CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

STANDING ADVISORY COMMITTEE MEETING

Committee Members

Brenton Kelly (Chair)	Jean Gaillard	Karen Adams
Brad DeBranch (Vice Chair)	Joe Haslett	John Caufield
Jake Furstenfeld	Roberta Jaffe	David Lewis

AGENDA

February 29, 2024

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee meeting to be held on Thursday, February 29, 2024, at 5:00 PM at the **Cuyama Valley Family Resource Center 4689 CA-166, New Cuyama, CA 93254**. Participate via computer at: https://rb.gy/c490p or by going to Microsoft Teams, downloading the free application, then entering Meeting ID: 290 937 651 464 Passcode: z8mi9V, or telephonically at (469) 480-3918, Phone Conference ID: 588 047 246#.

The order in which agenda items are discussed may be changed to accommodate scheduling or other needs of the Committee, the public or meeting participants. Members of the public are encouraged to arrive at the commencement of the meeting to ensure that they are present for Committee discussion of all items in which they are interested.

Teleconference Locations:

4689 CA-166 New Cuyama, CA 93254	144 De La Costa Ave, Santa Cruz, CA 95060	11601 Bolthouse Drive, Suite 200 Bakersfield, CA 93311

In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations, including auxiliary aids or services, to participate in this meeting, please contact Taylor Blakslee at (661) 477-3385 by 4:00 p.m. on the Wednesday prior to this meeting. The Cuyama Basin Groundwater Sustainability Agency reserves the right to limit each speaker to three (3) minutes per subject or topic.

1. Call to Order (Kelly) (1 min)
2. Roll Call (Kelly) (1 min)
3. Pledge of Allegiance (Kelly) (2 min)
4. Meeting Protocols (Blakslee) (2 min)

ACTION ITEMS

5. Approval of January 4, 2024, Minutes (Kelly) (3 min)
6. Groundwater Sustainability Plan Implementation
   a) Discuss and Take Appropriate Action on Water Year 2023 Annual Report (Blakslee/Van Lienden) (10 min)
   b) Discuss and Take Appropriate Action on 2023 Central Management Area Allocation Use (Blakslee/Dominguez) (45 min)
   c) Discuss and Take Appropriate Action on Land IQ Scope to Identify Unknown Pumpers and Improve the Groundwater Model (Blakslee) (10 min)
7. Groundwater Sustainability Plan Amendment Components
   a) Update on GSP Components Schedule (Blakslee/Van Lienden) (5 min)
   b) Discuss and Take Appropriate Action on Project and Management Action Options (Van

Lienden/Blakslee) (30 min)

c) Discuss and Take Appropriate Action on Sustainable Yield Methodology (Van Lienden/Blakslee) (30 min)

d) Discuss and Take Appropriate Action on Basin-Wide Water Management ***and*** Allocation Program Components (Continued Discussion) (Blakslee/Van Lienden) (75 min)

e) Direction on Remaining Public Workshops (Blakslee/Van Lienden) (5 min)

REPORT ITEMS

8. Technical Updates
   a. Update on Groundwater Sustainability Plan Activities (Van Lienden) (2 min)
   b. Update on Grant-Funded Projects (Van Lienden) (5 min)
   c. Update on January 2024 Groundwater Levels Conditions Report (Van Lienden) (5 min)
9. Administrative Updates
   a. Report of the Executive Director (Blakslee) (1 min)
   b. Report of the General Counsel (Dominguez) (1 min)
   c. Board of Directors Agenda Review (Blakslee) (3 min)
10. Items for Upcoming Sessions (1 min)
11. Committee Forum (1 min)
12. Public Comment for Items Not on the Agenda

    At this time, the public may address the Committee on any item not appearing on the agenda that is within the subject matter jurisdiction of the Committee.

13. Correspondence (1 min)
14. Adjourn (8:54 p.m.)

2024 Board Ad hocs

1	**GSP Amendment**	Albano Paulding Williams, Das Wooster Yurosek
2	**Basin-Wide Water Management Policy**	Anselm Bantilan Williams, Deborah Yurosek
3	**Central Management Area Policy**	Anselm Bantilan Vickery Williams, Deborah Wooster
4	**Grant-Funded Items**	Albano Vickery Williams, Das Williams, Deborah
5	**Unknown Extractors**	Anselm Vickery

Tech Forum Participants

Participants	**Entity**	**Representing**
Neil Currie	Cleath-Harris	Grapevine Capital
Matt Klinchuch	Cuyama Basin Water District	Cuyama Basin Water District
Jeff Shaw John Fio Karthik Ramesh	EKI	Cuyama Basin Water District
Matt Young Matt Scrudato	Santa Barbara County Water Agency	Santa Barbara County
Bianca Cabera Steve Johnson Jeff Helsley	Stetson Engineers	Sunrise Olive

Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee Meeting

January 4, 2024

Draft Meetings Minutes

PRESENT:
Kelly, Brenton – Chair
DeBranch, Brad – Vice Chair
Adams, Karen
Caufield, John
Furstenfeld, Jake
Gaillard, Jean
Haslett, Joe
Jaffe, Roberta
Lewis, David

Beck, Jim – Executive Director
Blakslee, Taylor – Assistant Executive Director
Dominguez, Alex – Legal Counsel
Van Lienden, Brian – Woodard & Curran
Eggleton, Micah – Woodard & Curran

ABSENT:
None

1. **Call to Order**
   Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) Chair Kelly called the meeting to order at 5:00 p.m.

2. **Roll Call**
   Assistant Executive Director Taylor Blakslee called roll of the Committee (shown above).

3. **Pledge of Allegiance**
   Chair Kelly led the pledge of allegiance.

4. **Meeting Protocols**
   Mr. Blakslee provided an overview of the meeting protocols.

ACTION ITEMS

5. **Election of Officers**
   CBGSA Executive Director Jim Beck presented options to either elect the current slate of officers for 2024 or consider other nominees. Current Chair Kelly and Vice Chair DeBranch said they were willing to continue to serve.

MOTION
Committee Member Lewis made a motion to appoint the current officers to continue serving as Chair and Vice Chair. The motion was seconded by Committee Member Jaffe, a roll call vote was made, and the motion passed.

AYES: Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES: None
ABSTAIN: None
ABSENT: None

Committee Member Haslett commented he does not believe Vice Chair DeBranch should be on the SAC due to not residing in Cuyama and it is not appropriate for Vice Chair DeBranch to be an alternate on the Board.

6. Approval of Minutes
Chair Kelly opened the floor for comments on the October 26, 2023, CBGSA SAC meeting minutes.

MOTION
Committee Member Jaffe made a motion to approve the October 26, 2023, CBGSA SAC meeting minutes. The motion was seconded by Committee Member Adams, a roll call vote was made, and the motion passed.

AYES: Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES: None
ABSTAIN: None
ABSENT: None

7. Groundwater Sustainability Plan Amendment Components

a. Update on GSP Components Schedule
Mr. Beck reviewed the Groundwater Sustainability Plan (GSP) components schedule which is provided in the SAC packet and indicated everything is on schedule except for discussions related to interconnected surface water (ISW) which has been delayed due to the California Department of Water Resources (DWR) providing criteria for ISWs later in 2024.

b. Discuss and Take Appropriate Action on Sustainable Management Criteria and Undesirable Results for:

i. Groundwater Levels
Mr. Van Lienden reviewed the options for groundwater levels sustainability criteria for minimum thresholds (MT) which is included in the SAC packet.

Committee Member Jaffe asked if there are any data gaps in the groundwater level monitoring network. Mr. Van Lienden replied that grant-funded monitoring wells have largely filled in the monitoring data gaps.

Chair Kelly asked if the new evaluation tool for well protection depth is commonly used in other GSA's. Mr. Van Lienden replied this tool is consistent with what other GSA's are

doing.

Committee Member Jaffe asked if the tool will be used for every active well in the basin. Mr. Van Lienden replied the tool was used for every active well in the basin.

A local Cuyama stakeholder asked how the methodology handles outliers in option 2. Mr. Van Lienden replied if a well is determined to be dry in 2015 the well will be removed, and the raster will only be used at the locations of the representative wells.

Stakeholder Mark Ellsworth asked what data staff has on production regarding maintenance. Mr. Van Lienden replied staff does not have this information for the wells.

Committee Member Lewis asked if the well protection depth will be listed in the GSP for each individual well. Mr. Van Lienden replied staff did not anticipate releasing that information but could do so if directed to.

Committee Member Haslett commented that the horsepower on the pump is not being accounted for and it is important to consider this information.

Committee Member Jaffe asked what the purpose of the minimum thresholds is if not to protect wells from going dry. Mr. Blakslee replied the purpose of minimum thresholds is to protect all beneficial uses and users.

Committee Member Furstenfeld asked if there is anything wrong with the current methodology and what would be the benefit of using any of the new proposed methodologies. Mr. Beck replied the original methodology was used because there was minimal data available, and a tool was created to overcome the lack of data. Mr. Beck continued to say the GSA now has more data available to establish a new methodology.

Committee Member Caufield asked how the ten foot buffer is defined for the well protection depth. Mr. Beck replied it was based on the location of the pump not the water level, meaning if the pump is 100 feet, then the well protection depth would be set at 90 feet.

Committee Member Gaillard commented that ten feet is not a big enough buffer because if water level reaches that level, then many pumpers would need to turn off their pump due to the drawdown of the pump.

Stakeholder Rachel H. asked how many wells were removed from the well protection depth. Mr. Van Lienden replied the map showing the well protection depth selection process shows all the wells removed.

Committee Member Caufield asked what differentiates a well from being classified as a production or domestic well. Mr. Van Lienden replied all wells reported as domestic are classified as domestic and all other wells are classified as production wells.

Committee Member Adams commented she is concerned with option three since the glidepath will probably look different once the new information is analyzed.

Committee Member Haslett commented that the glidepath is only for the Central Management Area (CMA).

Committee Member Gaillard commented he does not agree with the comment that there wasn't enough data to set the existing methodology and strongly recommends keeping the existing methodology.

Committee Member Jaffe asked if groundwater dependent ecosystem (GDE) can be considered with the other options. Mr. Van Lienden replied GDEs are part of option four.

Committee Member Jaffe asked for wells 841 and 845 to be considered for GDE protection. Mr. Van Lienden replied these wells are not close enough to GDEs.

Committee Member Gaillard commented it will be difficult to treat all the wells the same when there are significant differences across the Basin.

Vice Chair DeBranch commented it is important to remember the new methodologies are being developed with more complete data.

Committee Member Jaffe commented that the hybrid model seems the closest to the existing MT when comparing the different options in the graphs.

