Estimated in ESJWRM***			*Direct Measurement*			*Estimated in ESJWRM***			
	*Groundwater**	*Surface Water*	*Total*	*Groundwater*	*Surface Water*	*Total*	*Groundwater*	*Surface Water*	*Total*	*Groundwater*	*Surface Water*	*Total*	
Oct-23	456	22,020	22,476	90,400	10,100	100,500	1,571	7,581	9,152	2,900	0	2,900	*135,028*
Nov-23	92	4,241	4,333	2,900	800	3,700	1,091	5,515	6,606	2,100	0	2,100	*16,739*
Dec-23	102	2,111	2,213	3,100	300	3,400	718	4,239	4,957	2,200	0	2,200	*12,770*
Jan-24	121	2,313	2,434	2,900	500	3,400	565	2,951	3,516	2,700	0	2,700	*12,050*
Feb-24	359	8,282	8,641	18,500	900	19,400	1,096	2,886	3,982	1,900	0	1,900	*33,923*
Mar-24	557	9,932	10,489	12,400	2,400	14,800	1,466	3,775	5,241	2,100	0	2,100	*32,630*
Apr-24	596	21,673	22,270	81,400	9,400	90,800	1,107	5,317	6,425	2,700	0	2,700	*122,194*
May-24	1,270	40,674	41,944	104,900	44,000	148,900	1,444	7,281	8,725	4,200	0	4,200	*203,769*
Jun-24	1,420	50,027	51,447	129,300	24,800	154,100	1,941	8,836	10,777	4,600	0	4,600	*220,924*
Jul-24	1,741	56,787	58,528	82,900	44,800	127,700	2,352	9,858	12,211	5,000	0	5,000	*203,438*
Aug-24	1,138	52,355	53,493	120,900	29,500	150,400	2,452	8,717	11,169	4,700	0	4,700	*219,762*
Sep-24	672	44,536	45,208	84,700	31,100	115,800	2,246	7,605	9,851	3,500	0	3,500	*174,359*
Total	***8,526***	***314,951***	***323,476***	***734,300***	***198,600***	***932,900***	***18,050***	***74,562***	***92,612***	***38,600***	***0***	***38,600***	***1,387,588***
Measurement Accuracy	***High***	***High***	***High***	***Medium***	***Medium***	***Medium***	***High***	***High***	***High***	***Medium***	***Medium***	***Medium***	***-***

* Agency reported values for agriculture was collected for some of the agencies (Manteca and OID) that report pumping for either agricultural or landscape use.

** Includes estimated agricultural groundwater use, estimated private domestic groundwater use, and estimated riparian surface water use. See previous tables for further details.

3.8.4 Eastern San Joaquin Water Resources Model Update

The ESJWRM numerical flow model was originally developed and calibrated to model historical groundwater storage from water years 1996-2015. The *Eastern San Joaquin Water Resources Model Final Report* provides detailed documentation on the original development of the Historical ESJWRM Version 1.1 model (Woodard & Curran, 2018). The model has been updated annually to include the recent Water Year data as part of the annual report preparation to reflect more recent data. In 2021, the ESJWRM was updated to Historical ESJWRM Version 2.0 and calibrated for the entire period of record from 1996-2020. Updates to the model are described in *Eastern San Joaquin Water Resources Model Version 2.0 Update* (Woodard & Curran, 2022). In late 2022, the monthly agricultural demand distribution for ESJWRM was updated in select areas of the groundwater subbasin, causing slight changes to water budget numbers, but minimal differences to overall model calibration; this version of ESJWRM is called Historical ESJWRM Version 2.2. In 2024, the Historical ESJWRM Version 3.0 was the result of model updates performed as part of the GSP Amendment and Periodic Evaluation. The version of ESJWRM used for this report was Historical ESJWRM Version 3.0 with the time series extended though WY 2024. Data for WY 2024 were collected from the same public and private sources that had provided the historical data used in the most recent model update. As a result of the model extension, a new historical water budget was generated including updated estimates of change in groundwater storage. The full annual groundwater budget for water years 1996-2024 is shown earlier in **Figure 5**.

Data Sources

Data were requested and received from the following entities in the Subbasin to complete the ESJWRM update through WY 2024.

Agricultural Water Purveyors

- Calaveras County Water District
- Central San Joaquin Water Conservation District
- North San Joaquin Water Conservation District
- Oakdale Irrigation District
- South San Joaquin Irrigation District
- Stockton East Water District
- Woodbridge Irrigation District

Municipal Water Purveyors

- California Water Service Company Stockton District
- City of Escalon
- City of Lodi
- City of Ripon
- City of Stockton

- Lockeford Community Services District
- Stockton East Water District

Data were not received from Linden County Water District or the City of Manteca for the WY 2024 model update. Additional publicly available data were downloaded to complete the ESJWRM update:

State

- California Department of Finance population estimates

Federal

- United States Geological Survey (USGS) stream flows[5]
- United States Army Corps of Engineers reservoir releases[6]

Other

- Precipitation-Elevation Regressions on Independent Slopes Model (PRISM) Climate Group, Oregon State University

Updated Components

The above data sources provided the necessary data to allow the historical model to reflect recent conditions. The following components of the model were updated:

Surface Water Diversions and Deliveries: Monthly surface water diversions and deliveries were provided for October 1, 2023 through September 30, 2024 for urban and industrial use and agricultural use as described in Section 3.8.2. Remaining riparian diversions occurring in CDWA, SDWA, and along major rivers were estimated based on agricultural demands estimated in ESJWRM.

Groundwater Pumping: Groundwater extraction data from October 1, 2023 through September 30, 2024 were provided by most municipal water purveyors as described in Section 3.8.1. Pumping estimates were made in ESJWRM based on land use type and population, and for private agriculture wells, domestic wells, and municipal wells from water purveyors that did not have metered extraction.

Population: California Department of Finance estimates (E-4 Population Estimates for Cities, Counties, and the State, 2021-2024, with 2020 Benchmark) were downloaded to update annual populations for 2024 (State of California, 2024). Rural populations in Historical ESJWRM Version 3.0 were updated to rely on Census Tract data, which allowed ESJWRM to more accurately

[5] New Melones Reservoir flows are monitored at a USGS gauge downstream on the Stanislaus River below Goodwin Dam near Knights Ferry, CA.
[6] Reservoir release for New Hogan Reservoir on the Calaveras River.

pinpoint where urban demand was occurring within the model. These populations were extended through WY 2024 using a consistent growth rate based on recent historical data.

Land Use: Each element within the ESJWRM is comprised of some fraction of 27 land uses, including 23 agricultural crop categories, native vegetation, water surface, riparian vegetation, and urban landscape. For WY 2024, the model utilizes data from DWR's 2022 Statewide Crop Mapping which provides data on urban and irrigated land throughout the model domain on a parcel scale (DWR, 2022).The 2023 Statewide Crop Mapping was released on a provisional status in late January 2025, but it was not possible to incorporate these data into the model during this report cycle.

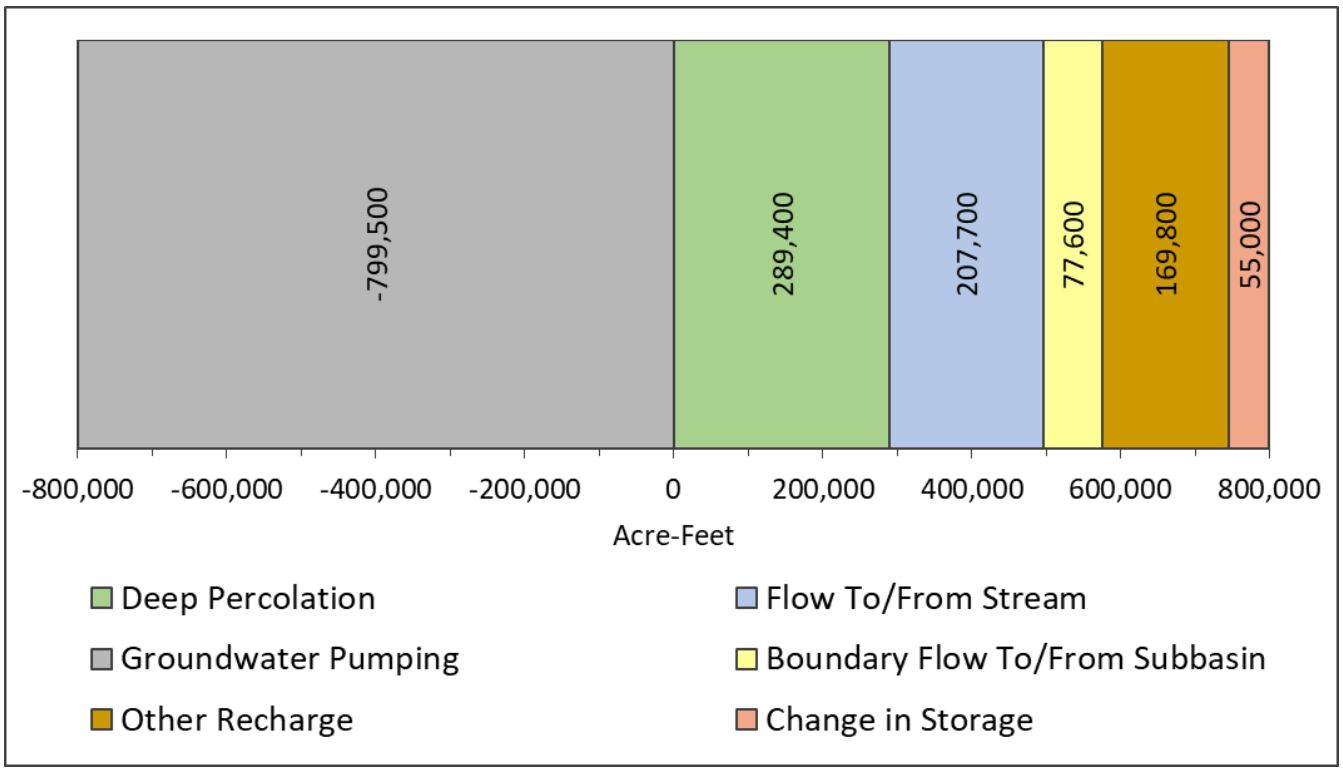
Precipitation: Rainfall data for the model area are derived from the PRISM (Precipitation-Elevation Regressions on Independent Slopes Model) database used in DWR's CALSIMETAW (California Simulation of Evapotranspiration of Applied Water) model. The database contains daily precipitation data from October 1, 1921, on a four-kilometer grid throughout the model area. ESJWRM has monthly rainfall data defined for every model element in order to preserve the spatial distribution of the monthly rainfall. Each of the model elements was mapped to the nearest of 364 available PRISM reference nodes, uniformly distributed across the model domain. The PRISM dataset is available online from Oregon State University through a partnership with the NRCS National Water and Climate Center (Oregon State University, 2024).

Streamflow: Monthly inflow to the Eastern San Joaquin Subbasin was updated for Dry Creek, Mokelumne River, Calaveras River, Stanislaus River, and San Joaquin River. Sources of data included USGS (USGS, 2024) and United States Army Corps of Engineers (US Army Corps of Engineers, 2024). Non-gauged tributaries into the Subbasin were estimated internally by the model using the Integrated Water Flow Model (IWFM) small-watershed package.

Boundary Conditions: Averages of historical model data by water year type were used to update the assumed groundwater elevation boundary conditions in the model.

Results:

Evaluation of WY 2024 (**Figure 15**) shows that the Eastern San Joaquin Subbasin experienced, on an average and net basis, 744,500 AF of inflows and 799,500 AF of outflow, leading to an annual decrease of groundwater in storage of 55,000 AF. Deep percolation from the root zone is the largest contributor of groundwater inflow (289,400 AFY), followed by recharge from streams (207,700 AFY); recharge from managed aquifer projects, unlined canals or reservoirs, and ungauged watersheds (169,800 AFY); and boundary flows from surrounding groundwater subbasins (77,600 AFY). Groundwater production (799,500 AFY) accounts for the greatest outflow from the Eastern San Joaquin Subbasin. **Table 6** compares these values against those from WY 2023. Note that the values listed in the WY 2023 annual report are different from those in the table below; this is because the values listed in the WY 2023 Annual Report used the ESJWRM Version 2.2 model whereas the values reported here used the Historical ESJWRM Version 3.0.



Notes:

1. "Other Recharge" includes managed aquifer recharge, recharge from unlined canals and/or reservoirs, and recharge from ungauged watersheds.
2. "Change in Storage" is placed to balance the water budget. For instance, if annual outflows (-) are greater than inflows (+), there is a decrease in storage, but this would be shown on the positive side of the bar chart to balance out the increased outflows on the negative side of the bar chart.

Figure 15. WY 2024 Average Annual Estimated Groundwater Budget, Eastern San Joaquin Subbasin

Table 6. Comparison of WY 2023 and WY 2024 Water Budget (in acre-feet)

Water Budget Element	WY 2023	WY 2024
Water Year Type	Wet	Above Normal
Deep Percolation	303,200	289,400
Other Recharge	216,500	169,800
Flow to/from Stream	301,700	207,700
Boundary Flow to/from Subbasin	87,000	77,600
Groundwater Pumping	-850,500	-799,500
Change in Storage	-57,900	55,000

Note: a negative Change in Storage value reflects an increase in the amount of water added to the Subbasin.

4. PROGRESS TOWARD IMPLEMENTATION

Throughout the GSP development process, measurable objectives, interim milestones, and minimum thresholds for applicable sustainability indicators, as well as projects and management actions, were identified to aid in maintaining sustainable conditions throughout the Subbasin. Implementation progress of projects, management actions, and adaptive management activities are detailed in **Appendix A**.

As part of the 2024 Plan Amendment, there were updates to the SMC in response to the recommended corrective actions contained in DWR's 2023 Determination Letter, and two new wells were added to the representative monitoring network for groundwater levels, and ten new wells were added to the representative monitoring network for groundwater quality. In the 2022 Revised GSP, groundwater levels were used as a proxy for reduction in groundwater storage, land subsidence, and depletion of interconnected surface water. In the 2024 Plan Amendment, monitoring networks and SMC were established for land subsidence and depletions of interconnected surface water. The 2024 Plan Amendment no longer considers the seawater intrusion indicator to be relevant in the Eastern San Joaquin Subbasin, but chloride monitoring is added to the degradation of water quality indicator in order to catch any early indications that saline water is intruding into the Subbasin. The updated ESJWRM Version 3.0 model was used to quantify recent changes in groundwater storage to reflect WY 2016 to 2024 for this Annual Report, as described in Section 3.3. During WY 2024, conditions relative to all thresholds for all applicable sustainability indicators were considered sustainable.

It should be noted that since early 2020, GSP implementation has been affected by the coronavirus pandemic (COVID-19) as GSA employees were encouraged to work from home and avoid public gatherings to prevent the spread of the virus. Pandemic restrictions may have also delayed implementation progress of projects, management actions, and adaptive management activities between 2020-2022. However, progress in WY 2023 and WY 2024 showed many agencies are back on track toward project implementation, as described in **Appendix A**.

4.1 CURRENT CONDITIONS FOR EACH SUSTAINABILITY INDICATOR

4.1.1 Groundwater Levels

An analysis was performed to determine conditions relative to established thresholds (including interim milestones for 2025, measurable objectives, and minimum thresholds) during WY 2024 for the chronic lowering of groundwater levels sustainability indicator (**Table 7**). All representative monitoring network wells, except Manteca 18, 02N08E15M002, and 03N07E21L003, were monitored in WY 2024 at least once. Attempts were made to monitor four wells (02S08E08A001, 02N07E29B001, 02N07E03D001, and 04N05E36H003) in Fall 2023, but they were deemed temporarily inaccessible. Two of those wells became accessible by Spring 2024. Groundwater levels at these wells will be reported in future annual reports. Two new wells were added to the groundwater level representative monitoring network as part of the 2024

Plan Amendment, NSJWCD-01 and SEWD-01. Monitoring began at NSJWCD-01 in June 2023. Monitoring is planned to begin at SEWD-01 in WY 2025. These two new wells did not have sufficient historical data in order to develop SMC as part of the 2024 Plan Amendment. Groundwater levels for these wells will be reported in annual reports going forward until a future GSP establishes SMC for them and a full SMC comparison analysis can be prepared.

Of the 21 representative monitoring network wells included in the 2022 Revised GSP and maintained in the 2024 Amended GSP, water levels fluctuated around the measurable objective for multiple representative wells, remaining an average of approximately four feet below the measurable objectives in Fall 2023, and two feet above the measurable objectives in Spring 2024. Five representative wells (Lodi City Well #2, Swenson-3, 02S07E31N001, 03N06E05N003, and 04N05E24J004) reported Fall 2023 levels that were above the measurable objective. Water levels remained an average of 26.7 feet and 32.5 feet above the minimum threshold for all representative wells with reported data in Fall 2023 and Spring 2024, respectively. One well (01S09E05H002) reported groundwater levels below the minimum threshold by less than one foot. As 25% of the representative wells did not exceed their minimum threshold for two consecutive years, no undesirable results were experienced as specified by the sustainable management criteria set in the 2024 Amended GSP. The two new wells added as part of the 2024 Amended GSP will be evaluated in future annual reports once SMC are established.

As defined in the 2022 Revised GSP, interim milestones are established as the current condition for the first 10 years and then follow a linear trend between the current condition and the measurable objective. Of wells that were sampled, groundwater level measurements in Fall 2023 (seasonal low) were approximately four feet below their 2025 interim milestones on average. Eight wells were below their respective interim milestones, and five wells exceeded it. Hydrographs with historical data at each of the 23 representative monitoring network wells are included in **Appendix B**.