Committee Member Gaillard agreed option four is similar to the current MT and therefore there should be no change.

Committee Member Jaffe asked why more wells would be at risk of going dry if the current MT is more conservative. Mr. Beck responded the current MT has at least twelve areas that do not offer sufficient protection and will likely go dry.

Committee Member Gaillard commented that the water quality gets worse the deeper the water levels are and this is not taken into account in the options that are presented.

Chair Kelly commented there has not been management action taken for the 16 wells that have exceeded the MT and asked if there will be any management actions for wells that exceed the MT in the future. Mr. Blakslee replied some MT levels were set so tight that a slight change in water levels would exceed the MT. Mr. Beck commented management actions will need to be established to address any material impact.

Stakeholder Lynn Carlisle asked if there is an analysis of how the different MT options affect the glidepath. Mr. Van Lienden replied option three takes this into account.

Stakeholder Lynn Carlisle asked how the different options affect the glidepath since a lower MT will allow more pumping. Mr. Beck replied the glidepath is independent of MT and minimum objectives (MO). He continued to say the model generates the end point of the sustainable yield and MT can be helpful in indicating the progress toward sustainability.

Stakeholder Lynn Carlisle commented that the GSA needs to be aware of any action they take and its effect on groundwater storage and recommends the SAC make a motion to stay with the current MT.

Stakeholder Rachel H. commented it is important to consider how the lower groundwater elevations will impact future generations.

Vice Chair DeBranch made a motion to pursue option two or four. There was no second.

Committee Member Jaffe made a motion to use option four basin wide with a buffer larger than 10 feet and including strict protections for GDEs. Committee Member Haslett seconded the motion. Both Committee Members withdrew their motion.

Committee Member Furstenfeld agreed there needs to be a buffer greater than 10 feet.

MOTION
Committee Member Jaffe made a motion to set the sustainable management criteria using hybrid option four for all wells in the basin including strict protections for GDEs with the following exclusions, first increase the well protection buffer to a minimum of forty feet above the pump depth, and secondly remove the saturated thickness methodology. The motion was seconded by Committee Member Gaillard, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, Gaillard, Jaffe, Kelly
NOES:	Lewis, Haslett, Furstenfeld, DeBranch
ABSTAIN:	None
ABSENT:	None

Mr. Van Lienden reviewed the options for groundwater levels sustainability criteria for MO which is included in the SAC packet.

MOTION
Committee Haslett made a motion to approve option three which is to retain existing margin operational flexibility with MO level adjusted for new MT and the Margin of Operational Flexibility must be at least ten feet. The motion was seconded by Committee Member Adams, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	None
ABSTAIN:	None
ABSENT:	None

Mr. Van Lienden reviewed the options for groundwater levels undesirables results definition which is provided in the SAC packet.

Committee Member Jaffe commented it would be best to keep it at the existing definitions.

MOTION
Committee Member Furstenfeld made a motion to keep the existing definitions for groundwater levels undesirable results. The motion was seconded by Committee Member Gaillard, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	DeBranch
ABSTAIN:	None
ABSENT:	None

ii. Groundwater Storage

Mr. Van Lienden reviewed the GSP approach and potential options which is included in the SAC packet.

Chair Kelly asked if the model is generating the data for the change in storage. Mr. Van Lienden replied that is correct.

Stakeholder Lynn Carlisle asked if there should be sustainable management criteria on the groundwater storage since it is continuously reducing. Mr. Van Lienden replied the model can be used to estimate the change in groundwater storage but it is difficult to rely on the model to determine the groundwater storage and continued to say there is a connection in groundwater level and groundwater storage.

Stakeholder Adam Lovgren commented using groundwater levels as a proxy may not be perfect but it is currently the best option available.

Committee Member Haslett commented there is a significant elevation change from the mountains to the center of the basin and because of this when it rains the water runs down to the central management area. He said because of this, there is not much groundwater storage in the mountains.

MOTION

Committee Member Gaillard made a motion to continue to use groundwater levels as a proxy for groundwater storage. The motion was seconded by Committee Member Haslett, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	None
ABSTAIN:	None
ABSENT:	None

iii. Subsidence

Mr. Van Lienden reviewed the Sustainable Management Criteria and Undesirable Result Statement for Subsidence which is included in the SAC packet.

Committee Member Haslett asked why there are changes at the subsidence station at the Cuyama Union High School. Mr. Van Lienden responded that this station is the only one in the CMA and the pumping in the CMA could have affected the station but upon discussions with Ryan Turner from United States Geological Survey it was determined that the station is still providing accurate data.

MOTION

Committee Member Adams made a motion to keep existing MT and MO along with keeping the existing definition for undesirable results. The motion was seconded by

Committee Member Jaffe, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	None
ABSTAIN:	None
ABSENT:	None

iv. Water Quality

Mr. Van Lienden reviewed the Sustainable Management Criteria and Undesirable Result Statement for water quality for total dissolved solids which is included in the SAC packet.

Committee Member Gaillard asked when will the interim milestone be achieved. Mr. Van Lienden replied the Board will direct staff on the MT and MO and staff will set the interim milestone using the same approach as five years ago.

Committee Member asked if the wells are strictly monitoring wells or production wells. Mr. Van Lienden replied it is a mix of monitoring wells and production wells.

MOTION

Committee Member Lewis made a motion to update MTs using the same calculation but incorporating more recent monitoring measurement data and if well's calculated MT is lower than 1000 mg/L then the MT will be set to 1000 mg/L, update the MOs using same calculation but incorporating more recent monitoring measurement data, and keep the existing definitions for ground water quality undesirable results specifically for total dissolved solids. The motion was seconded by Committee Member Furstenfeld, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	None
ABSTAIN:	None
ABSENT:	None

Mr. Van Lienden reviewed the Sustainable Management Criteria and Undesirable Result Statement for water quality for nitrates and arsenic which is included in the SAC packet.

Committee Member Jaffe commented it would be prudent to develop sustainability criteria for arsenic and nitrates.

Committee Member Caufield suggested setting the GSA as a coalition on behalf of the landowners which would allow the GSA to do the sampling rather than rely on an outside source.

Vice Chair DeBranch commented that when the GSP was being formed there was no MO or MT for arsenic and nitrates and DWR is now requiring this be addressed.

MOTION

Committee Member Jaffe made a motion to set sustainable criteria for nitrates and arsenic and coordinate with water quality agencies as appropriate. The motion was seconded by Committee Member Furstenfeld, a roll call vote was made, and the motion

passed.

AYES:	Adams, Caufield, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	DeBranch
ABSTAIN:	None
ABSENT:	None

c. Discuss and Take Appropriate Action on GSP Draft Chapters

Mr. Van Lienden provided an overview of the GSP draft chapters which are included in the SAC packet. He continued to say any comments on the draft chapters can be sent to Mr. Blakslee for consideration of inclusion in the final chapters.

Committee Member Furstenfeld commented the figure 1-17 shows there is water pumping occurring at the end of the Wasioja river but there is no pumping occurring in that area. Mr. Blakslee replied staff will look into that figure.

MOTION

Chair Kelly made a motion to approve the draft chapters as presented. The motion was seconded by Committee Member Adams, a roll call vote was made, and the motion passed.

AYES:	Adams, Caufield, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, Lewis
NOES:	None
ABSTAIN:	DeBranch
ABSENT:	None

d. Discuss and Take Appropriate Action on Allocation Program Components

Mr. Blakslee provided an overview of the allocation program components which is provided in the SAC packet.

Mr. Beck reviewed the options for baseline allocation amount which is included in the SAC packet.

Chair Kelly asked if using a five-year average would be the best option to use to incorporate the dry and wet years. Mr. Blakslee replied staff would need to check if this is a viable option.

Committee Member Haslett commented if a decision is made today, it would be best to continue using the current approach but update with 2021 modeled water use, however, if this will be done later then 2023 and 2022 water use data should be used.

Mr. Beck informed the SAC that all options for the allocation methodology have been reviewed by legal and are legally viable options.

Committee Member Jaffe asked what the period of time is to determine irrigated acreage. Mr. Beck responded that would need to be determined by the Board.

Committee Member Haslett commented that the next step is individual well monitoring and management.

Stakeholder Adam Lovgren commented if you use historical pumping it rewards those who historically pumped large amounts of water.

Committee Member Lewis commented irrigated acreage might be the best option.

Committee Member Adams commented that using historical use is not a realistic method to use because it is unsustainable.

Mr. Beck explained the purpose of the allocation methodology is to determine how much water each pumper is allocated while the glidepath is a method on reducing the water use for each year.

Committee Member Jaffe and Haslett commented that none of the options presented are acceptable.

Chair Kelly commented a hybrid could be used.

Committee Member Haslett commented that a hybrid option needs to be used with a tiered approach.

Committee Member Furstenfeld commented that the option used should include water conservation.

Stakeholder Adam Lovgren commented that an allocation could be established based on the crops that are being planted and develop water markets to reward those who are not pumping.

Mr. Blakslee asked if the SAC would like to recommend staff to begin developing options for a water market. SAC members Adams, Brenton, Furstenfeld, Gaillard, and Haslett recommended against this, and SAC members DeBranch, Gaillard, and Lewis recommended the GSA move forward with developing options for a water market. SAC Member Jaffe recommended that staff develop an educational workshop for water markets.

Mr. Blakslee asked if the SAC would like to recommend staff to begin developing options to allow landowners to carry over unused allocations. SAC Member Adams, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly, and Lewis recommended staff not develop options at this time, and SAC members DeBranch, and Caufield recommended that staff should develop options to consider carryover of unused allocations.

Mr. Blakslee asked if the SAC would like to recommend staff to begin developing options to develop a more sophisticated accounting system for water accounting.

Committee Member Gaillard asked what the frequency of reported data is. Mr. Blakslee replied that would need to be determined.

Committee Member Haslett commented there is no need to have a sophisticated accounting system at this time.

Committee Member Jaffe asked if this would be reported on individuals or in general. Mr. Blakslee replied that would need to be reviewed with the Board and legal.

Committee Member Furstenfeld commented that tracking this information online would be useful for people to be able to view the historical data.

Committee Member Caufield, Jaffe, Gaillard, and Kelly asked to have a more transparent reporting system that is publicly available.

Committee Member Haslett commented staff needs to ensure the bugs are worked out before releasing to the public.

Vice Chair DeBranch commented he is not in favor of having staff work on a more sophisticated system at this time.

REPORT ITEMS

8. Technical Updates

a. Update on Groundwater Sustainability Plan Activities
Mr. Van Lienden provided an update on the accomplishments for November and December 2023 which is provided in the SAC packet.

b. Update on Grant-Funded Projects
Mr. Van Lienden provided an update on the grant-funded projects which is provided in the SAC packet.

c. Update on October 2023 Groundwater Conditions Report
Mr. Van Lienden provided an update on the October 2023 groundwater conditions report which is provided in the SAC packet.

9. Groundwater Sustainability Agency

a. Report of the Executive Committee Member
Nothing to report.

b. Report of the General Counsel
Committee Member Jaffe asked what gets reported on closed sessions and requested for the SAC to receive updates on those reports.

Legal Counsel Alex Dominguez reported the Board elected to intervene in the adjudication and the Board minutes have an item for reportable items from closed session.

Committee Member Adams asked in what capacity the GSA joined the adjudication. Mr. Dominguez replied the GSA is a neutral party and the goal of the GSA is to support the GSP.

Committee Member Jaffe commented that the GSA represents the community and where there is an opportunity to be transparent that would be greatly appreciated.

c. Board of Directors Agenda Review
Mr. Blakslee provided an overview of the January 10, 2024, CBGSA Board Meeting agenda which is provided in the SAC packet.

10. Items for Upcoming Sessions
Nothing to report.

11. Committee Forum
Nothing to report.

12. Public Comment for Items Not on the Agenda
Nothing to report.

13. Correspondence
Nothing to report.

14. Adjourn
Chair Kelly adjourned the meeting at 10:43 p.m.

STANDING ADVISORY COMMITTEE OF THE
CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Chair Kelly: _____

ATTEST:

Vice Chair DeBranch: _____

TO: Standing Advisory Committee
Agenda Item No. 6a

FROM: Taylor Blakslee / Brian Van Lienden

DATE: February 29, 2024

SUBJECT: Discuss and Take Appropriate Action on Water Year 2023 Annual Report

Recommended Motion
Approve the Water Year 2023 Annual Report.

Discussion
In compliance with the Sustainable Groundwater Management Act, annual reports on basin sustainability metrics and progress on Groundwater Sustainability Plan implementation must be submitted to the California Department of Water Resources (DWR) by April 1st of each year.

A summary of the draft annual report for Water Year 2022-2023 (October 1, 2022 through September 30, 2023) is provided as Attachment 1, and the full report is provided as Attachment 2 for consideration of approval.

Cuyama Basin Groundwater Sustainability Agency

6a. Discuss and Take Appropriate Action on Water Year 2023 Annual Report

Brian Van Lienden

February 29, 2024

HALLMARK GROUP Woodard & Curran

Annual Report Timeline

- DWR SGMA regulations require that an Annual Report be submitted each year by April 1st each year

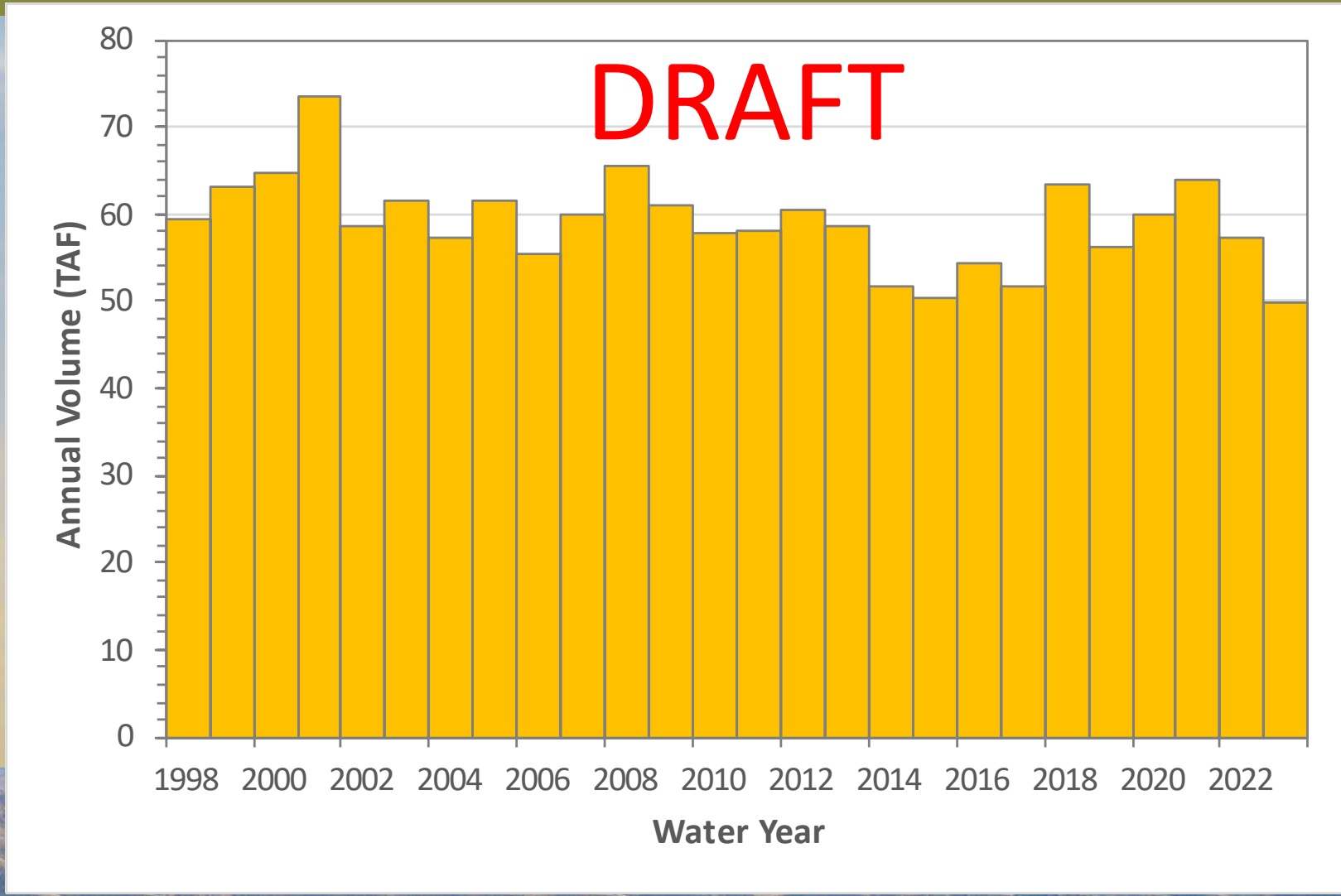
- Staff is **requesting approval** of the Annual Report by the CBGSA Board

Data and Model Updates

- Groundwater elevations:
  - Available data collected for all wells in monitoring network through 2023
- Groundwater model update
  - Historical model period is extended through 2023
    - Annual Report model does not reflect ongoing changes being worked on to update the model.
  - Updated land use, precipitation and evapotranspiration data collected for 2023
    - Updated land use data has been provided for 2023 period by local landowners
    - LandIQ also developed land use estimates for 2023; this was used to supplement local landowner data

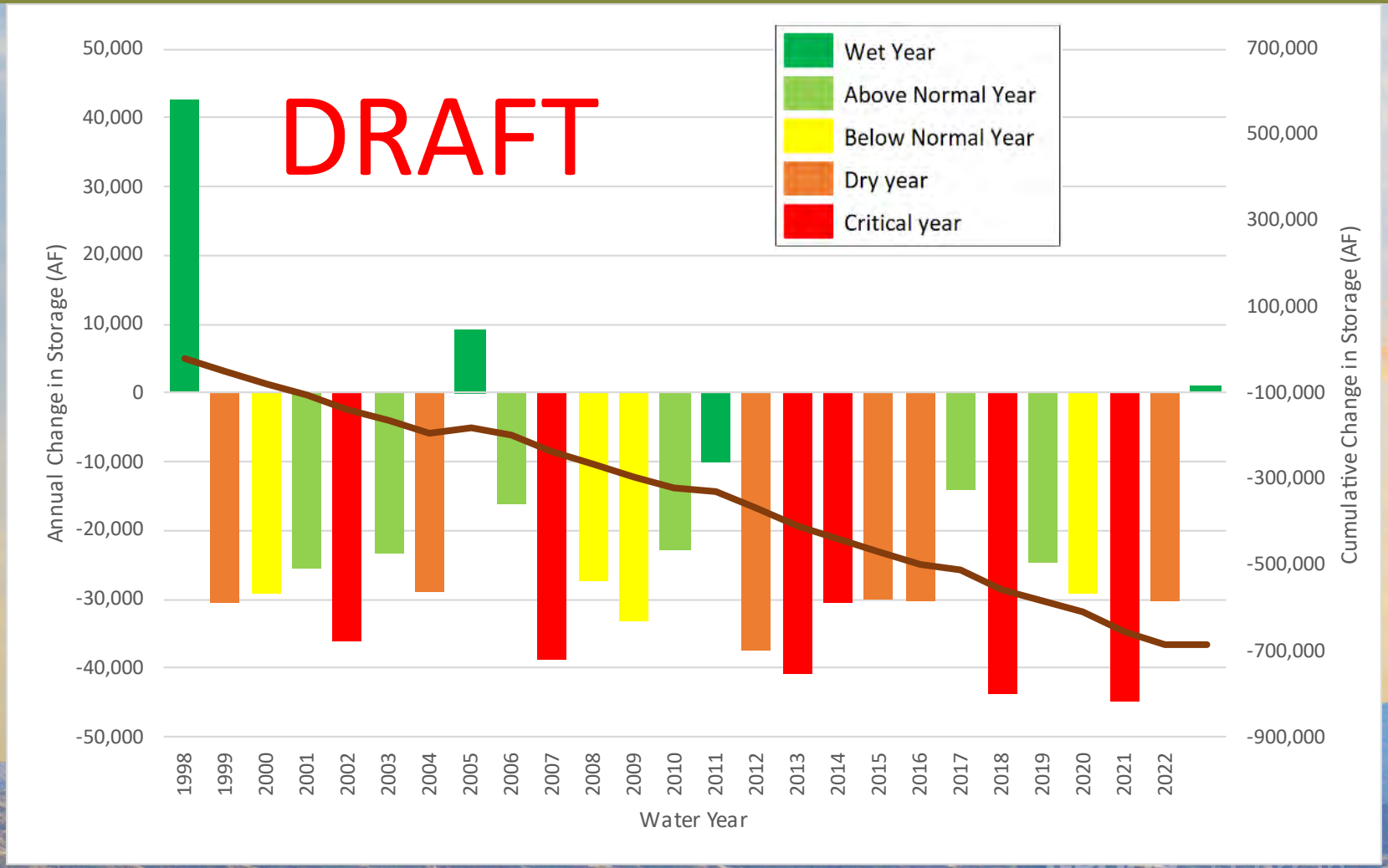
Estimated Groundwater Extraction

- Figure has been updated to include 2023
- Estimated groundwater extractions:
  - 2022: 57,400 AF
    - Reduced from 66,700 AF based on the land use corrections
  - 2023: 49,900 AF