Table 7. Chronic Lowering of Groundwater Levels Threshold Analysis

Well ID	CASGEM ID	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	Fall 2023 (Seasonal Low)	Difference between Fall 2023 (ft msl)			Spring 2024 (Seasonal High)	Difference between Spring 2024 (ft msl)		
		(ft msl)	(ft msl)	(ft msl)	(ft msl)	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	(ft msl)	Interim Milestone (2025)	Measurable Objective	Minimum Threshold
01S09E05H002	378824N1210000W001	-8.7	-8.6	-49.8	-50.65	-41.95	-42.05	-0.85	-20.7	-12.0	-12.1	29.2
01N07E14J002	379316N1211665W001	-49.9	-49.9	-93.9	-52.41	-2.51	-2.51	41.49	-46.4	3.5	3.5	47.5
Lodi City Well #2	Not Part of CASGEM Program	0.6	0.6	-34.4	2.94	2.34	2.34	37.34	2.94	2.3	2.3	37.3
Manteca 18	Not Part of CASGEM Program	9.1	2.8	-19	*	--	--	--	*	--	--	--
Swenson-3	380067N1213458W003	-19.3	-19.3	-26.6	-11.2	8.1	8.1	15.4	-10	9.3	9.3	16.6
01S10E26J001M	378163N1208321W001	81.7	81.7	43.7	75.5	-6.2	-6.2	31.8	78.6	-3.1	-3.1	34.9
02N08E15M002	380206N1210943W001	-63.2	-63.2	-124.1	*	--	--	--	*	--	--	--
#3 Bear Creek	Not Part of CASGEM Program	-49.3	-51.8	-73.8	-61.3	-12	-9.5	12.5	-54.3	-5.0	-2.5	19.5
04N07E20H003M	381843N1212261W001	-35.5	-35.5	-80.5	-38.49	-2.99	-2.99	42.01	-30.3	5.2	5.2	50.2
03N07E21L003	380909N1212153W001	-51.5	-51.5	-94	*	--	--	--	*	--	--	--
Hirschfeld (OID-8)	Not Part of CASGEM Program	31.5	31.5	7.9	26.5	-4.96	-4.96	18.64	29.3	-2.2	-2.2	21.4
Burnett (OID-4)	377909N1208675W001	79.7	79.7	60.8	74.1	-5.56	-5.56	13.34	75.6	-4.1	-4.1	14.8
02S07E31N001	377136N1212508W001	13.8	12.3	0.8	18.4	4.56	6.06	17.56	18.4	4.6	6.1	17.6
02S08E08A001	377810N1211142W001	22.2	24	0.6	**	--	--	--	**	--	--	--
02N07E03D001	380578N1212017W001	-61.7	-61.7	-113.7	**	--	--	--	-51.23	10.5	10.5	62.5
01N09E05J001	379661N1210011W001	-20.2	-22.6	-86.8	-39.19	-18.99	-16.59	47.61	-32.49	-12.3	-9.9	54.3
02N07E29B001	379976N1212308W001	-49.8	-80.4	-130.1	**	--	--	--	**	--	--	--
04N05E36H003	381559N1213727W001	-5.1	-5.1	-31.1	**	--	--	--	6.2	11.3	11.3	37.3
03N06E05N003	381317N1213524W001	-14.1	-14.1	-35.1	-3.07	11.03	11.03	32.03	-0.6	13.5	13.5	34.5
04N05E24J004	381816N1213723W001	-6.2	-6.2	-31.2	7.3	13.5	13.5	38.5	8.4	14.6	14.6	39.6
01S10E04C001M	378846N1208816W001	--	76.4	54.7	55.6	--	-20.83	0.87	57.8	--	-18.6	3.1
New Wells Added as Part of 2024 Plan Amendment												
NSJWCD-01	382345N1212261W001 - 06	TBD	TBD	TBD	-38.4	--	--	--	-32.1	--	--	--
SEWD-01	379794N1211083W001 - 05	TBD	TBD	TBD	*	--	--	--	*	--	--	--

* Groundwater level data for WY 2024 unavailable.

** Well temporarily inaccessible. No measurement was taken.

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4.1.2 Groundwater Storage

The 2022 Revised GSP and the 2024 Amended GSP use groundwater level minimum thresholds, measurable objectives, and interim milestones as a proxy for the reduction in groundwater storage sustainability indicator. An analysis to determine conditions relative to established thresholds (including interim milestones for 2025, measurable objectives, and minimum thresholds) during WY 2024 for the chronic lowering of groundwater levels sustainability indicator is described in Section 3.2. The ESJWRM was updated to estimate the changes in groundwater storage during WY 2024, as described in Section 3.3.

4.1.3 Groundwater Quality

As indicated earlier in this report, chloride was added to the representative monitoring network for degraded water quality. Given this report was developed based on WY 2024, during which the 2022 Revised GSP applied, the following comparison to SMC is focused on the original 10 representative network wells, not the new ones added as part of the 2024 Plan Amendment.

An analysis was performed to determine conditions relative to established sustainable management criteria (including interim milestones for 2025, measurable objectives, and minimum thresholds) during WY 2024 for the degraded water quality sustainability indicator (**Table 8**). During WY 2024, TDS was sampled at least once at Flag City Wells 1 and 2, Manteca wells 16 and 17, and Stockton wells 27, SSS8, 31, and 10R. TDS was not sampled at Stockton 26. Stockton 26 was decommissioned during the previous reporting period and has been replaced by neighboring wells 27 and 31 in the City of Stockton. No wells that were sampled in WY 2024 exceeded their minimum thresholds for TDS. Fall 2024 (WY 2025) monitoring is also included in **Table 8** in order to indicate the GSAs commitment to monitoring the new network of 20 wells committed to in the 2024 Plan Amendment.

As defined in the 2022 Revised GSP, interim milestones are established following a linear trend between current conditions and the measurable objectives. Most wells sampled in WY 2024 have TDS concentrations lower than their established interim milestones.

The same monitoring network is also used for monitoring for chloride, formerly under the seawater intrusion indicator (**Table 9**). During WY 2024, chloride was sampled at least once at Flag City Well 1, Manteca wells 16 and 17, and Stockton wells 27, SSS8, 31, and 10R. Chloride was also not sampled at Stockton 26 for the same reason mentioned previously. No wells that were sampled in WY 2024 exceeded their minimum thresholds for chloride and most wells had chloride concentrations below their interim milestones. Fall 2024 (WY 2025) monitoring is also included in **Table 9** in order to indicate the GSAs commitment to monitoring the new network of 20 wells committed to in the 2024 Plan Amendment.

Table 8. Degraded Water Quality Threshold Analysis: Total Dissolved Solids

Well ID	CASGEM ID	GAMA Well ID	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	Fall 2023 (Seasonal Low)	Spring 2024 (Seasonal High)	Fall 2024 (WY 2025 Seasonal Low)
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Well 1	381154N1213818W001	CA3901248_001_001	484	600	1000	*	490	440
Well 2	381131N1213920W001	CA3901248_002_002	576	600	1000	*	*	590
Well 3	381130N1213887W001		540	600	1000	*	*	***
119-075-01	01N/07E-18D01M	CA3910001_063_063	420	600	1000	**	**	**
Well 15 (A, B)	378089N1212325W001	CA3910005_015_015	383	600	1000	*	*	320, 310
Well 16 (A, B, C)	377904N1212476W001	CA3910005_016_016	338	600	1000	*	250	260, 250, 270
Well 17 (A, B)	378059N1211878W001	CA3910005_028_028	379	600	1000	*	320	380, 390
Stockton 27			199	600	1000	210	*	190
Stockton SSS8	379146N1212401W001	CA3910012_089_089	398	600	1000	330	330	340
Stockton 31		CA3910012_094_094	376	600	1000	370	*	380
Stockton 10R	380292N1212843W001	CA3910012_100_100	443	600	1000	*	340	380
New Wells Added as Part of 2024 Plan Amendment								
Well No. 05		CA3910008_005_005	320	600	1000	*	*	230
Well No. 07		CA3910019_007_007	280	600	1000	*	180	180
Well #2		CA3900755_002_002	392	600	1000	*	*	***
WELL NO. 11		CA3910007_012_012	608	600	1000	*	*	***
WELL NO. 16		CA3910007_026_026	585	600	1000	*	*	***
Swenson-3	380067N1213458W003		TBD	600	1000	*	*	410
Lodi City Well #2		CA3910004_003_003	293	600	1000	220	210	***
Hirschfeld (OID-8)			300	600	1000	*	*	200
CCWD 010, 011, 012			TBD	600	1000	210, 230, 340	*	210, 230, 340

* Groundwater quality data unavailable.

** Well is temporarily offline due to pump and motor maintenance. Expected to be back online by end of WY 2025.

*** Attempt was made to sample well, but it was unsuccessful due to property access issues or inability to contact authorizing agency.

Table 9. Degraded Water Quality Threshold Analysis: Chloride

Well ID	CASGEM ID	GAMA Well ID	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	Fall 2023 (Seasonal Low)	Spring 2024 (Seasonal High)	Fall 2024 (WY 2025 Seasonal Low)
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Well 1	381154N1213818W001	CA3901248_001_001	35	36	250	*	35	36
Well 2	381131N1213920W001	CA3901248_002_002	73	73	250	*	*	74
Well 3	381130N1213887W001		35	36	250	*	*	***
119-075-01	01N/07E-18D01M	CA3910001_063_063	27	30	250	**	**	**
Well 15	378089N1212325W001	CA3910005_015_015	16	17	250	*	*	18, 18
Well 16	377904N1212476W001	CA3910005_016_016	14	16	250	*	13	14, 13, 13
Well 17	378059N1211878W001	CA3910005_028_028	16	17	250	*	24	28, 28
Stockton 27			14	26	250	8.4	*	9
Stockton SSS8	379146N1212401W001	CA3910012_089_089	39	41	250	35	32	35
Stockton 31		CA3910012_094_094	33	51	250	25	*	27
Stockton 10R	380292N1212843W001	CA3910012_100_100	19	20	250	*	19	20
New Wells Added as Part of 2024 Plan Amendment								
Well No. 05		CA3910008_005_005	15	17	250	*	*	14
Well No. 07		CA3910019_007_007	4	3.8	250	*	3.4	3
Well #2		CA3900755_002_002	20	33	250	*	*	***
WELL NO. 11		CA3910007_012_012	77	83	250	*	*	***
WELL NO. 16		CA3910007_026_026	77	83	250	*	*	***
Swenson-3	380067N1213458W003		100	100	250	*	*	61
Lodi City Well #2		CA3910004_003_003	6	6.2	250	*	*	***
Hirschfeld (OID-8)			12	12	250	*	*	12
CCWD 010, 011, 012			TBD	TBD	250	16, 16, 48	*	16, 16, 48

* Groundwater quality data unavailable.

** Well is temporarily offline due to pump and motor maintenance. Expected to be back online by end of WY 2025.

*** Attempt was made to sample well, but it was unsuccessful due to property access issues or inability to contact authorizing agency.

4.1.4 Saltwater Migration

In the 2024 GSP Amendment, the Subbasin GSAs removed seawater intrusion as an applicable sustainability indicator and added chloride monitoring and SMC to the degradation of groundwater quality sustainability indicator as a constituent of concern. Discussion of progress toward implementation of chloride monitoring is included in the previous section.

4.1.5 Land Subsidence

The 2022 Revised GSP used groundwater level minimum thresholds, measurable objectives, and interim milestones as a proxy for the land subsidence sustainability indicator. An analysis to determine conditions relative to established thresholds (including interim milestones for 2025, measurable objectives, and minimum thresholds) during WY 2024 for the chronic lowering of groundwater levels sustainability indicator is described in Section 4.1.1.

In the 2024 Plan Amendment, a new representative monitoring network and SMC were developed for subsidence. This new network is comprised of four Continuous GPS stations and six survey benchmarks (**Table 10**). Measurement of the survey benchmarks will begin in WY 2025 and will be reported in future annual reports. Data from two of the CGPS stations were collected within WY 2024. **Table 10** includes an average vertical displacement over the most recent 5-year period, where data are available. No subsidence monitoring network location (at which data were collected) exceeded its minimum threshold, and all locations remained below their 2025 interim milestone.

Table 10. Subsidence Threshold Analysis

Location ID	Type	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	Average Vertical Displacement Over Most Recent 5-year Period
		(ft/yr)	(ft/yr)	(ft)	(ft)
CA1S	CGPS	-0.1	0	0.2 ft/year in any 5-year period	0.02*
CMNC	CGPS	-0.1	0	0.2 ft/year in any 5-year period	0.0005**
MTWK	CGPS	-0.1	0	0.2 ft/year in any 5-year period	0.03
P309	CGPS	-0.1	0	0.2 ft/year in any 5-year period	0.05
Q-833	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	Surveys to begin in WY 2025.
J-956	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	
G-965	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	
M-20	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	
O-29.6	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	
J-957	Survey Benchmark	-0.1	0	0.2 ft/year in any 5-year period	

* This represents a 3-year average between 2021-2023. Data prior to 2021 and after 2023 is not available.

** This represents a 2-year average of 2019 and 2023. Data prior to 2019, between 2020-2022, and after 2023 is not available.

4.1.6 Groundwater-Surface Water Interaction

The 2022 Revised GSP used groundwater level minimum thresholds, measurable objectives, and interim milestones as a proxy for the depletions of interconnected surface water sustainability indicator. An analysis to determine conditions relative to established thresholds (including interim milestones for 2025, measurable objectives, and minimum thresholds) during WY 2024 for the chronic lowering of groundwater levels sustainability indicator is described in Section 4.1.1.

In the 2024 Plan Amendment, a new representative monitoring network and SMC were developed for depletions of interconnected surface water. This new network is comprised of six wells from the representative network for groundwater levels and six new recently constructed wells (**Table 11**). SMC have not yet been developed at the new wells due to the lack of historical data. Monitoring of the new wells will begin in WY 2025 and will be reported on in future annual reports. For the wells that overlap with the groundwater level network, the same SMC will be used temporarily until further guidance from DWR is provided. **Table 11** includes a seasonal low (Fall 2023) and a seasonal high (Spring 2024) groundwater level measurement taken in WY 2024. All wells were measured at least once except for 02S08E08A001, because the well was temporarily inaccessible. No interconnected surface water representative well location exceeded its minimum threshold.

Table 11. Depletions of Interconnected Surface Water Threshold Analysis

Well ID	CASGEM ID	Interim Milestone (2025)	Measurable Objective	Minimum Threshold	Fall 2023 (Seasonal Low)	Spring 2024 (Seasonal High)
		(ft msl)	(ft msl)	(ft msl)	(ft msl)	(ft msl)
Well A		New wells – Monitoring to begin in WY 2025. SMC to be developed once sufficient data is collected.				
Well B						
Well C						
Well E						
Well G						
Delta Well						
04N05E36H003	381559N1213727W001	-5.1	-5.1	-31.1	**	6.23
Swenson-3	380067N1213458W003	-19.3	-19.3	-26.6	-11.2	-10
Frankenheimer (01S10E26J001M)	378163N1208321W001	81.7	81.7	43.7	75.5	78.64
Burnett (OID-4)	377909N1208675W001	79.7	79.7	60.8	74.14	75.56
02S07E31N001	377136N1212508W001	13.8	12.3	0.8	18.36	18.36
02S08E08A001	377810N1211142W001	22.2	24	0.6	**	**

** Well temporarily inaccessible. No measurement was taken.

4.2 PROJECTS AND MANAGEMENT ACTIONS

Progress on each of the projects and management actions identified in the 2020 GSP, 2022 Revised GSP, and the 2024 Plan Amendment is included in **Appendix A**. Details regarding what types of projects and management actions the subbasin has taken steps to implement, as well as how these have been incorporated into ESJWRM, are included in Section 2.2.7.

Following delays during WY 2020 and 2021 as a result of COVID-19, more progress was made on project development and implementation in WY 2023 and WY 2024.

A call for projects was completed as part of the 2024 Plan Amendment development during WY 2024. As a result, three Category A and 11 Category B projects were added to the master list. The 2024 GSP Amendment now includes 45 projects. It is the priority of the ESJGWA to implement projects that increase supply in order to reach sustainable conditions. However, a demand management program is currently in development by the ESJGWA to be used as a backstop if there are delays in project implementation or if the expected benefits are not realized by 2040.

Since completion and submittal of the 2022 Revised GSP, the following projects and management actions have been added to the master list of PMAs:

- South Stockton Well Rehabilitation Program (City of Stockton)
- City of Stockton Phase 1: Groundwater Recharge Project (City of Stockton)
- Mokelumne River Loss Study (North San Joaquin Water Conservation District)
- Wallace-Burson Conjunctive Use Program (Calaveras County Water District)
- Calaveras River Wholesale Water Service Expansion (Calaveras County Water District)
- AMI Replacement and Conversion (Calaveras County Water District)
- Groundwater Monitoring Plan (North San Joaquin Water Conservation District)
- Recycled Water to Manteca Golf Course (City of Manteca)
- West Groundwater Recharge Basin (Stockton East Water District)
- Threfall Ranch Reservoir, In-Lieu and Direct Recharge Project (Stanislaus County SMWC)
- NSJWCD Private Pump Partnerships (North San Joaquin Water Conservation District)
- Advanced Metering Infrastructure (City of Stockton)
- Perfecting Mokelumne River Water Right (San Joaquin County)
- North System Groundwater Recharge Project – Phase 2 (North San Joaquin Water Conservation District)
- Stormwater Collection, Treatment, and Infiltration (City of Manteca)
- Off-Stream Regulating Reservoir (Stockton East Water District)

- On-Farm Recharge Project (Stockton East Water District)
- Bellota Weir Modifications Project (Stockton East Water District)
- West Linden Project (Stockton East Water District)
- Water Supply Enhancement Project - Direct Recharge (Stockton East Water District)
- Water Supply Enhancement Project - Distribution Pipelines (Stockton East Water District)
- Oakdale Irrigation District In-lieu and Direct Recharge Project (Oakdale Irrigation District)
- Water Treatment Plant Aquifer Storage Recovery Well – 7401 (Stockton East Water District)
- Beckman Well (Stockton East Water District)
- Tom Allen Recharge Project (Stockton East Water District)

During the September 11, 2024 ESJGWA Board Meeting, the Board approved by resolution the addition of five projects to the 2024 GSP Amendment. These projects are in the very early phases of planning. Further details on these projects, including their schedules and status descriptions, will be included in future annual reports. These projects include:

- Mariposa Drain Water Delivery Improvement Project (Central San Joaquin Water Conservation District)
- South System Pipeline Phase 4 Improvement Project (North San Joaquin Water Conservation District)
- Q/Qc Conjunctive Use Project (South San Joaquin Water District)
- SSJID Advanced Metering Infrastructure Project (South San Joaquin Water District)
- Clements Road Pipeline Project (Stockton East Water District) – One of six subprojects within SEWD's Water Supply Enhancement Project

All projects and management actions listed in **Appendix A** are expected to be completed during the period as denoted in the column "Schedule (initiation and completion)." One project was removed from the list of PMAs: the Recycled Water Transfer to Agriculture Project, a Category B project sponsored by the City of Manteca. This project would have transferred recycled water produced by the City to nearby agricultural fields for irrigation. The project was removed as the City was able to determine that it had sufficient demands for the recycled water within the City's jurisdictional boundaries. Additionally, the City of Stockon DWTP Groundwater Recharge – Design and Construction project was integrated into the City of Stockton Phase 1: Groundwater Recharge Project since they were originally listed as two phases of the same project. All remaining projects listed in **Appendix A** are considered to still be relevant and feasible. The

"Status" column of **Appendix A** describes progress made toward implementation during WY 2024 as well as any challenges that have prevented or delayed implementation of the respective PMA. The quantified benefit of each project as of June 2024 is noted in **Appendix A** in the column entitled "Benefits Observed to Date or Anticipated Benefits;" and the range of anticipated benefits once each project is constructed and fully operational (hydrology and water accessibility permitting) is shown in the column entitled "Range of Estimated Accrued Benefits at Completion (acre-feet per year [AFY] based on WY Type)".