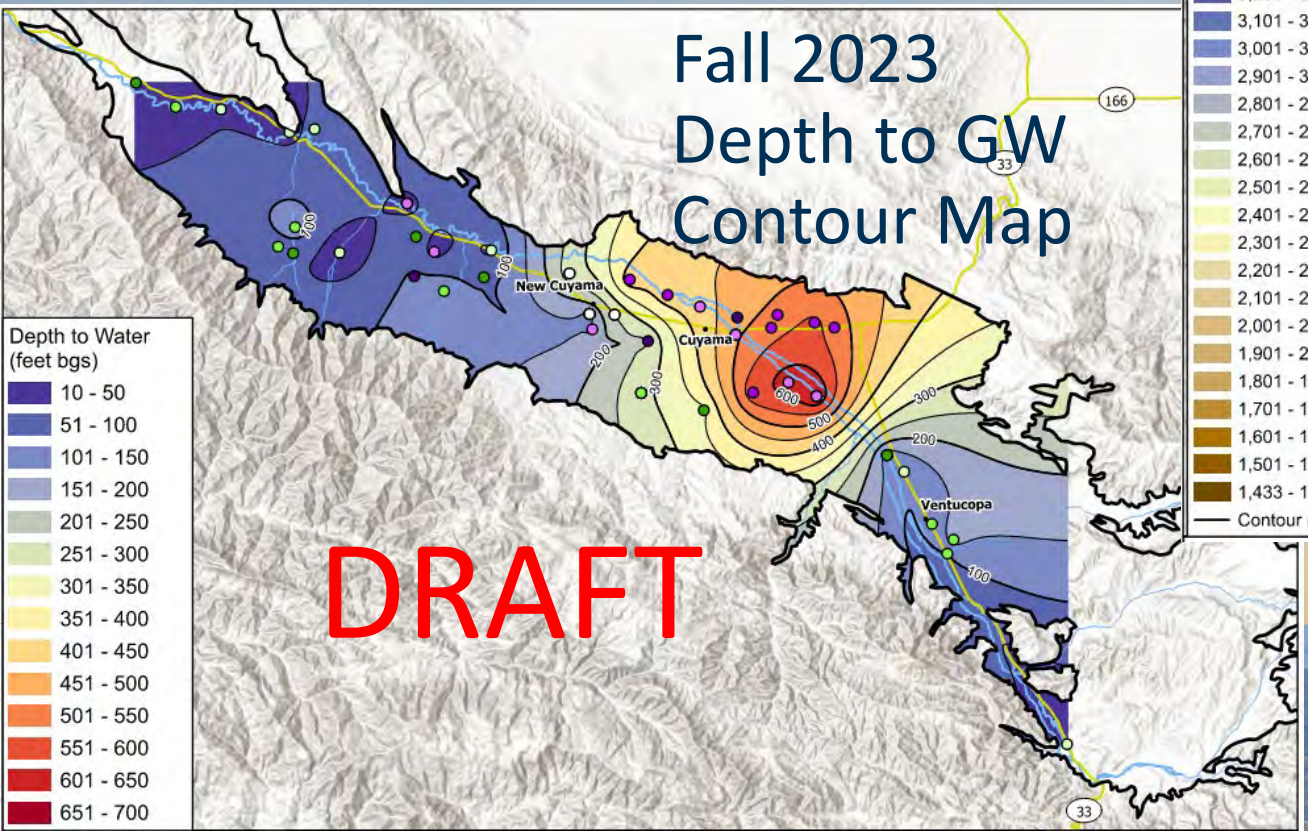
Change in Groundwater Storage

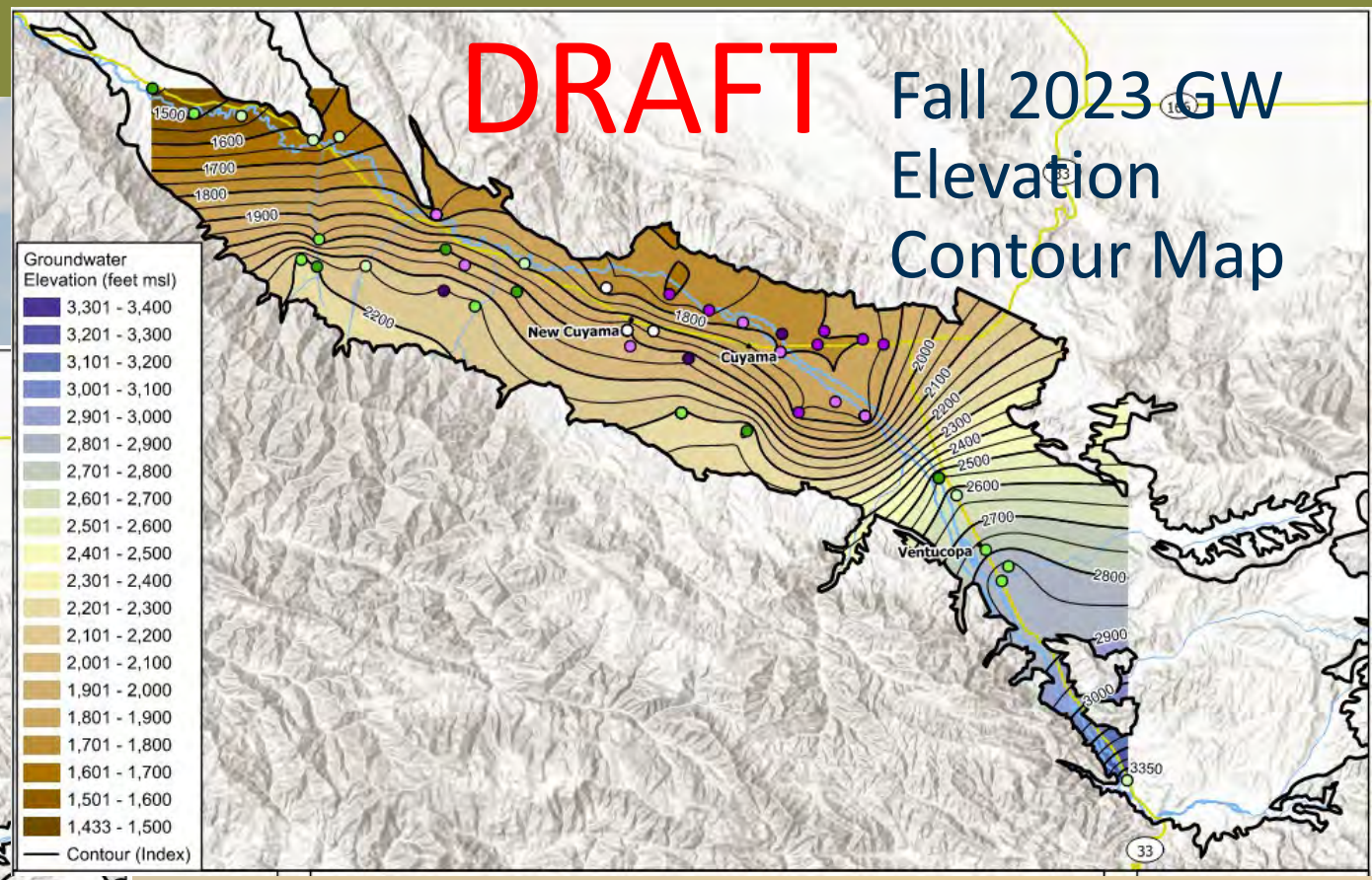
- Figure has been updated to include 2023
- Estimated change in storage:
  - 2022: -30,200 AF
    - Changed from -38,500 AF following land use corrections
  - 2023: +1,000 AF

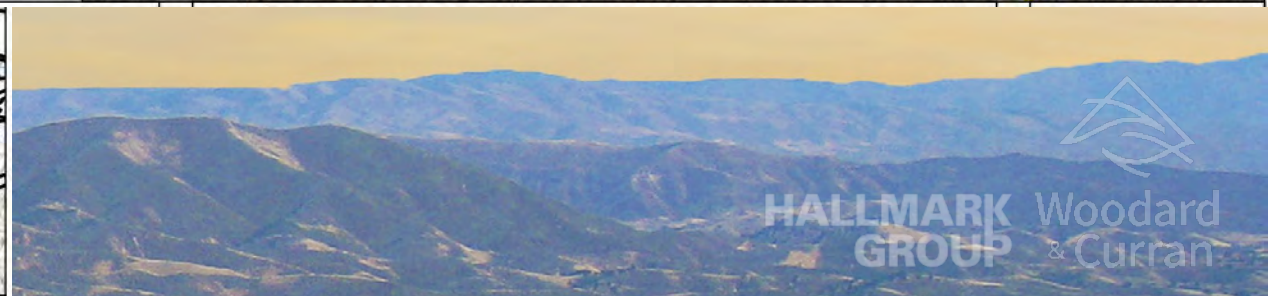


Updated Groundwater Conditions Figures

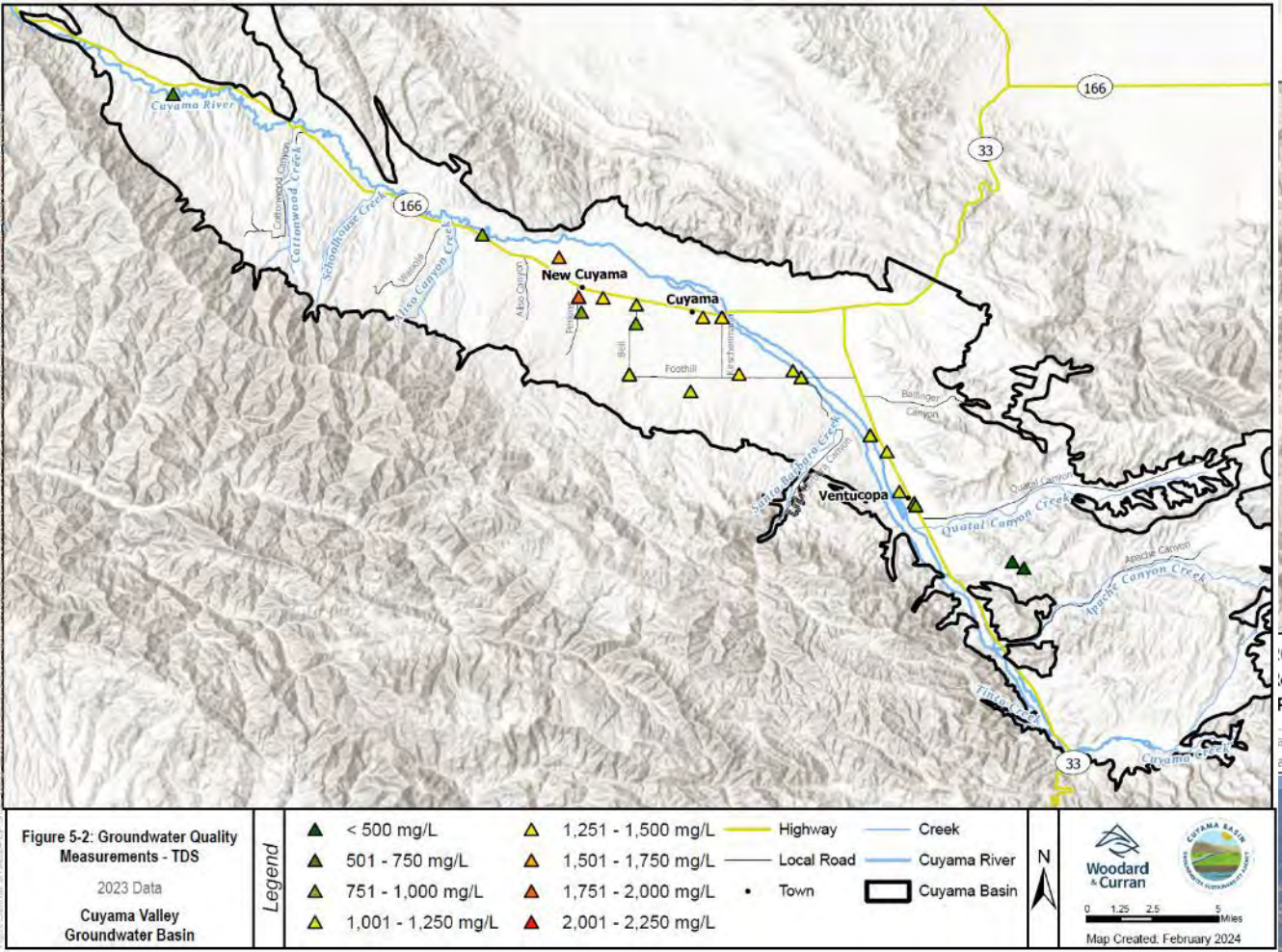
Updated Contour Maps were created for 2023 (Spring and Fall)



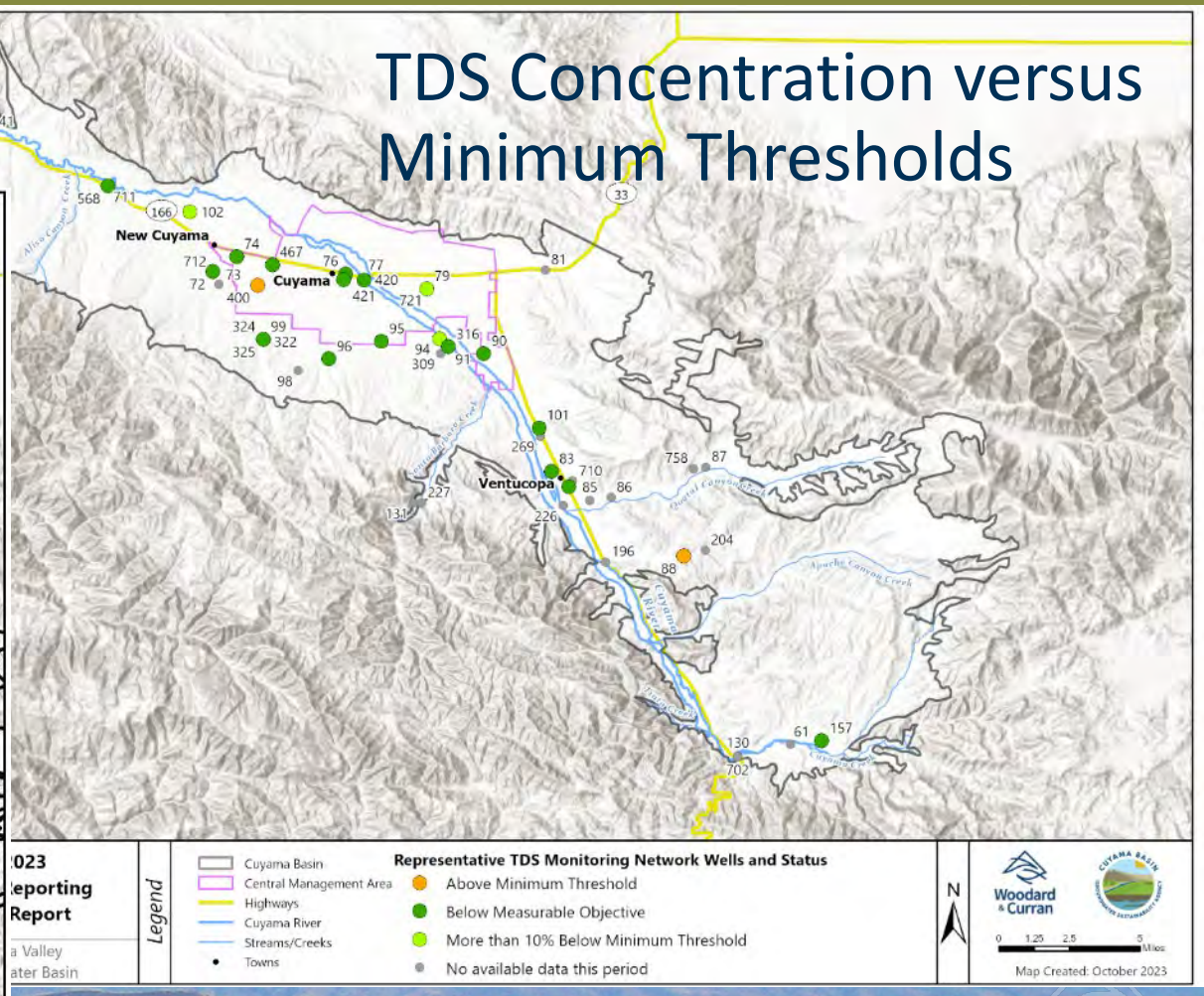




Salinity (TDS) Conditions Figures DRAFT



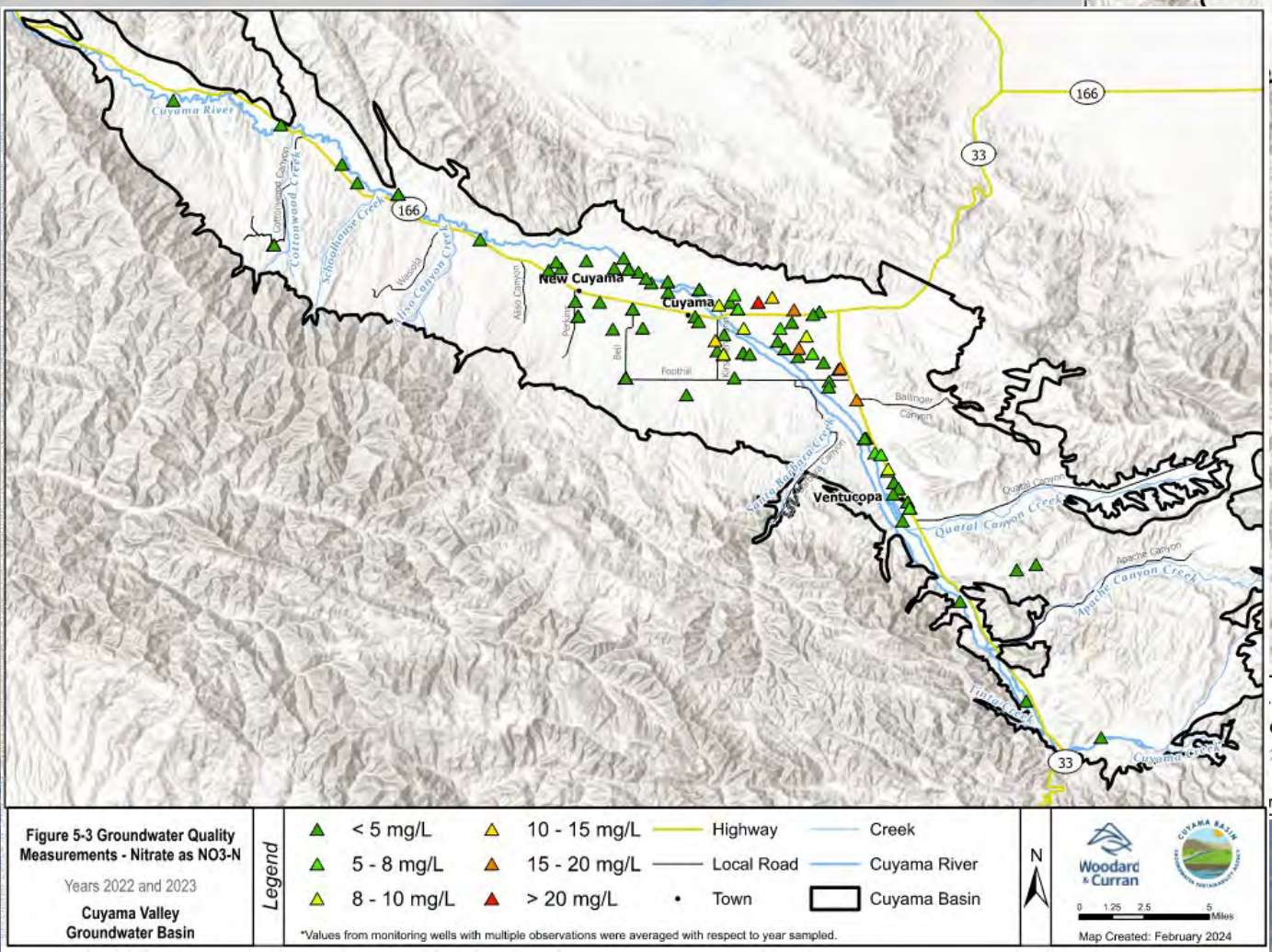
TDS Concentration versus Minimum Thresholds