For all the listed PMAs, the GSAs have taken several steps to notify the public and interested parties, including:

- Public Outreach: Posting up-to-date information on websites and social media platforms, improving website accessibility and outreach materials, providing flyers and display tables available at various celebrations and workshops, establishing communication and outreach committees, and conducting project-specific outreach events.
- Newsletters: Sending bi-annual newsletters to landowners that highlight water conditions, project updates, and Sustainable Groundwater Management Act (SGMA) efforts.
- Presentations: Conducting regular presentations at Board, Committee, interest group, and community forum meetings.
- Public Comment Periods: Noticing public comment periods when environmental impact reports are posted.
- Site Visits: Conducting site visits at project sites for interested parties.

In the 2024 Amended GSP, a new management action is being added to the GSP to formalize the development of a Demand Management Program that can be used as a backstop, if necessary, to ensure the recovery of the principal aquifer if the Subbasin falls short on project implementation and groundwater offset targets. It is still the overall theme and goal of the ESJ GSP to first implement PMAs to manage overdraft and reach basin sustainability. However, this management action is intended to respond to direction provided by DWR and to outline the demand side action that would be taken if supply side actions are not effective in meeting overall basin sustainability goals.

Additionally, a new Dry Domestic Well Mitigation Program was approved by the GWA Board in September 2024. This program provides emergency, interim and financial mitigation for domestic water supply wells that have been determined to have failed due to groundwater overdraft conditions occurring since January 1, 2015.

4.3 PROGRESS MADE ON ADDRESSING RECOMMENDED CORRECTIVE ACTIONS

Recommended corrective actions were included by DWR in their July 6, 2023 *Approved Determination of the Revised Groundwater Sustainability Plan Submitted for the San Joaquin*

Valley – Eastern San Joaquin Subbasin. DWR's Determination Letter included eight (8) Recommended Corrective Actions; these are summarized as follows:

- Corrective Action 1 - Justify GWL MT and Undesirable Results
- Corrective Action 2 – Subsidence SMC justification using direct subsidence monitoring data
- Corrective Action 3 - Updated Water Budgets using Recalibrated Model
- Corrective Action 4 – Revised estimate for reduction of groundwater storage volume undesirable definition
- Corrective Action 5 - Additional justification for 2,000 mg/L chloride isocontour line
- Corrective Action 6 - Revised ISW SMC, monitoring network and metrics
- Corrective Action 7 – Improved RMN for GWQ
- Corrective Action 8 - Development of chloride isocontour line in western portion of Subbasin

These recommended corrective actions were addressed in the 2024 Plan Amendment. Technical Memoranda summarizing in detail the work completed to address these actions are included as Appendices 3-C through 3-G in the 2024 Plan Amendment Appendices. Some of these corrective actions (such as Corrective Actions 1 and 5) required additional analyses or documentation to justify or defend the analyses, results or parameters contained in the 2022 Revised GSP. Other corrective actions (such as Corrective Action 2, 6 and 7) required revisions to the GSP, including some of the SMC and representative monitoring networks. Finally, other corrective actions (such as Corrective Action 8) required new analyses. Any changes to the GSP that are relevant to this annual report are summarized in Section 2.2 and incorporated, where necessary, into the rest of discussion in this report.

The 2024 Plan Amendment and the 2025 Periodic Evaluation were submitted to DWR on January 28, 2025. Both documents opened for DWR's public comment period on February 4, 2025 and will close on April 20, 2025.

4.4 PUBLIC OUTREACH

Preparation of the 2025 Periodic Evaluation and resultant 2024 Plan Amendment included an important stakeholder component to ensure public engagement with the GSP process. The 2024 Eastern San Joaquin Subbasin Communication and Engagement Plan Update (C&E Plan) was published in December 2024 and included as Appendix 1-H in the 2024 Plan Amendment Appendices. Work for this effort was funded under DWR's Facilitation Support Services (FSS).

This updated C&E Plan is an evolution of the outreach effort completed as part of the development of the 2020 GSP. The development process started with a review of previously

established commitments made by Subbasin GSAs and the ESJGWA in various SGMA-related documents and input on the needs and ideas presented by interested parties. Seven individual or small group interviews were conducted between March and July of 2023 with key interested parties in the Subbasin to gather feedback on communication and engagement strategies taken during GSP implementation. Interviewees represented diverse interests, including disadvantaged communities, municipal and industrial, agricultural, domestic well, and those representing environmental water users.

Throughout WY 2024 as the C&E Plan, the 2024 Plan Amendment, and the 2025 Periodic Evaluation were being developed, the ESJGWA prioritized stakeholder involvement and outreach, dedicating staff and financial resources for this high-priority effort. Beyond what is required to implement projects and management actions at the GSA level, the following list documents outreach activities completed by the GSAs in WY 2024:

- Five Eastern San Joaquin GWA Board Meetings were held. Eight Steering Committee Meetings were held.
- The ESJGWA held two public Stakeholder Advisory Workgroup (SAW) meetings and one informational open house event devoted to SGMA outreach and providing information to the public on the 2024 GSP Amendment development process. The purpose was to provide participants with information on GSP development, seek feedback from stakeholders and the public, provide a forum for the public to interact with their GSA representatives, and address questions in a transparent manner. These events were held on an approximately quarterly basis in different locations throughout the Subbasin, as listed below.
    - June 26, 2024 – Robert J. Cabral Agricultural Center, Stockton (23 attendees)
    - July 17, 2024 – Robert J. Cabral Agricultural Center, Stockton (18 attendees)
    - September 25, 2024 – Robert J. Cabral Agricultural Center, Stockton (40 attendees)
- Additionally, GSA member agencies hosted local informational community meetings related to the SGMA process and to publicize the release of the Public Draft GSP for public comment.
- Individually, member GSAs provided targeted outreach materials to their constituencies through the distribution of outreach and informational materials
- Community events, including guided tours of facilities for the community, grower outreach meetings, and a tour for community leaders, were held to promote recharge projects and plans, and discuss challenges.
- Member GSAs provided SGMA and project related updates to their Boards and other leadership bodies, including the Water Advisory Committee and the Linden-Peters Chamber of Commerce.

- Factsheets, email announcements, and newsletters were used to raise awareness about topics and events relevant to the GSP and SGMA.
- Social media channels, such Facebook, were used to distribute targeted information relevant to SGMA, the GSP, and specific projects.
- Comment cards, provided in postcard format at the public informational open house, allowed the public and stakeholders to contribute written comments, solicit additional information, make suggestions, and submit other feedback as appropriate.

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Appendix A – GSP Projects and Management Actions Implementation Progress

Table A-1. Summary of Implementation Progress of GSP Projects and Management Actions

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Lake Grupe In-lieu Recharge	A	In-Lieu Recharge	SEWD	Complete	2020-2023	Project is complete. Meter is installed.
SEWD Surface Water Implementation Expansion	A	In-Lieu Recharge	SEWD	Implementation	2019-2029	The expansion is being implemented in stages. SEWD has completed the conversion of 2,505 acres to surface water and is in the planning phase to convert an additional 1,135 acres. During WY 2024, SEWD continued their constituent outreach efforts for surface water expansion. Through the CDFA SWEEP BLOCK Pilot Program, SEWD has been able to provide funding for an additional 1,560 acres to access surface water. The SWEEP projects will be fully implemented by the end of 2025.
City of Manteca Advanced Metering Infrastructure	B	Conservation	City of Manteca	Delayed	Not Determined	The Project status information presented in the GSP is up to date. Project implementation will take place once funding is available.
City of Lodi Surface Water Facility Expansion & Delivery Pipeline	B	In-Lieu Recharge	City of Lodi	Planning	2030-2033	The Project status information presented in the GSP is up to date. Project implementation did not occur during WY 2023 since implementation is not planned until 2030. Updates regarding activity progress will be included in future Annual Reports.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
White Slough Water Pollution Control Facility Expansion	A	Direct Recharge	City of Lodi	Construction complete	2019-2020	Recharge numbers previously provided
CSJWCD Capital Improvement Program	A	In-Lieu Recharge	CSJWCD	On-going	2020-2027, on-going with 7-year completion cycles	The Project status information presented in the GSP is up to date. The Project has been implemented and is on-going each year of available water delivery. This continues to be the case as new customers and locations are added. Updates regarding activity progress will be included in future Annual Reports.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
NSJWCD South System Modernization	A	In-Lieu Recharge	NSJWCD	Environmental review complete, funding secured for Phases 1, 2 and 3. Landowner improvement district formed. Phases 1-2 complete.	2018-2025 (Phases 1, 2, 3 Pixley Lateral and Handel Lateral); 2025-2028 for Phase 4; 2028-2035 for future phases	This Project is progressing. Phase 1 completed in 2019-2021 included: new pump station, variable frequency drive (VFD), meters, automation equipment, SCADA, new main junction box at Tretheway and Brandt Road. Phase 2 completed 2023-early 2024 including new sections of main pipeline and adding meters and SCADA. ID3A formed in 2021 for construction of the Pixley lateral, which was completed in 2022. Working on formation of ID3B for Handel lateral (for which NSJWCD received $1 mil federal grant). NSJWCD was awarded a $3M IRWM grant for Phase 3 South System improvements to focus on more mainline replacement and groundwater recharge capacity. Phase 3 is under construction and expected to be complete in 2025. NSJWCD applied for a $3M WaterSmart Grant for Phase 4. Future phases will include additional laterals and recharge capacity along the south system to expand capacity to take wet year water for recharge, including MICUP water

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Long-term Water Transfer to SEWD	A	Transfers	SSJID	Infrastructure is in place. CEQA completed and agreements in place as of 2023.	2019-2021	In 2023, OID and SJJID approved a 10-year water transfer to SEWD. The water will be delivered through the existing Goodwin Tunnel and the Upper Farmington Canal for final delivery to SEWD's municipal and agricultural customers. OID and SSJID will make available to SEWD up to 10,000 AF in critical years and up to 20,000 AF in non-critical years depending on availability of pre-1914 Stanislaus River water. The water transfer was approved following adoption of a negative declaration per CEQA. Due to above normal conditions, no water was transferred in 2024 as part of the 10-year water transfer.
BNSF Railway Company Intermodal Facility Recharge Pond	B	Direct Recharge	CSJWCD	Planning	2020-2025	The Project status information presented in the GSP is up to date. Project implementation did not occur during WY 2021 due to delays as a result of the COVID-19 pandemic. The project was again delayed in WY 2022 due to severe drought conditions. CSJWCD has moved forward with the Project and has made contact with the property owner to negotiate an agreement to allow use of the ponds for percolation purposes. CSJ is currently seeking bids for the estimated cost of a diversion structure and pipeline from District channel into the project area. Estimated completion of project is end of 2025

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
City of Stockton Advanced Metering Infrastructure	A	Conservation	City of Stockton	RFP for full AMI issued in March 2023. Contract awarded in March 2024.	2023-2028	Project will convert touch read meters to full AMI. Planned to be completed over 6 years with a $17M budget. Initial study completed in 2011. Contract award in March 2024. Project completion in 2028.
South System Groundwater Banking with East Bay Municipal Utilities District (EBMUD)	A	In-Lieu Recharge	NSJWCD	Pilot Dream Project completed April 2024. Working on expanded banking project	2020-2024 for Dream Project. Larger PDA project planning in 2024-2025 and implement by 2030	NSJWCD and EBMUD completed contracts, new facilities, water right change petitions, water delivery and extraction for the pilot DREAM Project (1,000 AF). Planning efforts for a larger scale banking project are underway.
NSJWCD North System Modernization/Lakso Recharge	A	In-Lieu Recharge	NSJWCD	Constructed Phase 1A, in progress on Phase 1B. Planning Phase 2	2021-2026	Project is advancing. NSJWCD awarded Proposition 68 Round 2 funding $3.9 mil. Phase 1A constructed and operated in 2023-24 to recharge in two locations. Phase 1B adding half a mile of 42 inch pipe along Acampo Road completed in 2025 to add irrigation deliveries. NSJWCD is working with North System landowners to form improvement district to use surface water for irrigation and conduct on-farm recharge in wet years. District received FDRE grant to double the current temporary pump station capacity to 7,000 GPM and negotiated a ten year 80 acre lease on the LAKSO property for a year round recharge basin. District began LAKSO basin operations in January of 2025. Planning Phase 2 to add new Pump Station and fish screen

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Manaserro Recharge Project	B	Direct Recharge	NSJWCD	Planning	2023-2025	The Project status information presented in the GSP is up to date. NSJWCD is continuing to work on a strategic plan and funding options for the implementation of this Project and negotiate with landowner or find alternative location. Recently adopted NSJWCD groundwater charge may provide funding to advance this project in future years.
Tecklenburg Recharge Project	A	Direct Recharge	NSJWCD	Substantially complete.	2022-2024	The District acquired a 10-acre parcel in 2023 and constructed and operated recharge basin from July 2023 to present. District awarded a contract to Central Irrigation install a new lateral from South System mainline to increase project capacity in 2025
City of Escalon Wastewater Reuse	B	Recycling/In-Lieu Recharge/Transfers	SSJID	Planning	2020-2028	The Project status information presented in the GSP is up to date. The Project is in the early conceptual stages and requires additional feasibility analysis and long-term planning. The City of Escalon has hired a consultant to explore the feasibility of project alternatives and to develop engineering plans and specifications.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
City of Ripon Surface Water Supply	B	In-Lieu Recharge	SSJID	Design complete; environmental permitting underway; negotiations for the right to connect are underway.	2028-2030	The City of Ripon is set to receive $3.5 Million in directed congressional funding through the State Drinking Water Revolving Fund. The City of Ripon is seeking terms to connect to the Nick DeGroot Water Treatment Plant from the current South County Water Supply Program participants and will also need to work through SSJID design criteria for connection to its drinking water facilities. In 2024, Ripon issued a draft Initial Study and Mitigated Negative Declaration for the Pipeline Trunk Project to connect to the SSJID WTP and is in the process of finalizing that document.
City of Escalon Connection to Nick DeGroot Water Treatment Plant	B	In-Lieu Recharge	SSJID	Conceptual design; environmental review complete; Council approval is pending further design work and rate study	2028-2030	The City of Escalon completed an initial feasibility study of alternatives currently ranging between $3.5 million - $8 million. In 2023, the City of Escalon further developed its engineering design to incorporate design criteria for connection to SSJID drinking water facilities and right-of-way acquisition needs. In 2024, Escalon applied to the Bureau of Reclamation Drought Response Grant Program for the connection with the SSJID WTP.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Farmington Dam Repurpose Project	B	Direct Recharge	SEWD	Planning/Initial Study	2030-2050	The Project status information presented in the GSP is up to date. Project implementation did not occur during WY 2022 as SEWD dedicated resources to bring short-term projects online first. SEWD has been working with Congressman Harder and the approved 2024 Water Resources Development Act (WRDA) bill includes a re-authorization for a new feasibility study. More resources will be directed toward the feasibility study, which will begin in 2025. Updates regarding activity progress will be included in future Annual Reports.
Mobilizing Recharge Opportunities (MICUP)	B	Direct Recharge	San Joaquin County	Project Development	2024-2040	Under a Sustainable Groundwater Management Implementation Grant Program Round 1 award, San Joaquin County is advancing a suite of projects through the Mokelumne Integrated Conjunctive Use Program (MICUP) to put to beneficial use water appropriated through the Mokelumne River Water and Power Authority's water right application using existing and new infrastructure owned and operated by MICUP Coordinating Committee member agencies. Project identification in 2024, CEQA and water right in 2025, implementation from 2025-2040.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
NSJWCD Winery Recycled Water	B	Recycling/In-Lieu Recharge/Direct Recharge	NSJWCD	Conceptual planning and discussion	2025-2027	The Project status information presented in the GSP is up to date. NSJWCD is continuing to work on a strategic plan and funding options for the implementation of this Project or a similar project with winery.
SSJID Storm Water Reuse	B	Storm Water/In-Lieu Recharge/Direct Recharge	SSJID	Planning	2027-2030	The Project status information presented in the GSP is up to date. Project 23 remains a project concept that could be considered for as WMP projects are advanced, and the concept integrated during the engineering design process.
South Stockton Well Rehabilitation Program	MA	Monitoring and Reporting	City of Stockton	Rehab existing wells. Design in progress to add well head treatment to existing Well SSS8. Back-up power to be added to Well SSS3 & SSS9.	2021-2024	Design of SSS8 well head treatment is complete and construction to be complete in Feb 2024. HCS Engineering to design backup power to Well SSS3 and SSS9. The design is scheduled to be complete in early 2024.
City of Stockton Phase 1: Groundwater Recharge Project	A	Direct Recharge	City of Stockton	Feasibility study completed in December 2023. Basin design in progress. Construction to begin spring 2025.	2022-2026	The request for proposals was released in early spring of 2022. Geosyntec was awarded the contract, and the geotechnical study began in July of 2022. The geotechnical and feasibility studies were completed in December 2023. The basin design is in progress and construction of the basin(s) will begin in Spring 2025.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Mokelumne River Loss Study	MA	Model Refinement and Validation	NSJWCD	Conceptual planning and discussion	2020-2025	The Project status information presented in the GSP is up to date. Project implementation did not occur during WY 2021 due to a lack of funding and lack of staff resources to complete the plans and move the projects forward. NSJWCD is continuing to work on strategic plan and funding options for the implementation of this Project.
Monitoring and recording of groundwater levels and groundwater quality data	MA	Monitoring and Reporting	Subbasin-wide	Ongoing	2020-2040	The Project status information presented in the GSP is up to date. This is the sixth Annual Report that reports groundwater level and groundwater quality monitoring data. Updates regarding activity progress will be included in future Annual Reports.
Maintaining and updating the Subbasin Data Management System (DMS) with newly collected data	MA	Monitoring and Reporting	Subbasin-wide	Ongoing	2020-2040	The Project status information presented in the GSP is up to date. The DMS was maintained and updated to include monitoring data for WY 2024. Updates regarding activity progress will be included in future Annual Reports.
Annual monitoring of progress toward sustainability	MA	Monitoring and Reporting	Subbasin-wide	Ongoing	2020-2040	The Project status information presented in the GSP is up to date. This is the sixth Annual Report that monitors the progress toward sustainability. Updates regarding progress toward sustainability will be included in future Annual Reports.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Annual reporting of Subbasin conditions to DWR as required by SGMA	MA	Monitoring and Reporting	Subbasin-wide	Ongoing	2020-2040	The Project status information presented in the GSP is up to date. This is the sixth Annual Report that describes the current conditions in the Subbasin and will be submitted to DWR as required by SGMA. Updates regarding Subbasin conditions will be included in future Annual Reports.
Addressing Data Gaps	MA	Monitoring and Reporting	Subbasin-wide	Ongoing	2020-2040	NSJWCD contracted with DWR and San Joaquin County to install a TSS monitoring well with in the NSJWCD area. 6 new shallow wells were drilled in the Subbasin to monitor for Delta hydrology conditions and interconnected surface water.
Wallace-Burson Conjunctive Use Program	B	Conjunctive Use/Direct Recharge	CCWD	Conceptual planning and discussion	2030-2040	Hydrogeology and water supply studies developed; designing and developing specific program facilities (e.g., recharge basins, conveyance).
Calaveras River Wholesale Water Service Expansion	B	In-Lieu Recharge	CCWD	Conceptual planning	2020-2040	CCWD has available surface water supply to set up agreement(s) facilitating in-lieu recharge in Calaveras County portion of Subbasin. Studies needed based on specific partners, arrangements, etc.
AMI Replacement and Conversion	MA	Monitoring and Reporting/Conservation	CCWD	Completed	2022	CCWD completed replacement and conversion of customer water meters to Automated Meter Infrastructure (AMI) in March 2022. Anticipated improved customer-level consumption data going forward.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Groundwater Monitoring Plan	MA	Monitoring and Reporting	NSJWCD	Ongoing	2023	NSJWCD retained a hydrogeologist, installed one monitoring well in 2023, and is contracted to install 3 more monitoring wells in 2025. District is also contracted to install five well monitors in 2025. District also began collecting water level data from ag wells in 2023 to inform a larger scale monitoring program.
Recycled Water to Manteca Golf Course	B	Recycling	Manteca	12-in pipeline installed. Waiting for DWR to determine grant recipients	Not yet determined	The Reclaimed Water Facilities Master Plan was adopted in January 2023. The city is pursuing recycled water projects, one of which is sending reclaimed water to irrigate the Manteca Golf Course. 12-in piping to deliver reclaimed water has been installed. The city is pursuing funding, like grants, to finance the construction of a pump station, and storage tank(s) to transmit water to the golf course.
West Groundwater Recharge Basin	A	Direct Recharge	SEWD	Ongoing	2040	The project is currently in the design stage with first phase construction beginning spring 2025 and is estimated to be completed in approximately 2040.
Threfall Ranch Reservoir, In-Lieu and Direct Recharge Project	B	In-Lieu Recharge/Direct Recharge	Stanislaus County SMWC (Eastside GSA)D	Design	2025	Final design has been completed, and environmental review and permitting is pending receipt of project funding.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
NSJWCD Private Pump Partnerships	A	In-Lieu Recharge/Direct Recharge	NSJWCD	Ongoing	2024	NSJWCD has executed one agreement with an existing riparian pumper in 2024 to use NSJWCD water permit to irrigate 200 acres and plans to add an additional 200 acres each year for 5 years.
Perfecting Mokelumne River Water Right	B	In-Lieu Recharge	San Joaquin County	Planning	2024-2025	Petition for Amendment to MRWPA Water Right Application 29835 and Underground Storage Supplement Application being prepared to the State Board Division of Water Rights. Notice of Preparation for CEQA document issued on July 2, 2024
North System Groundwater Recharge Project - Phase 2	B	Direct Recharge/In-Lieu Recharge	NSJWCD	Design phase with planned construction in 2025-2026	2026-2029	Team retained to design and bid new pump station in 2024-2026. The Master Plan for the entire North System is current in progress. The Master Plan will identify opportunities for direct and in-lieu recharge in the North System portion of the District. As discussed above the District negotiated a ten year lease for a year round 80 acre recharge project on the LAKSO property
Stormwater Collection, Treatment, and Infiltration	B	Direct Recharge/	Manteca	Planning/Initial Study	To Be Determined	The city is currently working to identify a funding source for the study.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Off-Stream Regulating Reservoir	B	Direct Recharge	SEWD	Planning	2026-2050	The Project is still in the design phase. A preliminary list of the most ideal locations has been developed based off operational benefits of the distribution system. These proposed locations will be cross-referenced with ideal areas for recharge. Land will need to be purchased. Request for Proposal for Water Banking Study is being prepared.
On-Farm Recharge Project	B	Direct Recharge	SEWD	Planning/Initial Study	2024-2030	The project would use existing farm infrastructure to divert surface water for direct recharge through Flood-MAR, or potential dry wells. So far, SEWD has not received a lot of interest from farmers to participate.
Bellota Weir Modifications Project	B	Direct Recharge/Stormwater	SEWD	Permitting	2024-2030	Project is in the permitting stages. The encroachment permit under review. Construction is pending until permits approval. Construction is to begin in 2025.
West Linden Project	B	In-Lieu Recharge/Direct Recharge	SEWD	Planning/Design	2025-2035	The project is still in the planning and design phase. The project would bring Mokelumne and Calaveras Rivers water to the area west of Linden where the groundwater table is at its lowest.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Water Supply Enhancement Project - Direct Recharge	B	Direct Recharge	SEWD	Planning	2024-2030	This project would use surface water from the New Hogan distribution system to implement direct recharge projects such as dry wells or recharge basins along the distribution system. This project is still in the planning phase. Grant funds were just received from USBR to complete the design and permitting for Clements Pipeline (One of the six proposed sub-projects). The project would provide access to surface water to farmers that currently don't have access and multiple opportunities for recharge of flood water. This would greatly increase groundwater storage through in-lieu and direct recharge, once fully implemented.
SSJID Water Master Plan - System Improvements	B	In-Lieu Recharge	SSJID	Feasibility study complete	2023 - 2040	In 2022, SSJID completed a comprehensive Water Master Plan to address its aging infrastructure and to make strategic improvements to SSJID irrigation system. SSJID hopes to improve the level of service to customers through increased lateral capacity, new reservoirs, and additional SCADA controls. In total, SSJID has identified $191 Million in capital improvements and to fund these projects, SSJID completed a substantial Prop 218 rate increase in July 2023.

Oakdale Irrigation District In-lieu and Direct Recharge Project	A	Direct Recharge/In-Lieu Recharge	Oakdale	Ongoing	2023-2032	The Project will facilitate OID surface water deliveries, which are surplus to the in-District irrigation demand, for in-lieu use or direct recharge for Eastside San Joaquin GSA landowners between March 1st and September 30th, during conditions that will not impact OID's existing agricultural customers. Some direct recharge is expected to occur from the Project as canal or reservoir seepage in the conveyance network. The OID Board of Directors will continue to consider and define the volume of water (if any) available to this Project on an annual basis in non-Critically Dry water years. The OID 10-Year out-of-District Water Sales Program (10-Year Program) began in 2023 and includes 4,292 irrigated acres in the Eastern San Joaquin Subbasin within the Eastside San Joaquin GSA. Under the 10-Year Program, participating landowners are required to purchase a minimum of 1.5 acre-feet per irrigated acre when surplus surface water is available from OID. Approximately 5,370 AF of surface water was delivered to out-of-District lands in the ESJ subbasin during the 2024 WY. OID anticipates that volume to grow in the 2025 irrigation season as additional turnouts are completed and connected to private irrigation systems. The landowners also have the opportunity to purchase and use additional surplus surface water throughout the irrigation season if available.

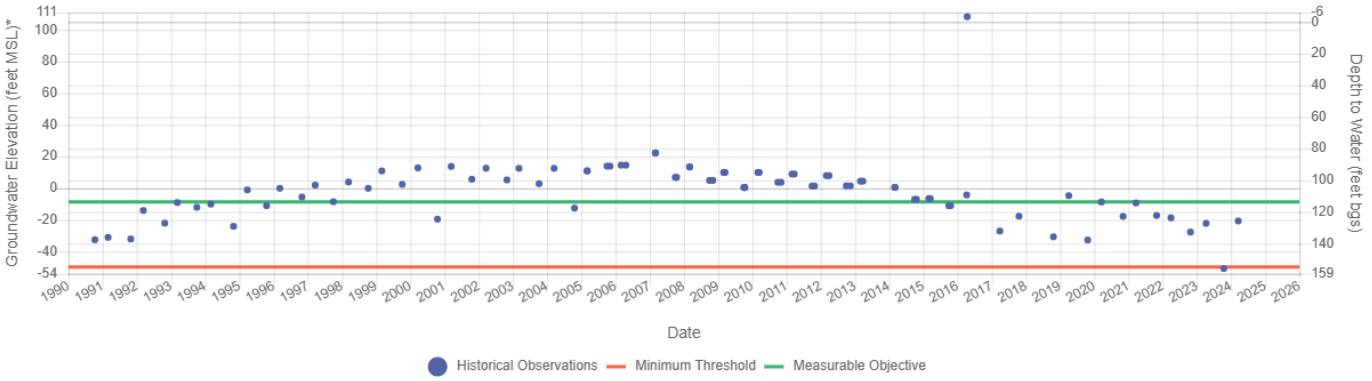
Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Water Supply Enhancement Project - Distribution Pipelines	B	In-Lieu Recharge/Direct Recharge	SEWD	Planning	2024-2040	This project would provide surface water distribution to the area of Linden through proposed pipelines. The proposed pipelines are named Clements Gravity Pipeline, Houston Gravity Pipeline, Demartini, and Mosher.
Water Treatment Plant Aquifer Storage Recovery Well - 7401	B	Direct Recharge	SEWD	Implementation	2024-2026	This Project is currently being implemented. The design is complete and funding is secured. The construction is scheduled for the beginning of 2025. It includes refurbishing an existing extraction well to make it compatible for injection and extraction.
Beckman Well	B	Direct Recharge	SEWD	Refurbish	2024-2028	SEWD is working with EBMUD to get the Beckman ASR well functional again. The project would recharge surface water from East Bay Mud Aqueduct or New Hogan, then store the water in the aquifer to later be extracted in times of drought.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Tom Allen Recharge Project	B	Direct Recharge	SEWD	Implementation	2024-2025	This Project includes a 0.3-acre recharge reservoir constructed as a pilot project in 2023. It is functional as a recharge basin with low recharge rates. It is estimated that the recharge is approximately 24 AF per year if operational from April to October. The District is looking into installing dry wells at the same location, to increase infiltration rates and recharge.
Q/Qc Conjunctive Use Project	B	In-Lieu Recharge	SSJID	Design	2025	In 2024, SSJID applied to the Bureau of Reclamation for a Drought Response Program Grant for the upsizing of the District's Q-Qc lateral which would bring a higher level of service to SSJID's ag customers enabling increased surface water use and reduced groundwater pumping. The final design is near complete and in 2025, SSJID is planning to exercise its purchase option for the pond site and initiating construction as early as the Fall of 2025.
SSJID Advanced Metering Infrastructure Project	B	Conservation	SSJID	Late Planning	2025	In 2024, the District applied for a WaterSmart Water and Energy Efficiency grant for AMI technology to enable customers to measure applied water in near real time increasing irrigation efficiency. If awarded, meter installations could start in 2026.

Activity	Project Category	Project Type	Project Proponent	Current Status	Schedule (initiation and completion)	Status
Mariposa Drain Water Delivery Improvement Project	B	In-Lieu Recharge	CSJWCD	Planning	TBD	TBD

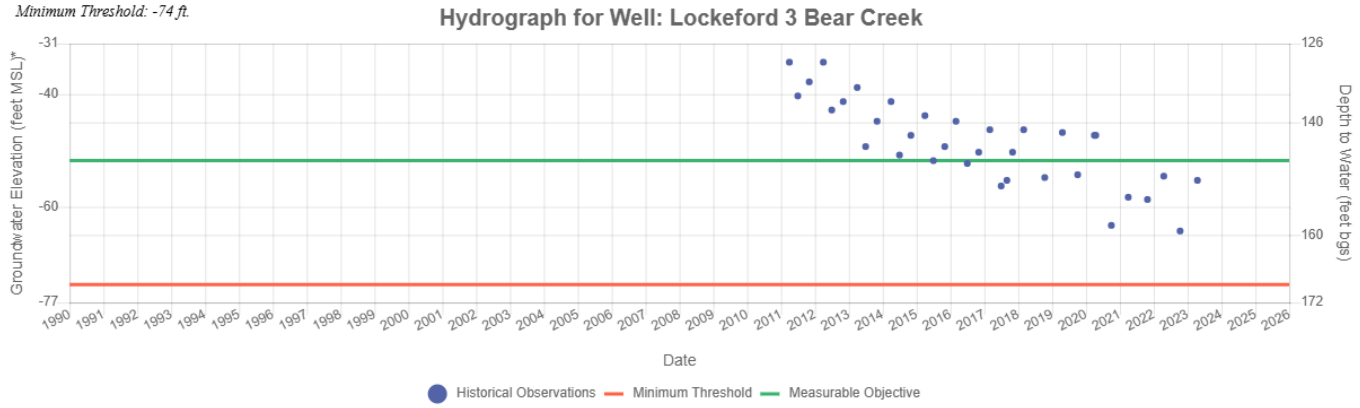
APPENDIX B – REPRESENTATIVE MONITORING NETWORK WELL HYDROGRAPHS FOR GROUNDWATER LEVELS AND INTERCONNECTED SURFACE WATER

Ground Surface Elevation: 105 ft.
Measurable Objective: -9 ft.
Minimum Threshold: -50 ft.

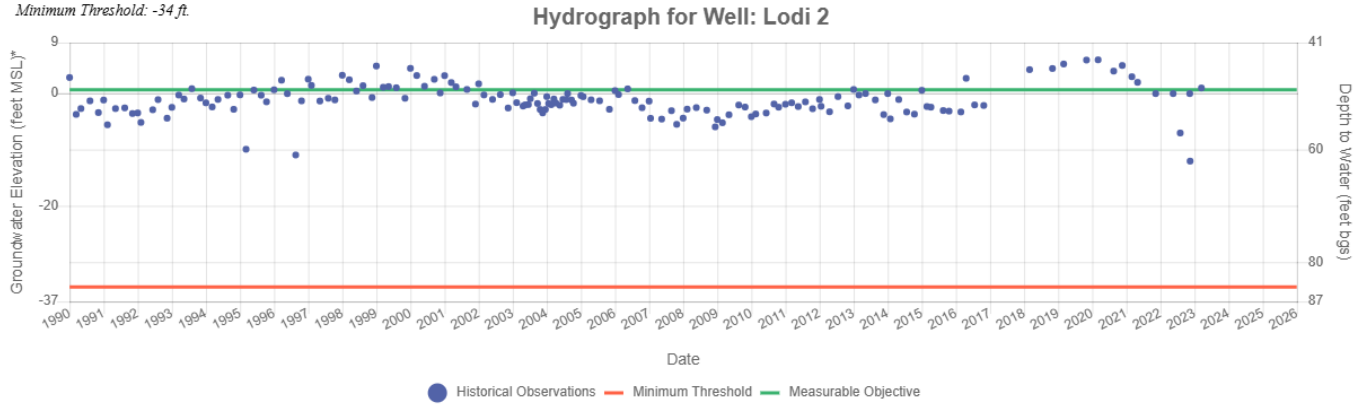


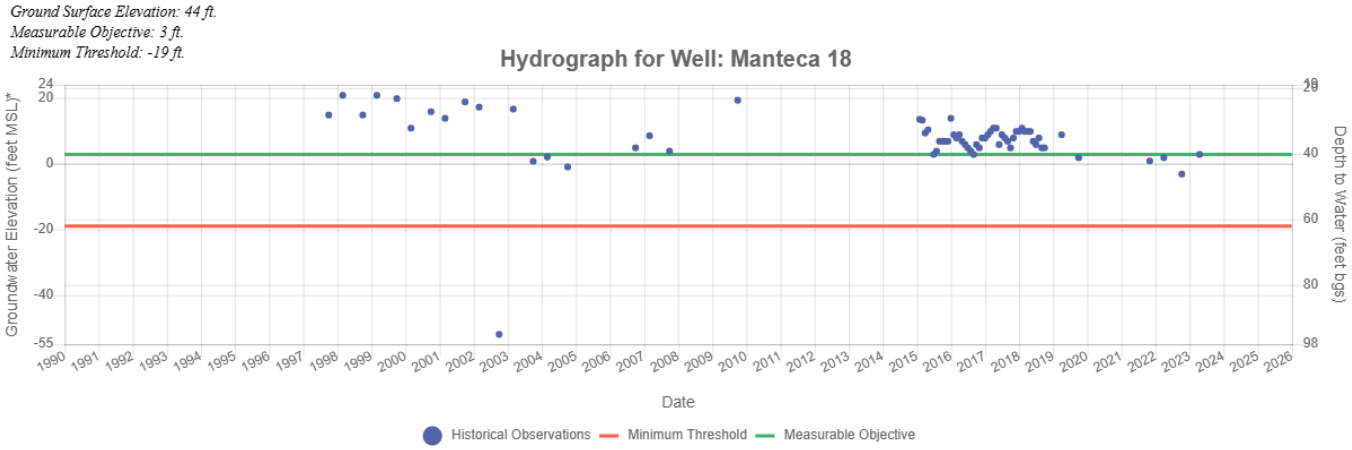
The dataset shown in the above hydrograph has been revised to remove the 2016 outlier.

Ground Surface Elevation: 96 ft.
Measurable Objective: -52 ft.
Minimum Threshold: -74 ft.