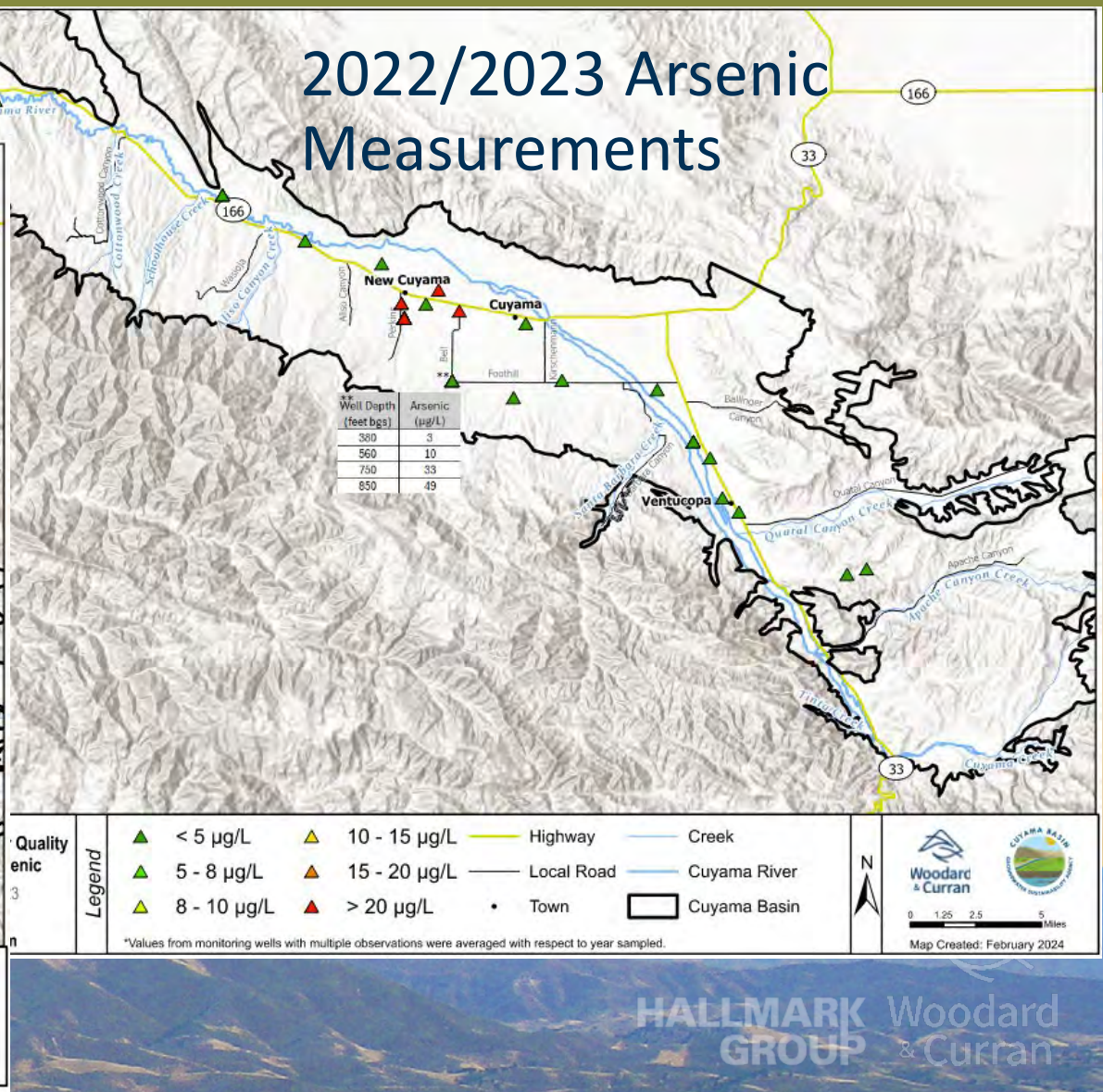
HALLMARK GROUP Woodard & Curran

Nitrate and Arsenic Figures

DRAFT



2022/2023 Arsenic Measurements



HALLMARK GROUP Woodard & Curran

Cuyama Basin
Groundwater Sustainability Plan—
Draft Annual Report for 2022-2023 Water Year

Prepared by:

Woodard & Curran

March 2024

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Appendices

Abbreviations and Acronyms

AF	acre-feet
CBGSA	Cuyama Basin Groundwater Sustainability Agency
CBWD	Cuyama Basin Water District
CBWRM	Cuyama Basin Water Resources Model
CCSD	Cuyama Community Services District
DMS	Data Management System
DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
SAC	Standing Advisory Committee
SBCWA	Santa Barbara County Water Agency
SGMA	Sustainability Groundwater Management Act
SR	State Route
TSS	Technical Support Services
USGS	United States Geological Survey

Executive Summary

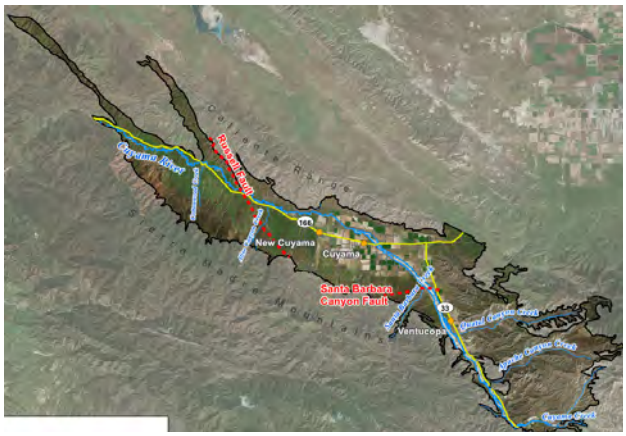
§356.2 (a)	General information, including an executive summary and a location map depicting the basin covered by the report.

ES-1 Introduction

In 2014, the California legislature enacted the Sustainable Groundwater Management Act (SGMA) in response to continued overdraft of California's groundwater resources. The Cuyama Groundwater Basin (Basin) is one of 21 basins and subbasins identified by the California Department of Water Resources (DWR) as being in a state of critical overdraft. SGMA requires that a Groundwater Sustainability Plan (GSP) be prepared to address the measures necessary to attain sustainable conditions in the Cuyama Groundwater Basin. Within the framework of SGMA, sustainability is generally defined as the conditions that result in long-term reliability of groundwater supply and the absence of undesirable results.

In response to SGMA, the Cuyama Basin Groundwater Sustainability Agency (CBGSA) was formed in 2017. The CBGSA is a joint-powers agency that is comprised of Kern, Santa Barbara, San Luis Obispo and Ventura Counties, plus the Cuyama Community Services District and the Cuyama Basin Water District. The CBGSA is governed by an 11-member Board of Directors, with one representative from Kern, San Luis Obispo and Ventura counties, two representatives from Santa Barbara County, one member from the Cuyama Community Services District, and five members from the Cuyama Basin Water District.

Figure ES-1: GSP Plan Area



The Draft Cuyama Basin GSP was adopted on December 4, 2019 by the CBGSA and submitted to DWR on January 28, 2020. SGMA requires that the CBGSA develop a GSP that achieves groundwater sustainability in the Basin by the year 2040.

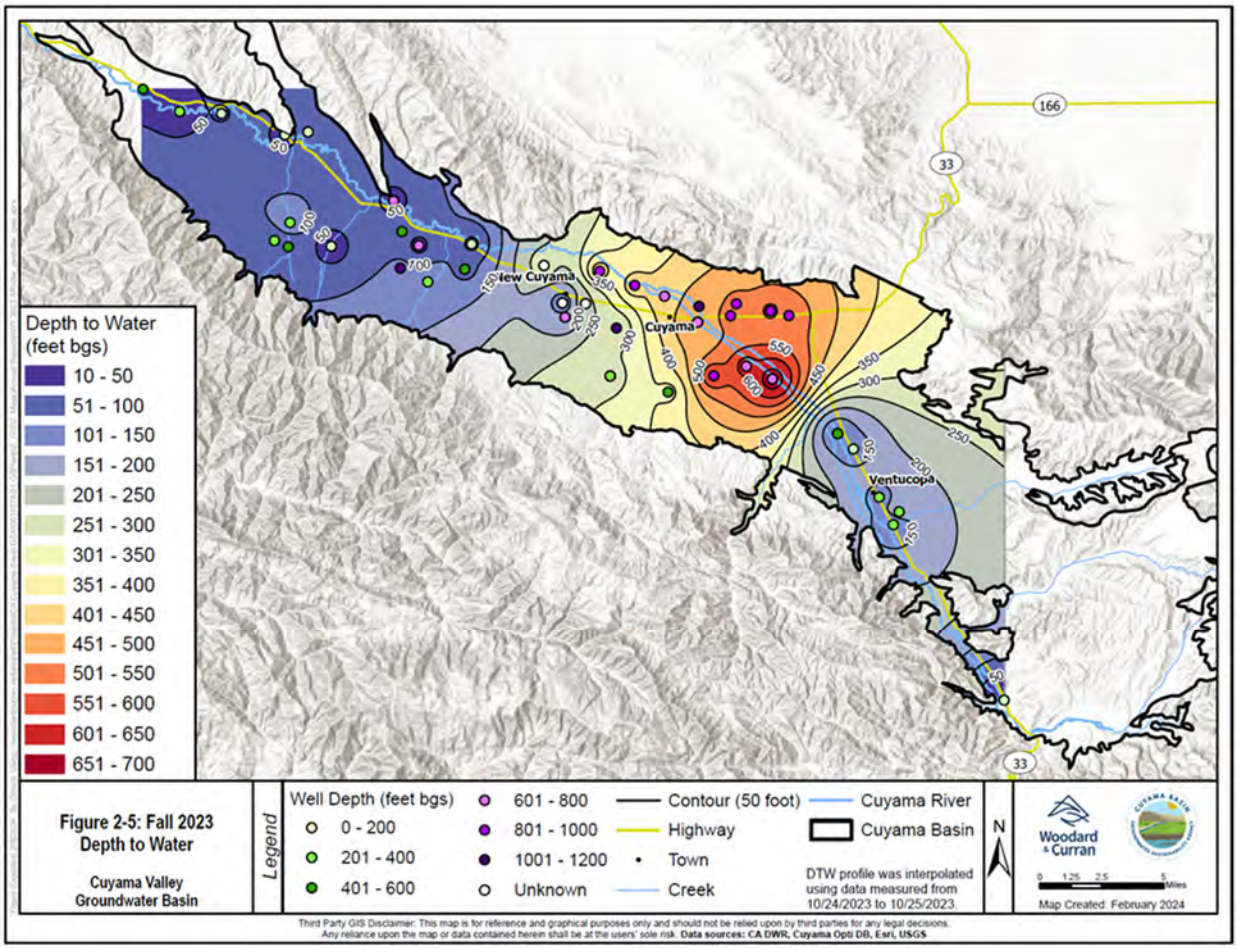
On January 21, 2021, DWR determined that the GSP was "incomplete" and recommended CBGSA to amend the GSP to address four corrective actions. To address these corrective actions, CBGSA developed supplemental sections to the GSP and resubmitted to DWR on July 18, 2022. On March 2, 2023, DWR announced that the Revised GSP had been Approved.

The jurisdictional area of the CBGSA is defined by DWR's Bulletin 118, 2013, the 2016 Interim Update, and the latest 2020 update. The Cuyama Groundwater Basin generally underlies the Cuyama Valley, as shown in **Figure ES-1**.

ES-2 Groundwater Levels

The Annual Report for the 2023 water year includes groundwater contours for Spring and Fall of 2023, and updated hydrographs for the groundwater level monitoring network identified in the Cuyama Basin GSP. The Cuyama Basin consists of a single principal aquifer, and water levels in Basin monitoring wells are considered representative of conditions in that aquifer. Groundwater levels in some portions of the Basin have been declining for many years while other areas of the Basin have experienced no significant change in groundwater levels. Groundwater levels vary across the Basin, with the highest depth to water occurring in the central portion of the Basin (**Figure ES-2**). The western and eastern portions of the Basin have generally shallower depth to water. Generally, depth to water and groundwater elevation in 2023 have changed a small amount in the central basin compared to 2022 levels with little change in other parts of the basin.

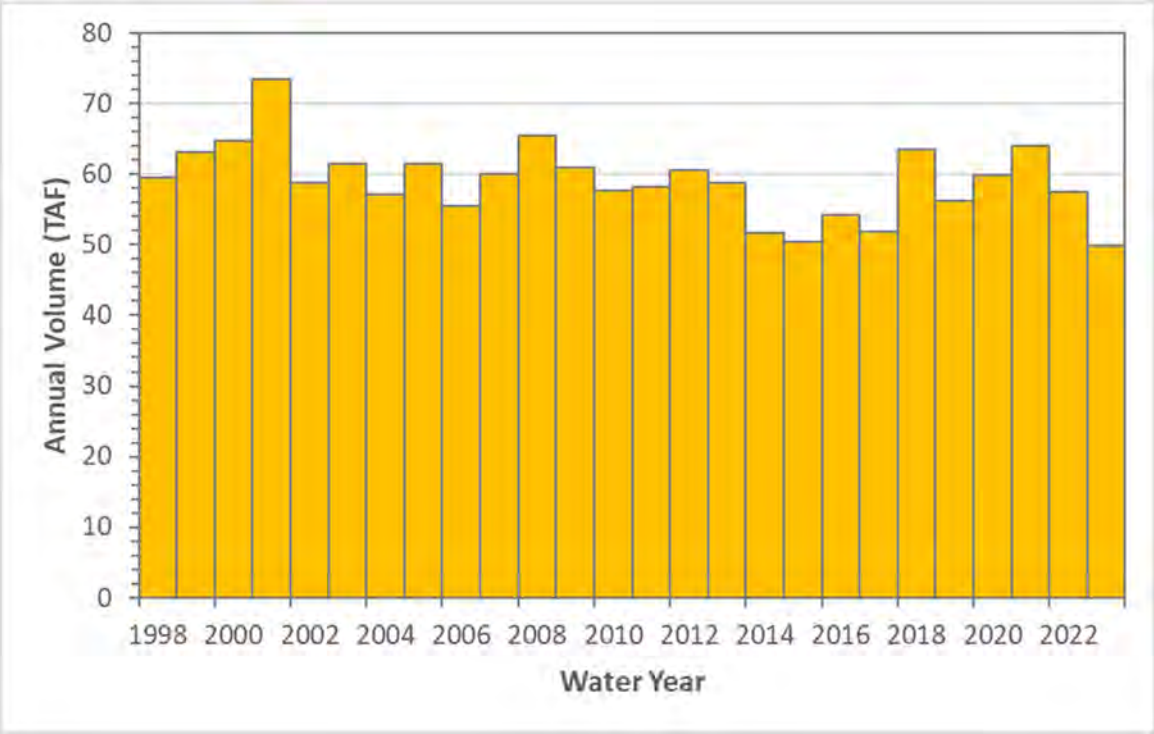
Figure ES-2: Cuyama Basin Depth to Water Contour Map (Fall 2023)



ES-3 Water Use

The Cuyama Groundwater Basin is supplied entirely by groundwater, with virtually no surface water use. Groundwater pumping in the Basin is estimated to have been about 49,900 AF in 2023. This reflects a decrease of about 7,500 AF as compared to 2022. (See **Figure ES-3**).

Figure ES-3: Annual Groundwater Extraction in the Cuyama Basin in Water Years 1998-2023



ES-4 Change in Groundwater Storage

It is estimated that there was an increase in Basin groundwater storage of 1000 AF in 2023. This year showed an annual increase in groundwater storage, the first time since 2005. However there continues to be a long-term trend in groundwater storage reduction in the Basin since 1999. **Figure ES-4** shows the historical change in groundwater storage by year, water year type,[1] and cumulative water volume in each year for the period from 1998 through 2023.

Figure ES-4: Change in Groundwater Storage by Year, Water Year Type, and Cumulative Water Volume

[1] Water year types are customized for the Basin watershed based on annual precipitation as follows:

- Wet year = more than 19.6 inches
- Above normal year = 13.1 to 19.6 inches
- Below normal year = 9.85 to 13.1 inches
- Dry year = 6.6 to 9.85 inches
- Critical year = less than 6.6 inches.

ES-5 Groundwater Quality

Only 34% of monitoring wells were sampled for total dissolved solids (TDS) in 2023 due to limitations in gaining access to well sites. Approximately 13% of measured wells exceeded their measurable objective and 4% exceeded their minimum threshold for TDS. However, CBGSA considers it premature to use this data to evaluate the performance of groundwater quality at this time since only three rounds of measurements have been taken at these wells.

ES-6 Land Subsidence

Observed subsidence rates in the Basin are well below the minimum threshold, and thus undesirable results for subsidence are not occurring in the Basin.

ES-7 Plan Implementation

The following plan implementation activities were accomplished in 2023:

- Implementation of a groundwater extraction fee and supplemental fee, which is expected to generate revenue to cover the administrative costs of the CBGSA for the period from January 1, 2023, through December 31, 2023.
- A total of nine public meetings were conducted at which GSP development and implementation was discussed.
- The Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board continued implementation of the groundwater levels monitoring network, includes quarterly monitoring at each monitoring well.
- The CBGSA continued to utilize the COD SGMA Implementation Grant for $7.6 million in funding for implementation activities.
- The CBGSA and Cuyama Basin Water District (CBWD) continued implementation of management actions in the Central management area.

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Section 1. Introduction

§356.2 (a)	General information, including an executive summary and a location map depicting the basin covered by the report.

1.1 Introduction and Agency Information

This section describes the Cuyama Basin Groundwater Sustainability Agency (CBGSA), its authority in relation to the Sustainable Groundwater Management Act (SGMA), and the purpose of this Annual Report.

This Annual Report meets regulatory requirements established by the California Department of Water Resources (DWR) as provided in Article 7 of the California Code of Regulations, Title 23, Division 2, Chapter 1.5, Subchapter 2.

The CBGSA was created by a Joint Exercise of Powers Agreement among the following agencies:

- Counties of Kern, San Luis Obispo, and Ventura
- Santa Barbara County Water Agency (SBCWA), representing the County of Santa Barbara
- Cuyama Basin Water District (CBWD)
- Cuyama Community Services District (CCSD)

The CBGSA Board of Directors includes the following individuals:

- Cory Bantilan – Chairperson, SBCWA
- Matt Vickery – Vice Chairperson, CBWD
- Derek Yurosek –CBWD
- Deborah Williams –CCSD
- Byron Albano – CBWD
- Jimmy Paulding – County of San Luis Obispo
- Zack Scrivner – County of Kern
- Arne Anselm – County of Ventura
- Rick Burnes – CBWD
- Das Williams – SBCWA
- Jane Wooster – CBWD

The CBGSA's established boundary corresponds to DWR's California's Groundwater Bulletin 118 – Update 2003 (Bulletin 118) groundwater basin boundary for the Cuyama Valley Groundwater Basin (Basin) (DWR, 2003). No additional areas were incorporated.

1.1.1 Management Structure

The CBGSA is governed by an 11-member Board of Directors that meets bi-monthly (i.e. six-times a year). A General Manager manages day-to-day operations of the CBWD, while Board Members vote on actions of the CBGSA; the Board is the CBGSA's decision-making body. The Board also formed a Standing Advisory Committee comprised of nine stakeholders to provide recommendations to the Board on key technical issues which also meets regularly.

1.1.2 Legal Authority

Per Section 10723.8(a) of the California Water Code, the Santa Barbara County Water Agency (SBCWA) gave notice to DWR on behalf of the CBGSA of its decision to form a GSA, which is Basin 3-013, per DWR's Bulletin 118.

1.1.3 Groundwater Sustainability Plan

The CBGSA Board of Directors approved the first iteration of the Cuyama Groundwater Sustainability Plan (GSP) on December 4, 2019. The GSP was submitted to DWR for approval on January 28, 2020.

On January 21, 2021, DWR determined that the GSP was "incomplete" and recommended CBGSA amend the GSP to address the following four corrective actions:

- Provide justification for, and effects associated with, the sustainable management criteria;
- Use of groundwater levels as a proxy for depletion of interconnected surface water;
- Further address degraded water quality; and
- Provide explanation for how overdraft will be mitigated in the basin.

To address these corrective actions, the CBGSA developed the following supplement sections to the GSP and resubmitted to DWR on July 18, 2022:

- Supplemental Section 2.2.7: Basin Settings, Groundwater Conditions, Groundwater Quality performed additional data collection efforts for nitrate and arsenic measurements.
- Supplemental Section 3.3: Undesirable Results, Evaluation of the Presence of Undesirable Results provided additional information regarding the rationale for the criteria used in the GSP to define the point at which Basin conditions cause significant and unreasonable effects to occur.
- Supplemental Section 4.10: Monitoring Networks, Depletions of Interconnected Surface Water Monitoring Network identifies a subset of groundwater level representative monitoring wells for use in ISW monitoring and provides a rational for their selection and adequate data collection and monitoring for ISWs.
- Supplemental Section 5.2: Minimum Thresholds, Measurable Objectives, and Interim Milestones, Chronic Lowering of Groundwater Levels performed two technical analyses to provide additional information related to the effects of the GSP's groundwater levels minimum thresholds and undesirable results on well infrastructure and on environmental uses of groundwater.
- Supplemental Section 5.5: Minimum Thresholds, Measurable Objectives, and Interim Milestones, Degraded Water Quality provides information on why groundwater management is unlikely to affect nitrate and arsenic concentrations.
- Supplemental Section 7.2: Projects and Management Actions, Management Areas provide additional information regarding the Ventucopa management area and the northwestern region of the Basin.
- Supplemental Section 7.6: Projects and Management Actions, Adaptive Management explains the circumstances of when adaptative management strategies may be also triggered for other reasons.