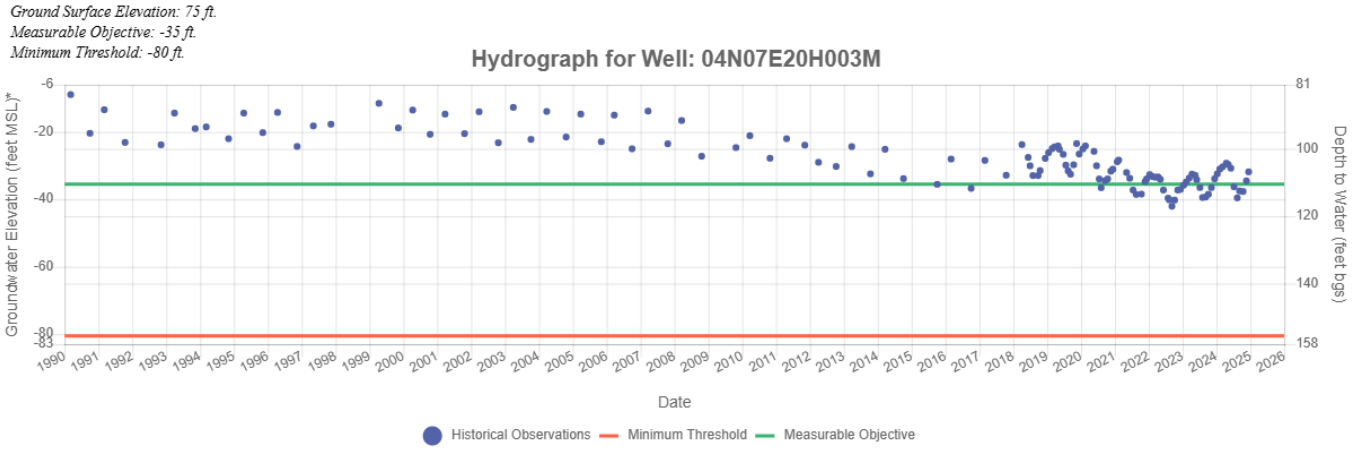


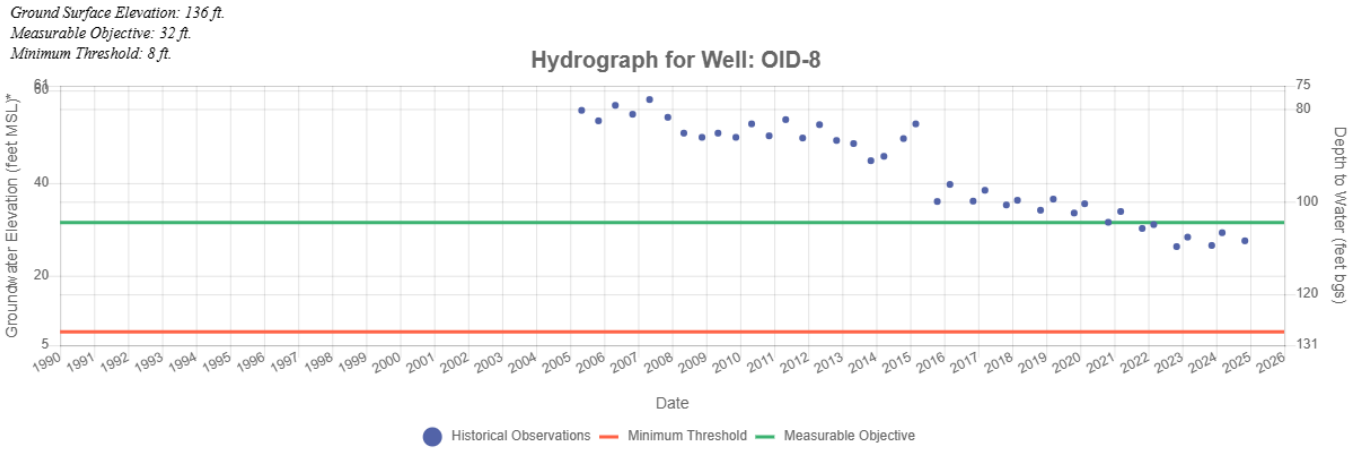
Ground Surface Elevation: 51 ft.
Measurable Objective: 1 ft.
Minimum Threshold: -34 ft.



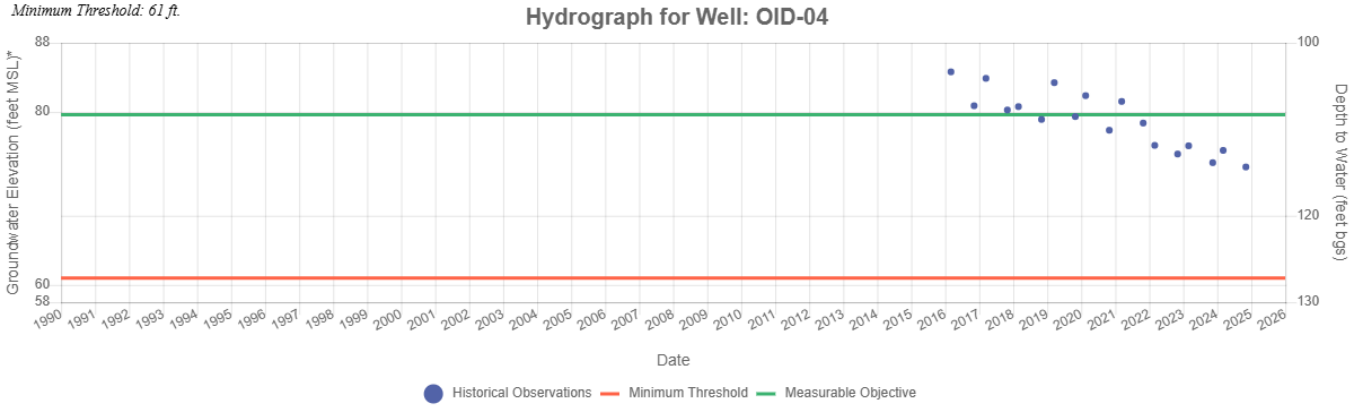


The dataset shown in the above hydrograph has been revised to remove the 2002 outlier.

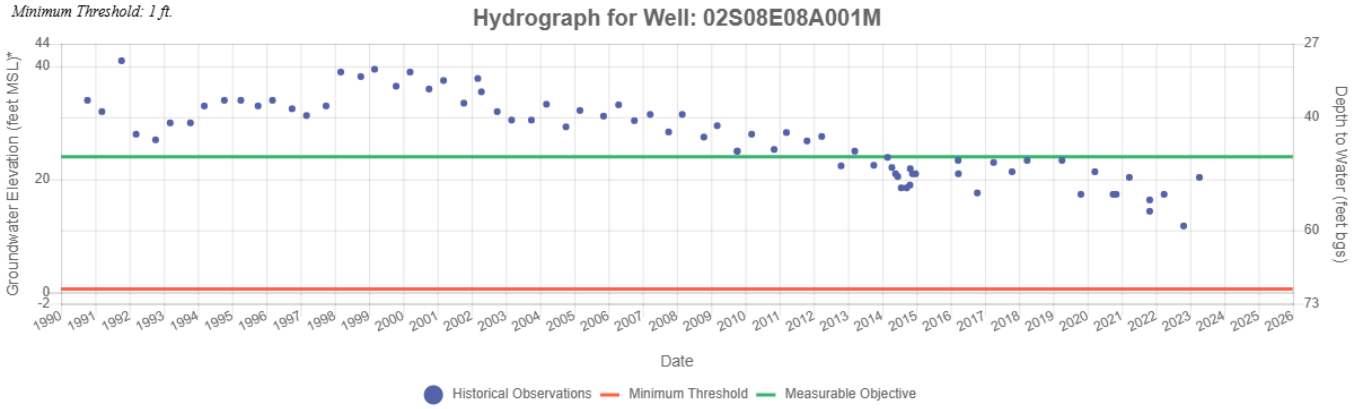




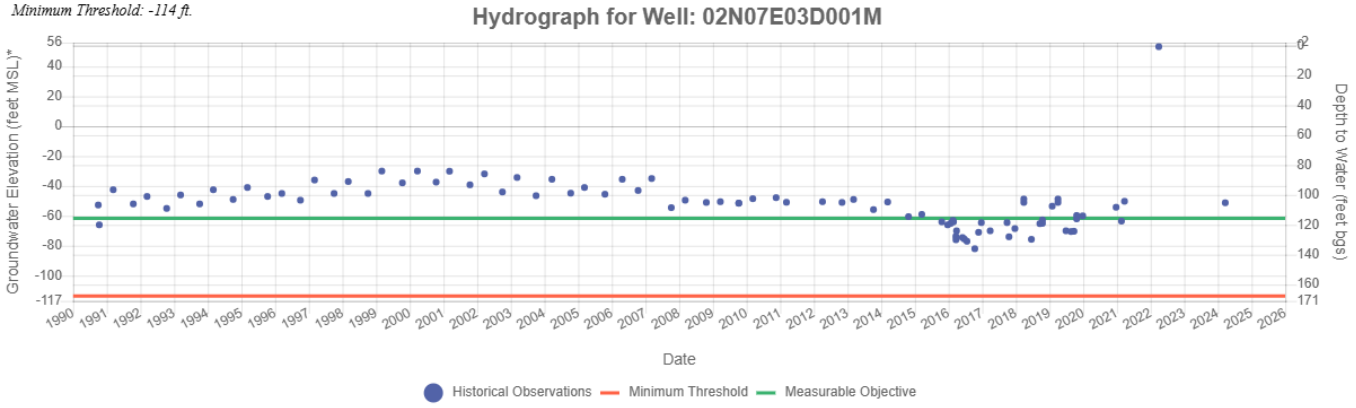
Ground Surface Elevation: 189 ft.
Measurable Objective: 80 ft.
Minimum Threshold: 61 ft.



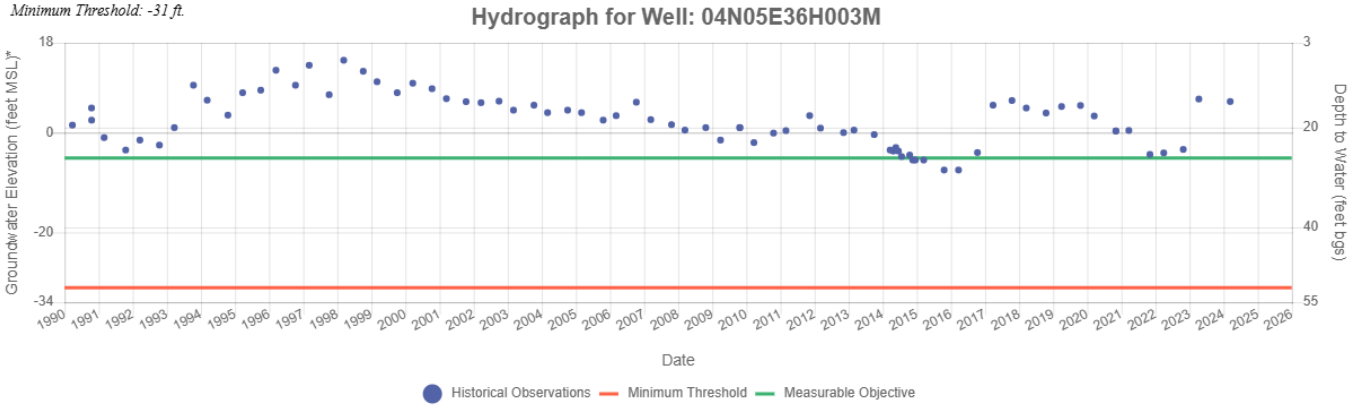
Ground Surface Elevation: 71 ft.
Measurable Objective: 24 ft.
Minimum Threshold: 1 ft.



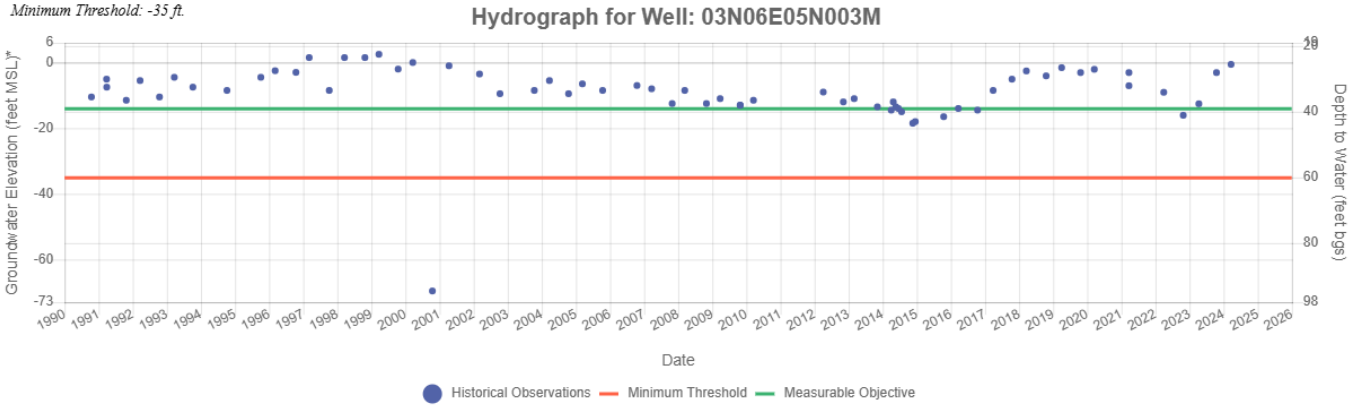
Ground Surface Elevation: 54 ft.
Measurable Objective: -62 ft.
Minimum Threshold: -114 ft.



Ground Surface Elevation: 21 ft.
Measurable Objective: -5 ft.
Minimum Threshold: -31 ft.

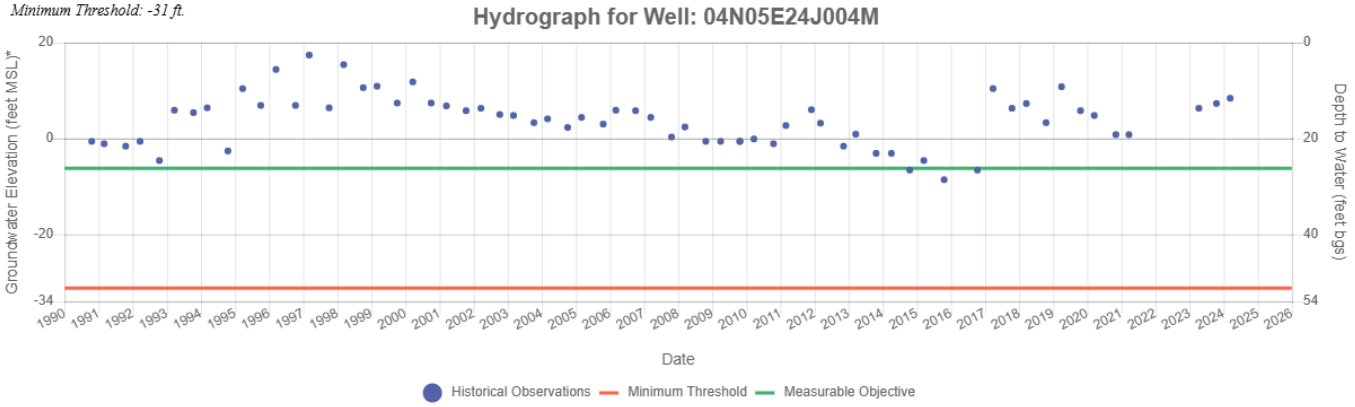


Ground Surface Elevation: 25 ft.
Measurable Objective: -14 ft.
Minimum Threshold: -35 ft.

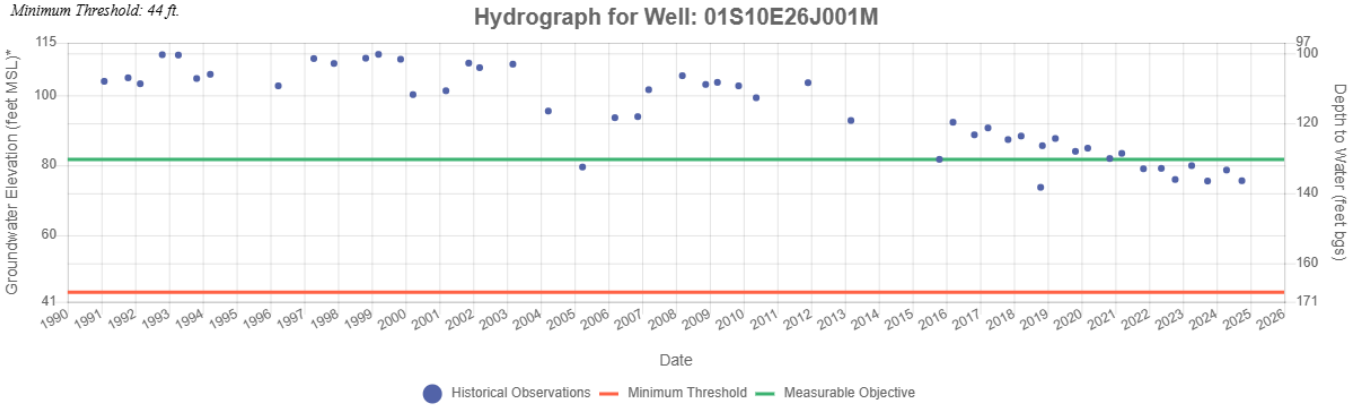


The dataset shown in the above hydrograph has been revised to remove the 2000 outlier.

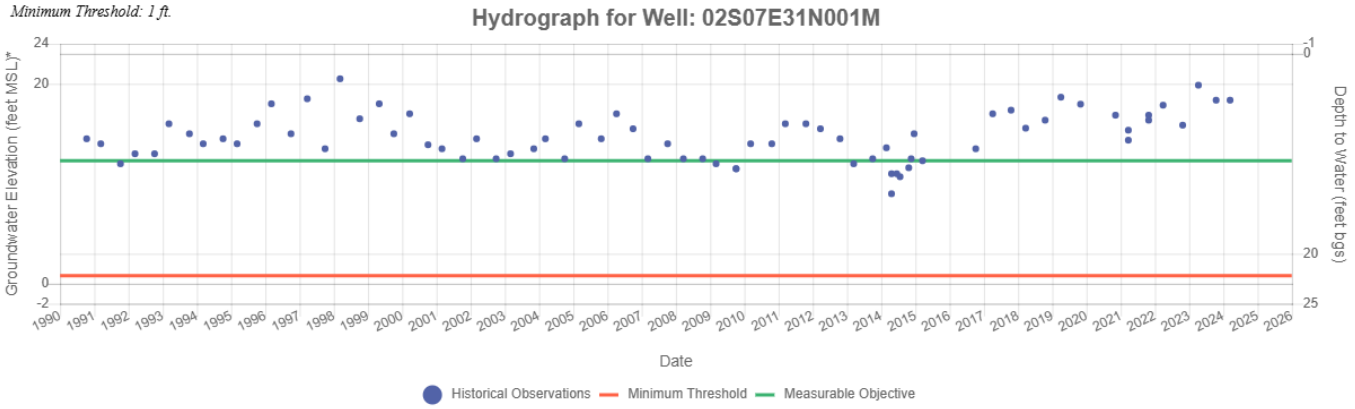
Ground Surface Elevation: 20 ft.
Measurable Objective: -6 ft.
Minimum Threshold: -31 ft.



Ground Surface Elevation: 213 ft.
Measurable Objective: 82 ft.
Minimum Threshold: 44 ft.

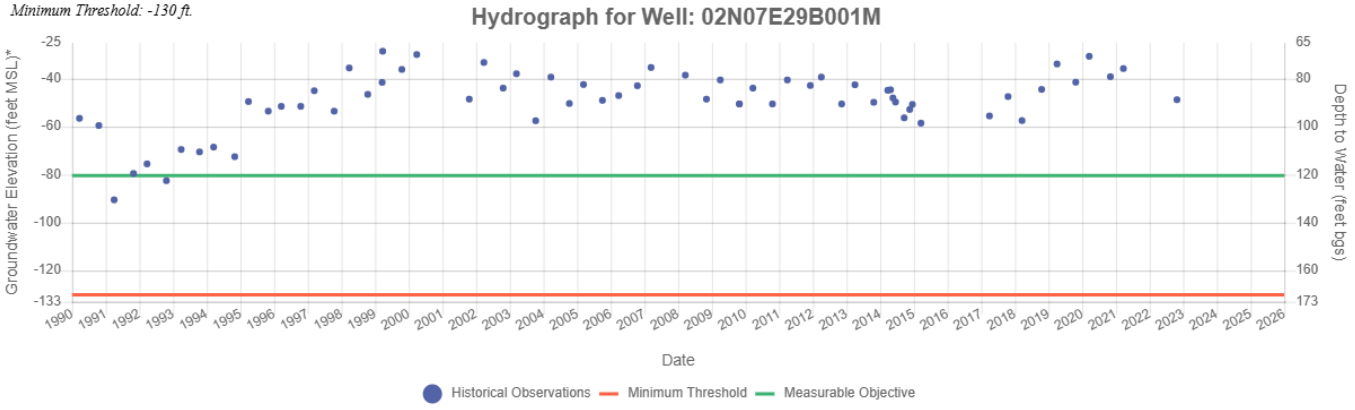


Ground Surface Elevation: 23 ft.
Measurable Objective: 12 ft.
Minimum Threshold: 1 ft.



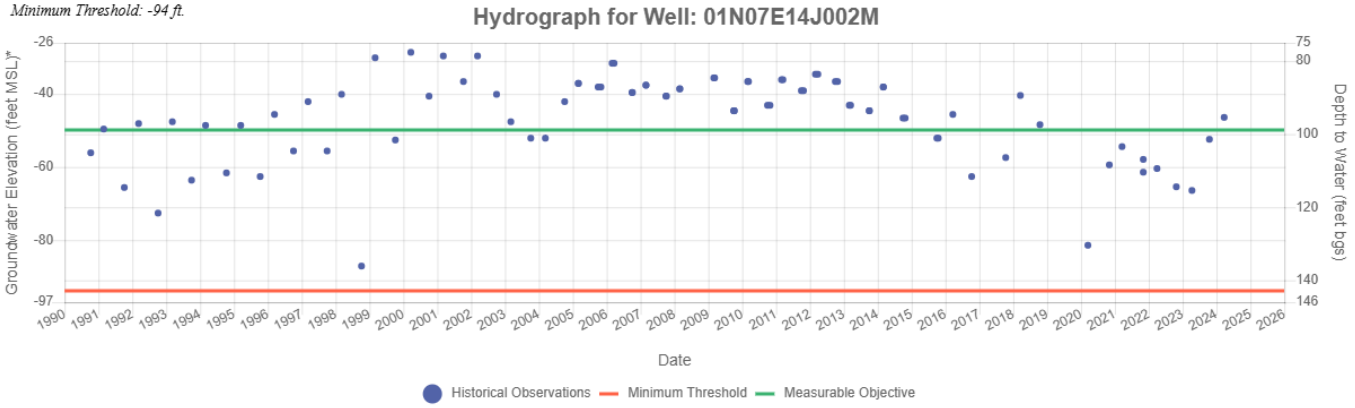
Groundwater level data for WY 1991-2018 in the above hydrograph was provided by South Delta Water Agency, as reported in the GSP. Groundwater level data for WY 2019 was provided by San Joaquin County.

Ground Surface Elevation: 40 ft.
Measurable Objective: -80 ft.
Minimum Threshold: -130 ft.

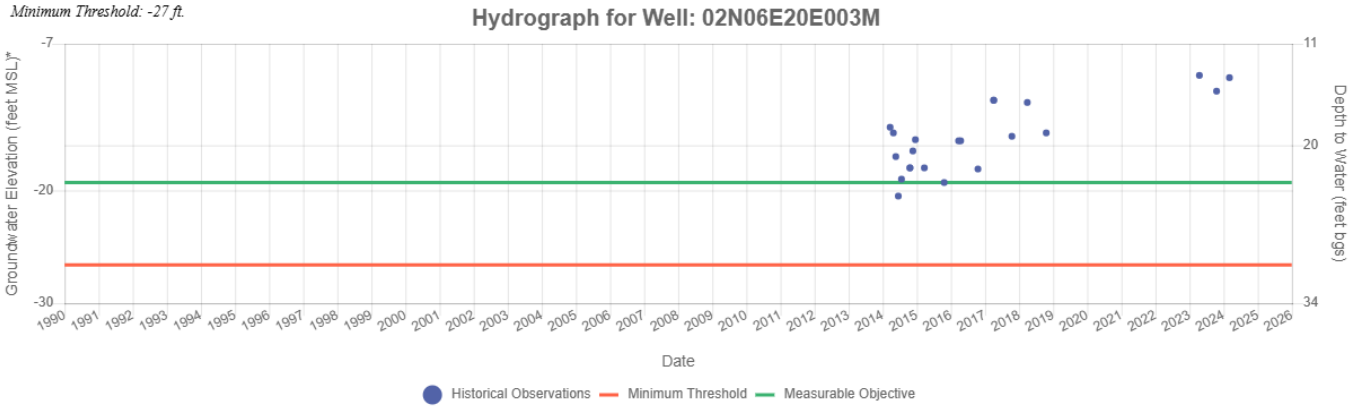


Groundwater level data for WY 1991-2018 in the above hydrograph was provided by Stockton East Water District, as reported in the GSP. Groundwater level data for WY 2019-2020 was provided by San Joaquin County.

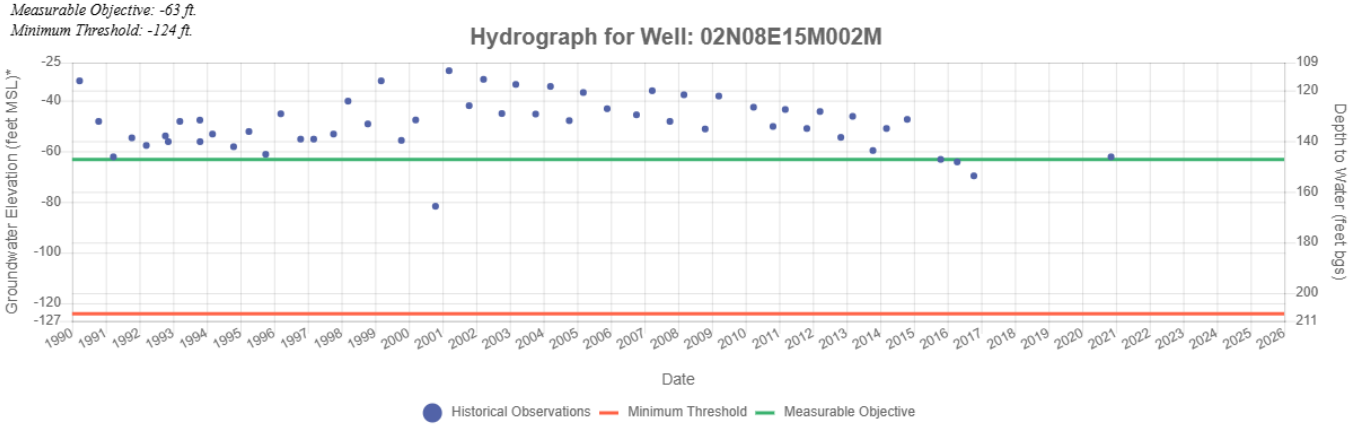
Ground Surface Elevation: 50 ft.
Measurable Objective: -50 ft.
Minimum Threshold: -94 ft.



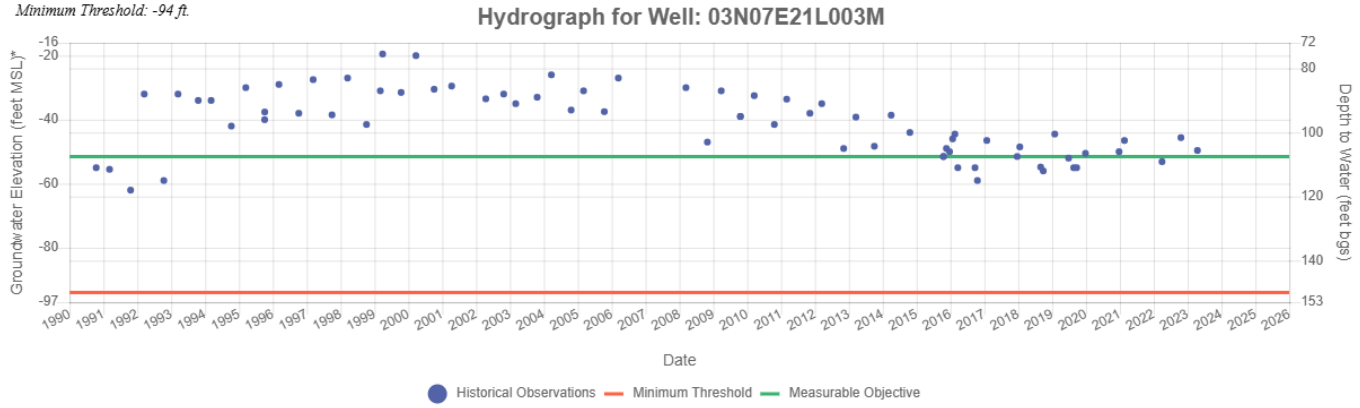
Ground Surface Elevation: 4 ft.
Measurable Objective: -19 ft.
Minimum Threshold: -27 ft.



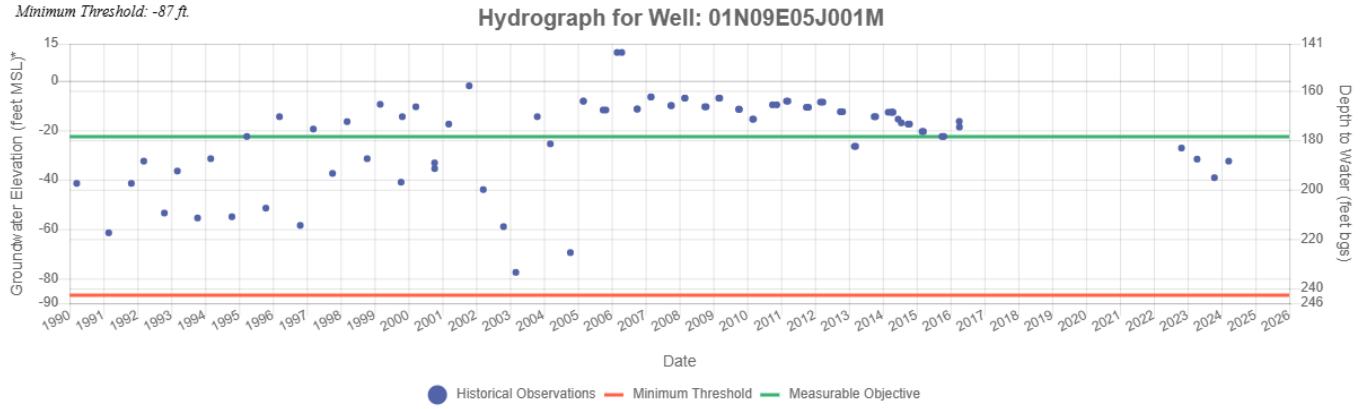
Ground Surface Elevation: 85 ft.
Measurable Objective: -63 ft.
Minimum Threshold: -124 ft.



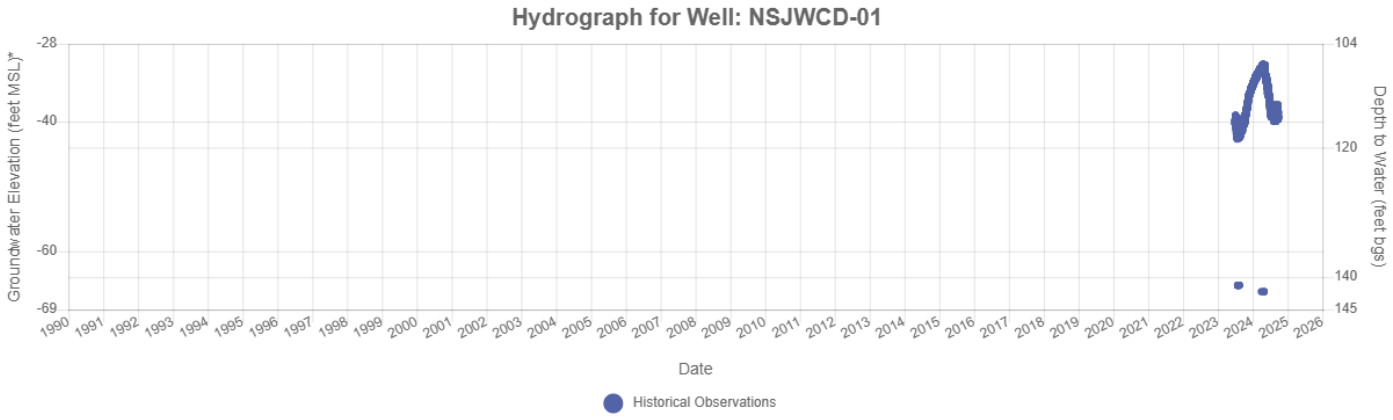
Ground Surface Elevation: 57 ft.
Measurable Objective: -51 ft.
Minimum Threshold: -94 ft.



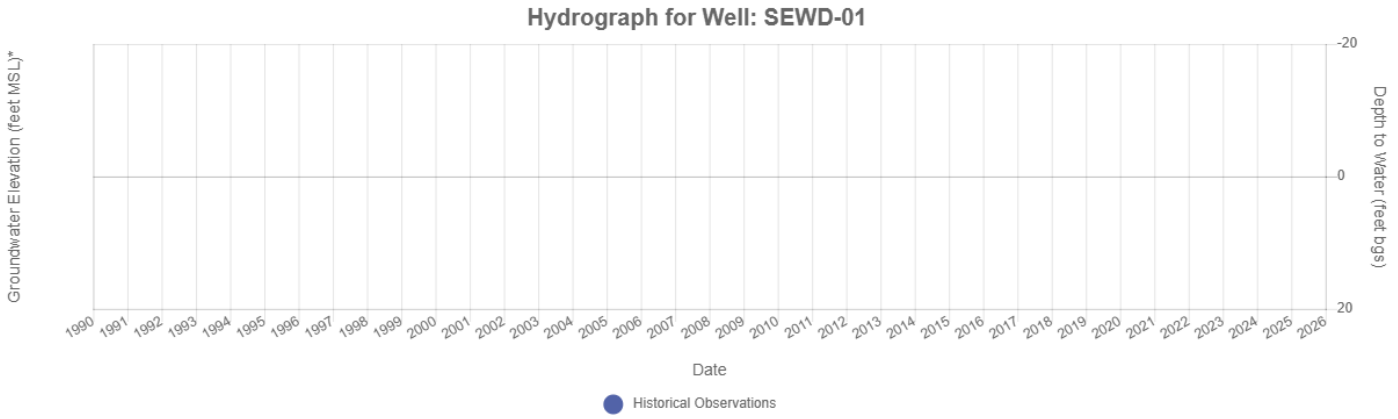
Ground Surface Elevation: 156 ft.
Measurable Objective: -23 ft.
Minimum Threshold: -87 ft.

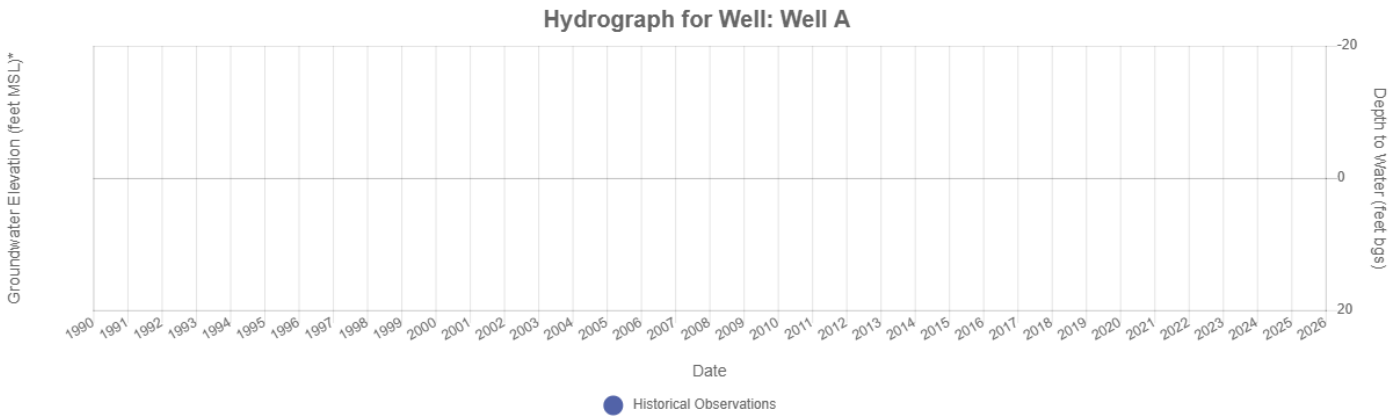


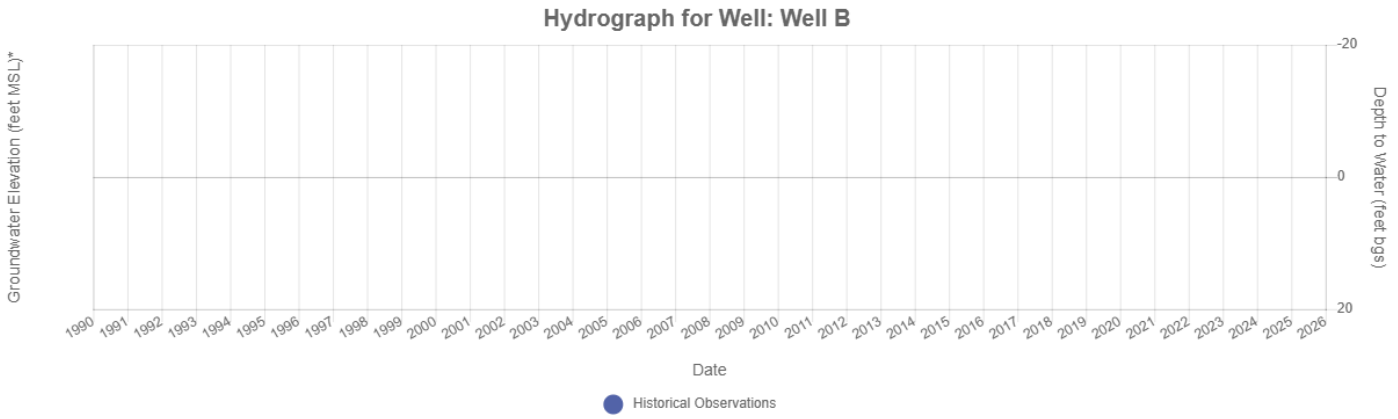
Ground Surface Elevation: 76 ft.

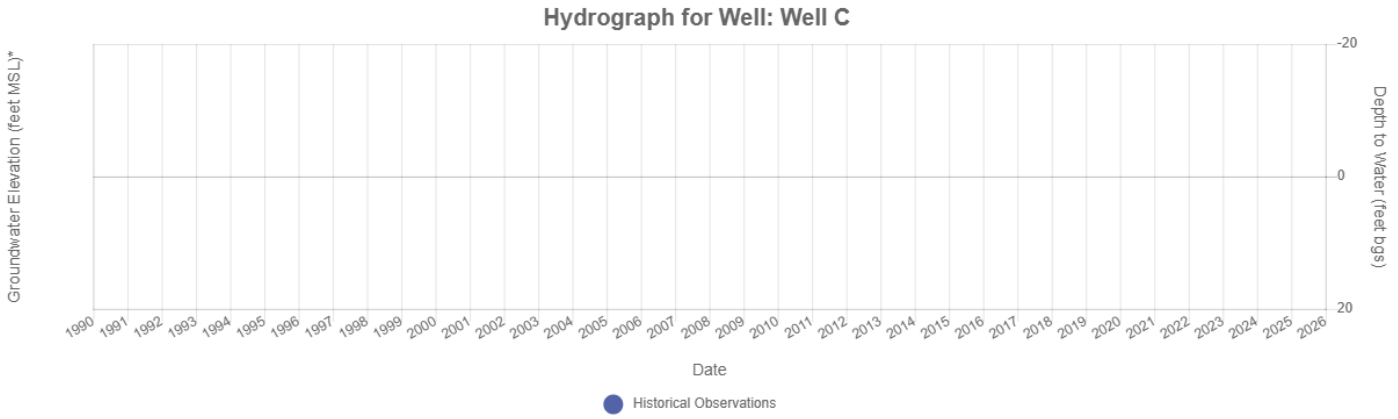


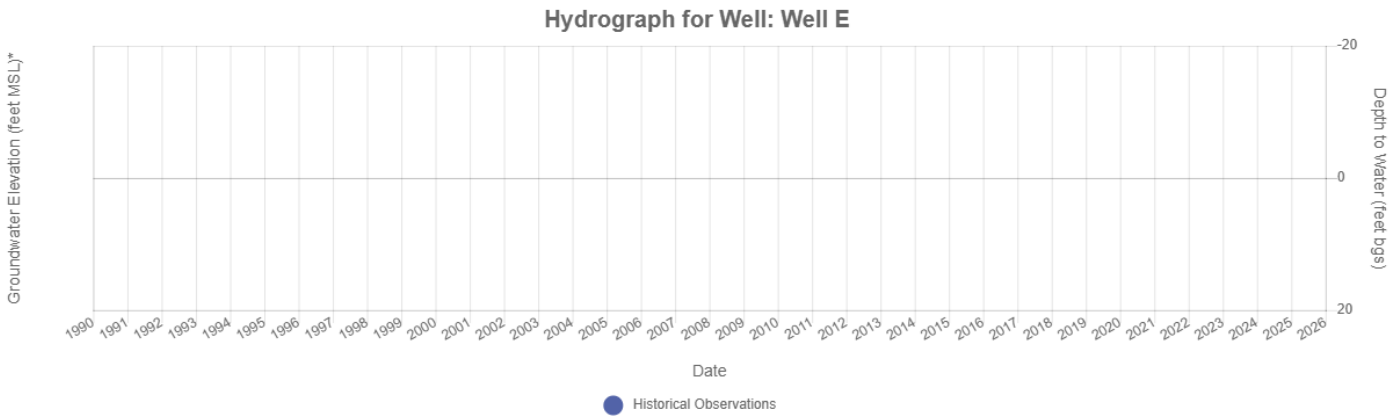
The following wells are new and therefore have no historical data. Monitoring will begin at these wells in WY 2025.

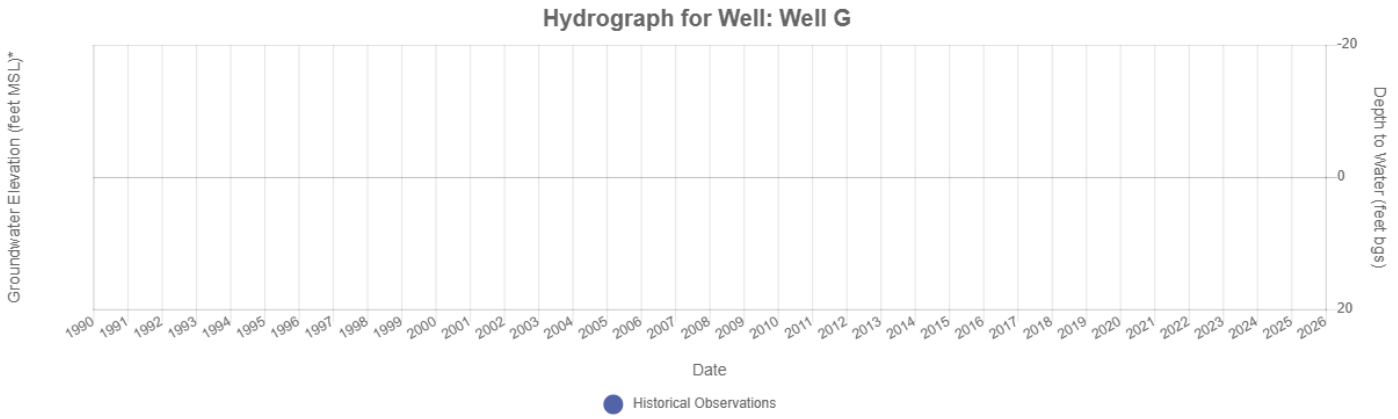

Hydrograph for Well: SEWD-01
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations


Hydrograph for Well: Well A
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations


Hydrograph for Well: Well B
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations


Hydrograph for Well: Well C
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations


Hydrograph for Well: Well E
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations


Hydrograph for Well: Well G
Groundwater Elevation (feet MSL)*
Depth to Water (feet bgs)
-20
0
20
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026
Date
Historical Observations

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Appendix C – WY 2024 Groundwater Level Monitoring Data

Site Code	Local Well Name	Measurement Date	No Measurement Code	Groundwater Elevation (feet msl)	Ground Surface to Water Surface (feet)	Reference Point Elevation (feet msl)	Ground Surface Elevation (feet msl)	Measurement Method Code	Measurement Accuracy	Collecting/Co-op Agency	Water Level Measurement Comments
378402N1208710W001	01S10E21A001M(P-02)	03/05/2024 09:00		81.315	144.825	226.315	226.14	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378402N1208710W001	01S10E21A001M(P-02)	11/14/2023 09:00		81.815	144.325	226.315	226.14	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378332N1209185W001	01S10E19L001M(OID14)	03/05/2024 11:30		50.4	99.47	150.4	149.87	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378332N1209185W001	01S10E19L001M(OID14)	11/14/2023 11:30		49.15	100.72	150.4	149.87	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
377860N1209016W001	02S10E05N001M (OID9)	03/05/2024 11:15	Can't get tape in casing			167.33	167.08			Oakdale Irrigation District GSA	Unable to be sounded due to suspected failed casing or collapsed well.
377860N1209016W001	02S10E05N001M (OID9)	11/14/2023 11:15	Can't get tape in casing			167.33	167.08			Oakdale Irrigation District GSA	Unable to be sounded due to suspected failed casing or collapsed well.
377909N1208675W001	Burnett (OID4)	03/05/2024 10:20		75.56	113.35	189.39	188.91	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
377909N1208675W001	Burnett (OID4)	11/14/2023 10:20		74.14	114.77	189.39	188.91	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378421N1209385W002	OID-15	03/05/2024 11:45		27.09	121.30	149.34	148.39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378421N1209385W002	OID-15	11/14/2023 11:45		24.34	124.05	149.34	148.39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378112N1208251W001	OID-17	03/05/2024 14:00		88.37	135.05	223.87	223.42	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378112N1208251W001	OID-17	11/14/2023 14:00		85.62	137.80	223.87	223.42	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378088N1208895W001	OID-16	03/05/2024 12:10	Can't get tape in casing			172.12	171.67			Oakdale Irrigation District GSA	Unable to be sounded due to failed casing.
378088N1208895W001	OID-16	11/14/2023 12:10		67.12	104.55	172.12	171.67	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	

378352N1209570W001	Hirschfield (OID8)	03/05/2024 14:30		29.29	106.77	136.54	136.06	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378352N1209570W001	Hirschfield (OID8)	11/14/2023 14:30		26.54	109.52	136.54	136.06	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378130N1209240W001	OID-5	03/05/2024 10:40		56.91	95.17	152.41	152.08	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378130N1209240W001	OID-5	11/14/2023 10:40		59.83	92.25	152.41	152.08	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
381552N1211380W001	#3 Bear Creek	04/16/2024 12:00		-54.3	150.0	95.7	95.7	Unknown	Water level accuracy is unknown	Lockeford Community Service District GSA	Data provided as part of WY 2024 annual report data request.
381552N1211380W001	#3 Bear Creek	10/18/2023 12:00		-61.3	157.0	95.7	95.7	Unknown	Water level accuracy is unknown	Lockeford Community Service District GSA	
381843N1212261W001	04N07E20H003M	09/06/2024 00:00		-37.499	114.416	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	08/12/2024 00:00		-39.559	116.476	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	07/08/2024 00:00		-36.259	113.176	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	07/08/2024 00:00		-36.259	113.176	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	06/04/2024 00:00		-30.759	107.676	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	06/04/2024 00:00		-30.759	107.676	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	05/07/2024 00:00		-29.659	106.576	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	04/16/2024 00:00		-29.259	106.176	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Run 16
381843N1212261W001	04N07E20H003M	03/08/2024 00:00		-30.329	107.246	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA

381843N1212261W001	04N07E20H003M	02/06/2024 00:00		-31.019	107.936	78.341	76.917	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
381843N1212261W001	04N07E20H003M	01/10/2024 00:00		-32.44	109.90	78.46	77.46	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
381843N1212261W001	04N07E20H003M	12/12/2023 00:00		-33.89	111.35	78.46	77.46	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
381843N1212261W001	04N07E20H003M	11/07/2023 00:00		-36.51	113.97	78.46	77.46	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
381843N1212261W001	04N07E20H003M	10/06/2023 00:00		-38.49	115.95	78.46	77.46	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
378312N1209797W001	01S09E21J002M	03/18/2024 13:00		13.9	108.5	123.9	122.4	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378312N1209797W001	01S09E21J002M	10/24/2023 13:00	Can't get tape in casing			123.9	122.4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381919N1212436W001	04N07E17N001M	03/12/2024 13:00		-33.5	103.0	70.2	69.5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381919N1212436W001	04N07E17N001M	10/17/2023 13:00		-64.8	134.3	70.2	69.5	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379428N1210162W001	01N09E17D001M	03/18/2024 13:00		-43.19	148.50	106.81	105.31	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379428N1210162W001	01N09E17D001M	10/16/2023 13:00	Tape hung up			106.81	105.31			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378189N1210150W001	01S09E29M002M	03/13/2024 13:00	Can't get tape in casing			105.89	105.39			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378189N1210150W001	01S09E29M002M	10/16/2023 13:00	Can't get tape in casing			105.89	105.39			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382107N1214297W001	04N05E10K001M	03/12/2024 13:00		1.86	6.80	9.86	8.66	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382107N1214297W001	04N05E10K001M	10/17/2023 13:00		-5.14	13.80	9.86	8.66	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

379133N1210282W001	01N09E30C005M	03/18/2024 13:00	Oil or foreign substance in casing	-43.7	139.7	96.3	96	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379133N1210282W001	01N09E30C005M	10/16/2023 13:00	Oil or foreign substance in casing	-63.7	159.7	96.3	96	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381016N1211791W001	03N07E23C002M	03/18/2024 13:00	Temporarily inaccessible			75.37	74.37			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381016N1211791W001	03N07E23C002M	10/17/2023 13:00		-89.63	164.00	75.37	74.37	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379200N1210700W001	01N08E22J001M	03/18/2024 13:00	Temporarily inaccessible			81.5	80			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379200N1210700W001	01N08E22J001M	10/17/2023 13:00	Temporarily inaccessible			81.5	80			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379782N1212375W001	02N07E32M002M	03/21/2024 13:00		-1.16	33.20	35.04	32.04	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379782N1212375W001	02N07E32M002M	10/17/2023 13:00		-8.56	40.60	35.04	32.04	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382041N1212799W001	04N06E12N002M	03/12/2024 13:00	Temporarily inaccessible			54.68	54.48			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382041N1212799W001	04N06E12N002M	10/18/2023 13:00		-50.32	104.80	54.68	54.48	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381990N1213727W001	04N05E13H001M	03/12/2024 13:00	Oil or foreign substance in casing	2.38	19.60	22.38	21.98	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381990N1213727W001	04N05E13H001M	10/17/2023 13:00	Oil or foreign substance in casing	-7.62	29.60	22.38	21.98	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379367N1210944W001	01N08E16H002M	03/18/2024 13:00		-52.15	134.40	83.75	82.25	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379367N1210944W001	01N08E16H002M	10/16/2023 13:00		-61.25	143.50	83.75	82.25	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

378562N1210588W001	01S08E14B001M	03/13/2024 13:00		-33.36	118.30	86.64	84.94	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378562N1210588W001	01S08E14B001M	10/16/2023 13:00	Oil or foreign substance in casing	-63.36	148.30	86.64	84.94	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379381N1210983W001	01N08E16G001M	03/18/2024 13:00		-53.65	135.40	82.55	81.75	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379381N1210983W001	01N08E16G001M	10/16/2023 13:00		-62.15	143.90	82.55	81.75	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379039N1210005W001	01N09E29R001M	03/18/2024 13:00	Oil or foreign substance in casing	-31.16	138.50	108.84	107.34	Steel tape measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379039N1210005W001	01N09E29R001M	10/16/2023 13:00	Oil or foreign substance in casing	-61.16	168.50	108.84	107.34	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381008N1210810W001	03N08E22A001M	03/12/2024 13:00	Can't get tape in casing			136.5	136.5			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381008N1210810W001	03N08E22A001M	10/16/2023 13:00		-83.5	220.0	136.5	136.5	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378734N1209447W001	01S09E02R001M	03/18/2024 13:00	Pumping			164.7	164.4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378734N1209447W001	01S09E02R001M	10/16/2023 13:00	Tape hung up			164.7	164.4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379061N1211661W001	01N07E26H003M	03/21/2024 13:00	Can't get tape in casing			53.23	52.23			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379061N1211661W001	01N07E26H003M	10/17/2023 13:00	Temporarily inaccessible			53.23	52.23			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379487N1211759W001	01N07E11L001M	03/21/2024 13:00	Pump house locked			55.14	52.14			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379487N1211759W001	01N07E11L001M	10/17/2023 13:00	Temporarily inaccessible			55.14	52.14			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

379370N1210162W001	01N09E17M001M	03/18/2024 13:00		-40.39	144.90	104.81	104.51	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379370N1210162W001	01N09E17M001M	10/16/2023 13:00		-47.29	151.80	104.81	104.51	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379472N1210711W001	01N08E11L001M	03/18/2024 13:00		-57.6	137.6	81	80	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379472N1210711W001	01N08E11L001M	10/17/2023 13:00		-67.5	147.5	81	80	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
377708N1211790W001	02S07E11N002M	03/13/2024 13:00		27.05	21.30	49.35	48.35	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
377708N1211790W001	02S07E11N002M	10/16/2023 13:00		24.35	24.00	49.35	48.35	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381559N1213727W001	04N05E36H003	03/12/2024 13:00		6.23	17.20	24.93	23.43	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381559N1213727W001	04N05E36H003	10/17/2023 13:00	Temporarily inaccessible			24.93	23.43			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381816N1213723W001	04N05E24J004	03/12/2024 13:00		8.4	14.0	23.8	22.4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381816N1213723W001	04N05E24J004	10/17/2023 13:00		3.8	18.6	23.8	22.4	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381024N1211355W001	Harney MW-1	04/03/2024 10:23	Special/Other			109.24	107.89			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381024N1211355W001	Harney MW-1	10/03/2023 09:38	Special/Other			109.24	107.89			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381317N1213524W001	03N06E05N003	03/21/2024 13:00		-12.07	39.50	27.93	27.43	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381317N1213524W001	03N06E05N003	10/17/2023 13:00	Oil or foreign substance in casing	-22.07	49.50	27.93	27.43	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380964N1211407W001	Harney MW-4	04/03/2024 09:35	Special/Other			97.59	96.61			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380964N1211407W001	Harney MW-4	10/03/2023 08:58	Special/Other			97.59	96.61			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380962N1210966W001	North G-1	04/02/2024 13:00	Special/Other			120.95	120.95			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380962N1210966W001	North G-1	10/24/2023 13:00	Special/Other			120.95	120.95			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380971N1211057W001	North G-5	04/02/2024 10:09	Special/Other			117.35	117.35			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380971N1211057W001	North G-5	10/24/2023 09:57	Special/Other			117.35	117.35			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380982N1211333W001	Harney MW-2	04/03/2024 10:07	Special/Other			101.36	100.47			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380982N1211333W001	Harney MW-2	10/03/2023 09:25	Special/Other			101.36	100.47			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380926N1211057W001	North G-6	04/02/2024 10:37		-49.48	159.10	112.12	109.62	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380926N1211057W001	North G-6	10/24/2023 10:21	Special/Other			112.12	109.62			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380951N1211370W001	Harney MW-3	04/03/2024 09:51	Special/Other			96.66	95.8			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380951N1211370W001	Harney MW-3	10/03/2023 09:12	Special/Other			96.66	95.8			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380960N1211057W001	North G-3D	04/02/2024 10:16		-55.24	169.30	114.06	114.06	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380960N1211057W001	North G-3D	10/24/2023 10:03		-55.94	170.00	114.06	114.06	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380943N1211057W001	North G-4	04/02/2024 10:22	Special/Other			117.35	117.35			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380943N1211057W001	North G-4	10/24/2023 10:10	Special/Other			117.35	117.35			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W001	STK2-1	03/05/2024 13:00		-39.3	66.3	27.1	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W001	STK2-1	10/26/2023 13:00		-45.3	72.3	27.1	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380578N1212017W001	02N07E03D001	03/21/2024 13:00		-62.73	119.00	57.27	56.27	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380578N1212017W001	02N07E03D001	10/23/2023 13:00	Temporarily inaccessible			57.27	56.27			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W002	STK2-3	03/05/2024 13:00		-30.52	57.52	27.08	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W002	STK2-3	10/26/2023 13:00		-34.02	61.02	27.08	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W003	STK2-4	03/05/2024 13:00		-29.05	56.05	27.15	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380561N1212772W003	STK2-4	10/26/2023 13:00		-33.25	60.25	27.15	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380362N1209379W001	Foothill MW-3	04/04/2024 10:23		-32.38	285.90	256.52	253.52	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380362N1209379W001	Foothill MW-3	10/23/2023 09:31		-32.28	285.80	256.52	253.52	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380313N1209362W001	Foothill MW-2R	04/04/2024 09:10		27.82	268.80	299.62	296.62	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380313N1209362W001	Foothill MW-2R	10/23/2023 08:31		28.02	268.60	299.62	296.62	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380402N1209279W001	Foothill MW-1	04/04/2024 09:56	Special/Other			258.43	253.43			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380402N1209279W001	Foothill MW-1	10/23/2023 09:00	Special/Other			258.43	253.43			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380438N1214959W001	DWS-IPS	03/12/2024 13:00	Temporarily inaccessible			14.83	14.04			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380438N1214959W001	DWS-IPS	10/18/2023 13:00		-4.37	18.41	14.83	14.04	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380078N1211315W001	C-1	03/12/2024 13:00	Tape hung up			75.5	74			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380078N1211315W001	C-1	10/16/2023 13:00	Temporarily inaccessible			75.5	74			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1212772W001	STK2-2	03/05/2024 13:00		-38.67	65.67	27.13	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1212772W001	STK2-2	10/26/2023 13:00		-43.77	70.77	27.13	27	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1213481W002	STK5-3	03/05/2024 13:00		-15.01	18.01	2.09	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1213481W002	STK5-3	10/17/2023 13:00		-16.81	19.81	2.09	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1213481W001	STK5-2	03/05/2024 13:00		-17.72	20.72	1.98	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380292N1213481W001	STK5-2	10/17/2023 13:00		-19.72	22.72	1.98	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379976N1212308W001	02N07E29B001	03/21/2024 13:00	Temporarily inaccessible			43.57	42.07			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379976N1212308W001	02N07E29B001	10/17/2023 13:00	Temporarily inaccessible			43.57	42.07			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380067N1213458W003	Swenson-3	03/04/2024 13:00		-10	14	4	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380067N1213458W003	Swenson-3	10/18/2023 13:00		-11.2	15.2	4	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380067N1213458W002	Swenson-2	03/04/2024 13:00	Temporarily inaccessible			4	4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380067N1213458W002	Swenson-2	10/18/2023 13:00	Temporarily inaccessible			4	4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380067N1213458W001	Swenson-1	03/04/2024 13:00		-11.5	15.5	4	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380067N1213458W001	Swenson-1	10/18/2023 13:00		-13.7	17.7	4	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W003	STK6-3	03/06/2024 13:00		-8.01	13.01	4.59	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W003	STK6-3	10/17/2023 13:00		-15.31	20.31	4.59	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W002	STK6-2	03/06/2024 13:00		-13.24	18.24	4.66	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W002	STK6-2	10/17/2023 13:00		-15.74	20.74	4.66	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W001	STK6-1	03/06/2024 13:00		-15.22	20.22	4.68	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379949N1213426W001	STK6-1	10/17/2023 13:00		-16.72	21.72	4.68	5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W004	STK-7.4	03/07/2024 13:00		2.66	36.34	38.76	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W004	STK-7.4	10/26/2023 13:00		6.26	32.74	38.76	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

379815N1212032W001	STK-4-1	03/04/2024 13:00		-7.43	15.43	7.57	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379815N1212032W001	STK-4-1	10/17/2023 13:00		-9.33	17.33	7.57	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379815N1212032W002	STK-4-2	03/04/2024 13:00		-3.97	11.97	7.43	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379815N1212032W002	STK-4-2	10/17/2023 13:00		-4.87	12.87	7.43	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W002	STK-7.2	03/07/2024 13:00		-41.33	80.33	38.67	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W002	STK-7.2	10/26/2023 13:00		-75.83	114.83	38.67	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W003	STK-7.3	03/07/2024 13:00		-26.28	65.28	38.72	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W003	STK-7.3	10/26/2023 13:00		-41.98	80.98	38.72	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W001	STK-7.1	03/07/2024 13:00		-43.56	82.56	38.74	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379814N1212031W001	STK-7.1	10/26/2023 13:00		-73.46	112.46	38.74	39	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379600N1213136W001	STK-4-3	03/04/2024 13:00		0.89	7.11	7.59	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379600N1213136W001	STK-4-3	10/17/2023 13:00		-1.81	9.81	7.59	8	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379661N1210011W001	01N09E05J001	03/19/2024 13:00		-32.49	190.80	155.81	158.31	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379661N1210011W001	01N09E05J001	10/17/2023 13:00		-44.19	202.50	155.81	158.31	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

379316N1211665W001	01N07E14J002	03/24/2024 13:00	Oil or foreign substance in casing	-66.41	118.30	53.59	51.89	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379316N1211665W001	01N07E14J002	10/17/2023 13:00	Oil or foreign substance in casing	-76.41	128.30	53.59	51.89	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379209N1212476W001	01N07E19G001	03/21/2024 13:00	Temporarily inaccessible			26.1	25.6			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
379209N1212476W001	01N07E19G001	10/17/2023 13:00	Temporarily inaccessible			26.1	25.6			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W003	Sperry-3	03/07/2024 13:00		0.1	14.9	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W003	Sperry-3	10/25/2023 13:00		-3.5	18.5	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W002	Sperry-2	03/07/2024 13:00		-2.3	17.3	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W002	Sperry-2	10/25/2023 13:00		-5.8	20.8	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W001	Sperry-1	03/07/2024 13:00		-7.1	22.1	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378972N1212936W001	Sperry-1	10/25/2023 13:00		-11.5	26.5	15	15	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378824N1210000W001	01S09E05H002	03/18/2024 13:00		-21.65	129.00	108.35	107.35	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
378824N1210000W001	01S09E05H002	10/16/2023 13:00		-51.65	159.00	108.35	107.35	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
377136N1212508W001	02S07E31N001	03/13/2024 13:00		16.36	9.00	26.36	25.36	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
377136N1212508W001	02S07E31N001	10/16/2023 13:00		13.36	12.00	26.36	25.36	Steel tape measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

377810N1211142W001	02S08E08A001	03/13/2024 13:00	Temporarily inaccessible			74.36	73.36			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
377810N1211142W001	02S08E08A001	10/16/2023 13:00	Temporarily inaccessible			74.36	73.36			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381130N1214087W001	Lodi WSM 19	03/20/2024 13:00		3.35	3.00	6.35	6.35	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381130N1214087W001	Lodi WSM 19	10/25/2023 13:00		3.35	3.00	6.35	6.35	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380943N1213991W001	Lodi WSM 15	03/20/2024 13:00		2.72	5.00	7.72	7.72	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380943N1213991W001	Lodi WSM 15	10/25/2023 13:00		-0.08	7.80	7.72	7.72	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380751N1213908W001	Lodi WSM 13	03/20/2024 13:00		-2.06	6.00	3.94	3.94	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380751N1213908W001	Lodi WSM 13	10/25/2023 13:00		-7.16	11.10	3.94	3.94	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381160N1213339W001	Lodi WSM 17	03/19/2024 13:00		-7.92	36.30	28.38	28.38	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381160N1213339W001	Lodi WSM 17	10/25/2023 13:00		-11.82	40.20	28.38	28.38	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380880N1213523W001	Lodi WSM 11	03/19/2024 13:00		-14.37	28.40	14.03	14.03	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380880N1213523W001	Lodi WSM 11	10/25/2023 13:00		-20.27	34.30	14.03	14.03	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380982N1213658W001	Lodi WSM 10	03/19/2024 13:00		-9.79	22.30	12.51	12.51	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380982N1213658W001	Lodi WSM 10	10/25/2023 13:00		-13.69	26.20	12.51	12.51	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380799N1213850W001	Lodi WSM 05	03/20/2024 13:00		-3.08	9.90	6.82	6.82	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380799N1213850W001	Lodi WSM 05	10/25/2023 13:00		-3.68	10.50	6.82	6.82	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380877N1213898W001	Lodi WSM 02	03/26/2024 13:00	Measurement Discontinued			7.43	7.43			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380877N1213898W001	Lodi WSM 02	10/25/2023 13:00	Special/Other			7.43	7.43			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380986N1213869W001	Lodi WSM 01	03/20/2024 13:00		-0.79	11.20	10.41	10.41	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381164N1212792W004	Lodi WMW-2D	03/26/2024 13:00		-15.24	57.02	41.56	41.78	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381164N1212792W003	Lodi WMW-2C	03/26/2024 13:00		-14.92	56.70	41.68	41.78	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381164N1212792W002	Lodi WMW-2B	03/26/2024 13:00		-14.79	56.57	41.71	41.78	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381203N1212787W003	Lodi WMW-1C	03/26/2024 13:00		-11.97	54.16	42.03	42.19	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381164N1212792W001	Lodi WMW-2A	03/26/2024 13:00		-14.62	56.40	41.78	41.78	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381203N1212787W002	Lodi WMW-1B	03/26/2024 13:00		-12.01	54.20	42.19	42.19	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381147N1212722W002	Lodi SMW-1B	03/27/2024 13:00		-18.6	63.45	44.8	44.85	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381203N1212787W001	Lodi WMW-1A	03/26/2024 13:00		-11.97	54.16	42.13	42.19	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
380794N1214137W001	Lodi RMW2	03/26/2024 13:00	Measurement Discontinued			-0.59	-0.59			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

380794N1214137W001	Lodi RMW2	10/25/2023 13:00		-7.99	7.40	-0.59	-0.59	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381147N1212722W001	Lodi SMW-1A	03/27/2024 13:00		-18.6	63.45	44.8	44.85	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381269N1212711W003	Lodi MW-24C	04/18/2024 13:00		-7.32	56.87	49.38	49.55	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381292N1212757W002	Lodi MW-25C	03/27/2024 13:00		-2.93	49.99	46.97	47.06	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381292N1212757W001	Lodi MW-25B	03/27/2024 13:00		-3.04	50.10	47.06	47.06	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381227N1212718W003	Lodi MW-21C	03/26/2024 13:00		-11.88	57.88	45.92	46	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381269N1212711W001	Lodi MW-24A	04/18/2024 13:00		-7.25	56.80	49.55	49.55	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381269N1212711W002	Lodi MW-24B	04/18/2024 13:00		-7.39	56.94	49.41	49.55	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381227N1212718W002	Lodi MW-21B	03/26/2024 13:00		-11.88	57.88	45.92	46	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W005	STK1-4	03/06/2024 13:00		-9.44	13.44	4.46	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W005	STK1-4	10/23/2023 13:00		-11.24	15.24	4.46	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W004	STK1-3	03/06/2024 13:00		-9.96	13.96	4.44	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W004	STK1-3	10/23/2023 13:00		-12.86	16.86	4.44	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381227N1212718W001	Lodi MW-21A	03/26/2024 13:00		-11.9	57.9	46	46	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin

381211N1212856W001	Lodi MW-16	03/26/2024 13:00	Measurement Discontinued			39.19	39.19			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381181N1212736W001	Lodi MW-19	03/27/2024 13:00		-15.67	60.90	45.23	45.23	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W002	STK1-5	03/06/2024 13:00	Temporarily inaccessible			4.42	4			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W002	STK1-5	10/23/2023 13:00		-9.28	13.28	4.42	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W001	STK1-1	03/06/2024 13:00		-24.34	28.34	4.46	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W001	STK1-1	10/23/2023 13:00		-27.34	31.34	4.46	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381291N1212688W001	Lodi MW-13	03/26/2024 13:00	Measurement Discontinued			49.61	49.61			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W003	STK1-2	03/06/2024 13:00		-13.41	17.41	4.49	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
385330N1213710W003	STK1-2	10/23/2023 13:00		-15.51	19.51	4.49	4	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381338N1212785W001	Lodi MW-08	04/18/2024 13:00		2.54	43.00	45.54	45.54	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381287N1212851W001	Lodi MW-11	03/26/2024 13:00	Measurement Discontinued			41.11	41.11			County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382476N1213481W001	STK5-1	03/05/2024 13:00		-19.78	22.78	2.02	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
382476N1213481W001	STK5-1	10/17/2023 13:00		-21.98	24.98	2.02	3	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	County of San Joaquin GSA - Eastern San Joaquin 1	ESJ Subbasin
381376N1212740W001	Lodi City Well #2	03/12/2024 12:00		2.94	48.00	50.94	50.94	Unknown	Water level accuracy is unknown	City of Lodi GSA	Data provided as part of WY 2024 annual report data request.

381376N1212740W001	Lodi City Well #2	11/28/2023 12:00		2.94	48.00	50.94	50.94	Unknown	Water level accuracy is unknown	City of Lodi GSA	Data provided as part of WY 2024 annual report data request.
377843N1208435W001	02S10E02P001M	09/30/2024 08:30		81.55	110.95	193.5	192.5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Access through 45 degree galvanized pipe access port.
377843N1208435W001	02S10E02P001M	04/17/2024 09:15		85.9	106.6	193.5	192.5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Access through 45 degree galvanized pipe access port.
377766N1208657W001	02S10E10M002M	09/30/2024 11:24		67.66	44.82	113.98	112.48	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Access through washerless square cap bolt on top of surface cover seal
377766N1208657W001	02S10E10M002M	04/17/2024 12:00		73.31	39.17	113.98	112.48	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Access through washerless square cap bolt on top of surface cover seal
378402N1208710W001	01S10E21A001M(P-02)	03/05/2024 09:00		81.315	144.825	226.315	226.14	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378402N1208710W001	01S10E21A001M(P-02)	11/14/2023 09:00		81.815	144.325	226.315	226.14	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Oakdale Irrigation District GSA	
378163N1208321W001	01S10E26J001M	09/30/2024 08:45		75.59	136.91	212.5	212.5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Easy access through hole in motor mount deck
378163N1208321W001	01S10E26J001M	04/17/2024 09:32		78.64	133.86	212.5	212.5	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Easy access through hole in motor mount deck
377985N1208524W001	01S10E34R001M	09/30/2024 11:05		68.34	151.15	219.49	219.49	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Perles Pump. Use large square threaded cap on motor mount for access.
377985N1208524W001	01S10E34R001M	04/17/2024 11:36		72.47	147.02	219.49	219.49	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Perles Pump. Use large square threaded cap on motor mount for access.
378138N1208591W001	01S10E27Q001M	09/30/2024 10:45		66.37	136.11	202.48	202.48	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Perles Pump. Use large square threaded cap on motor mount for access. Gate Access CODE: #56710 Owners: Gary/Norma Harmelink 996-4492 (Gary cell) or 847-2103 (LAN house)
378138N1208591W001	01S10E27Q001M	04/17/2024 11:15		69.39	133.09	202.48	202.48	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Perles Pump. Use large square threaded cap on motor mount for access. Gate Access CODE: #56710 Owners: Gary/Norma

											Harmelink 996-4492 (Gary cell) or 847-2103 (LAN house)
378846N1208816W001	01S10E04C001M	09/30/2024 09:51		54.46	105.96	163.42	160.42	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Easy access
378846N1208816W001	01S10E04C001M	04/17/2024 10:45		57.84	102.58	163.42	160.42	Electric sounder measurement	Water level accuracy to nearest tenth of a foot	Eastside San Joaquin GSA	Easy access
378846N1208816W001	01S10E04C001M	03/12/2024 11:47		52.82	107.60	163.42	160.42	Steel tape measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
378846N1208816W001	01S10E04C001M	10/09/2023 13:18		44.52	115.90	163.42	160.42	Steel tape measurement	Water level accuracy to nearest tenth of a foot	Department of Water Resources	Changed DWR Program from CASGEM to SGMA
381986N1209661W001	CCWD 015	06/18/2024 00:00	Pump house locked			242.33	240			Eastside San Joaquin GSA	Well locked, not accessible by NV5
381628N1209292W003	CCWD 012	06/18/2024 14:30		146.49	76.51	222.1	223	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5; CCNA #3 (115-135)
381042N1209111W001	CCWD 009	06/18/2024 00:00	Special/Other			195.2	194			Eastside San Joaquin GSA	Dry
381272N1209322W003	CCWD 006	06/18/2024 00:00	Temporarily inaccessible			229.2	230			Eastside San Joaquin GSA	Collected by NV5, Confirmed access 6/17/24 but could not reach via phone on 6/18/24 to access site.
380914N1209167W001	CCWD 003	06/18/2024 00:00	Measurement Discontinued			273.7	273			Eastside San Joaquin GSA	Collected by NV5, Water sounding tube needs to be replaced
381783N1208162W001	CCWD 017	03/27/2024 12:00		717.23	19.81	738.41	737.04	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by CondorEarth, La Contenta WWTP
381272N1209322W004	CCWD 007	06/18/2024 00:00	Temporarily inaccessible			229.2	230			Eastside San Joaquin GSA	Collected by NV5, Confirmed access 6/17/24 but could not reach via phone on 6/18/24 to access site.
380867N1209233W001	CCWD 008	06/18/2024 12:29		72.35	156.65	229.7	229	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5
381511N1209406W001	CCWD 014	06/18/2024 00:00	Other	128.71	269.29	398.71	398	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5; Instrument error, estimated

381042N1208903W001	CCWD 001	06/18/2024 00:00	Can't get tape in casing			273.5	272			Eastside San Joaquin GSA	Collected by NV5, Well Dry
381272N1209322W002	CCWD 005	06/18/2024 00:00	Temporarily inaccessible			229.2	230			Eastside San Joaquin GSA	Collected by NV5, Confirmed access 6/17/24 but could not reach via phone on 6/18/24 to access site.
381272N1209322W001	CCWD 004	06/18/2024 00:00	Temporarily inaccessible			229.2	230			Eastside San Joaquin GSA	Collected by NV5, Confirmed access 6/17/24 but could not reach via phone on 6/18/24 to access site.
381628N1209292W002	CCWD 011	06/18/2024 14:38		88.9	134.1	222.1	223	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5; CCNA #2 (250-270)
381036N1208903W001	CCWD 002	06/18/2024 00:00		67.5	204.5	273.5	272	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5
381628N1209292W001	CCWD 010	06/18/2024 14:46		95.75	127.25	222.1	223	Electric sounder measurement	Water level accuracy to nearest hundredth of a foot	Eastside San Joaquin GSA	Collected by NV5; CCNA #1 (370-390)