The resubmitted and updated GSP is available for viewing online at http://cuyamabasin.org/. On March 2, 2023, DWR announced that the Revised GSP had been Approved. The CBGSA is currently working on a revision to the GSP that is expected to be completed in January 2025.

1.2 Plan Area

Figure 1-1 shows the Basin and its key geographic features. The Basin encompasses an area of about 378 square miles[2] and includes the communities of New Cuyama and Cuyama, which are located along State Route (SR) 166, and Ventucopa, which is located along SR 33. The Basin encompasses an approximately 55-mile stretch of the Cuyama River, which runs through the Basin for much of its extent before leaving the Basin to the northwest and flowing toward the Pacific Ocean. The Basin also encompasses stretches of Wells Creek in its north-central area, Santa Barbara Creek in the south-central area, the Quatal Canyon drainage and Cuyama Creek in the southern area of the Basin. Most of the agriculture in the Basin occurs in the central portion east of New Cuyama, and along the Cuyama River near SR 33 through Ventucopa.

Figure 1-2 shows the CBGSA boundary. The CBGSA boundary covers all of the Cuyama Valley Groundwater Basin.

[2] The 2003 version of Bulletin 118 section on the Cuyama Valley Groundwater Basin incorrectly stated that the Basin area is 230 square miles. The estimate of 378 square miles shown here and in the GSP is consistent with the mapping shown on DWR's GSA Map Viewer.

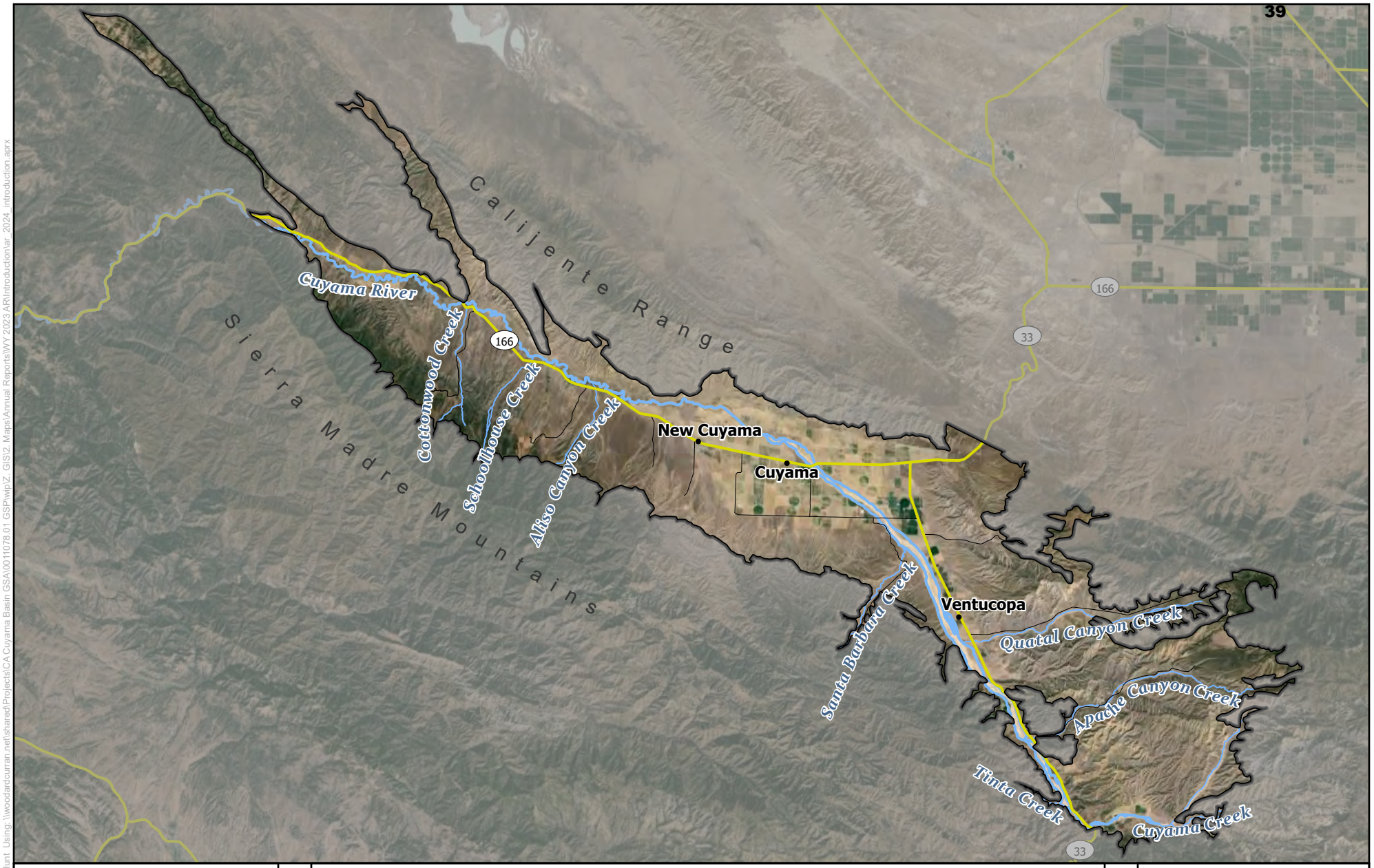

Figure 1-1: Groundwater Sustainability Plan Area

Cuyama Valley Groundwater Basin

Legend

Cuyama Basin
Cuyama River
Creek
Highway
Local Road
Town

N

Woodard & Curran

0 1.75 3.5 7 Miles

Map Created: February 2024

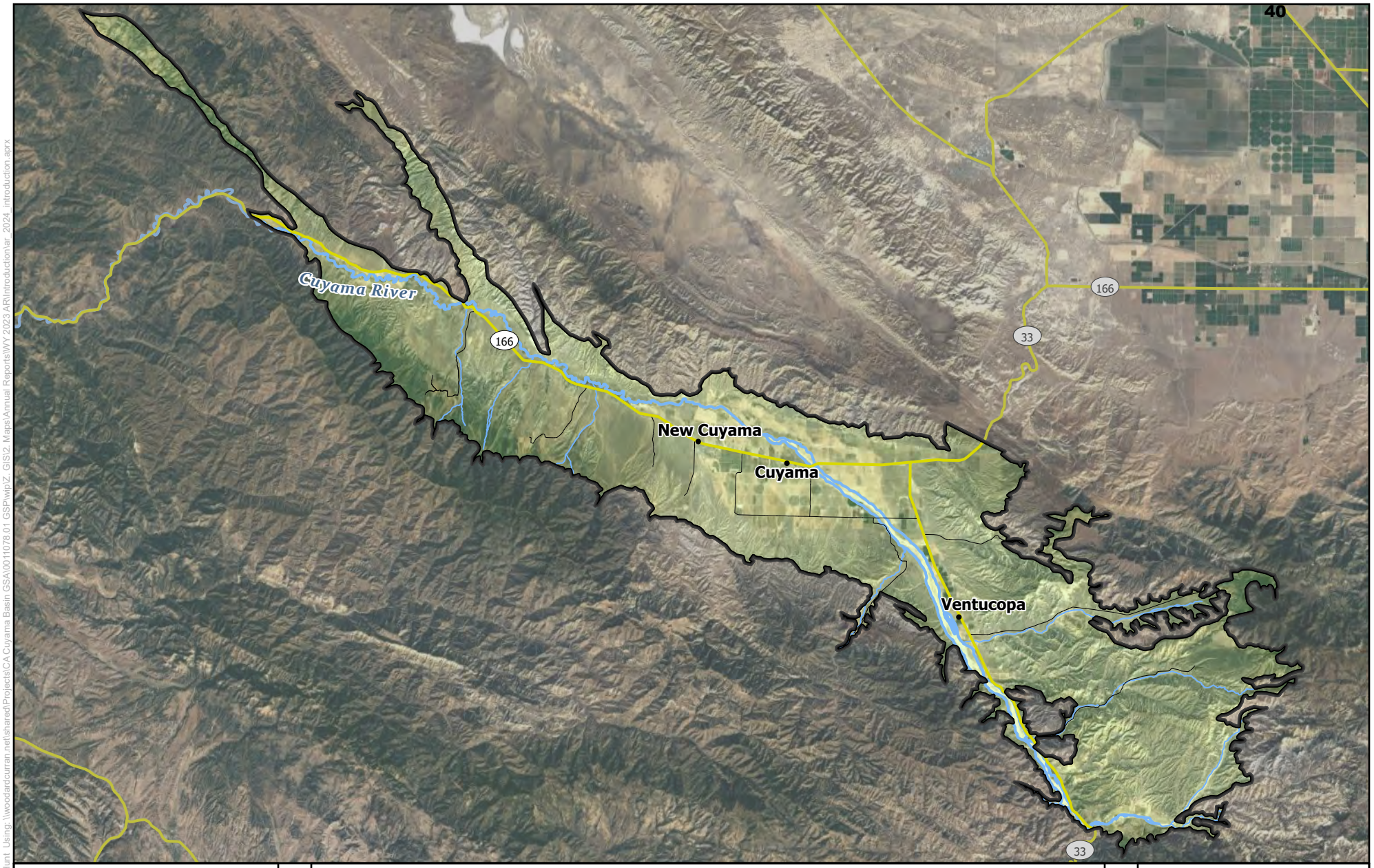

Figure 1-2: Groundwater Sustainability Agency Boundary

Cuyama Valley Groundwater Basin

Legend

- Cuyama Basin
- Cuyama River
- Creek
- Highway
- Local Road
- Town
- Cuyama Basin GSA

N

Woodard & Curran

0 1.75 3.5 7 Miles

Map Created: February 2024

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Section 2. Groundwater Levels

§356.2 (b)(1)	Groundwater elevation data from monitoring wells identified in the monitoring network shall be analyzed and displayed as follows:
§356.2 (b)(1)(A)	Groundwater elevation contour maps for each principal aquifer in the basin illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions.
§356.2 (b)(1)(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.

2.1 Groundwater Levels Representative Monitoring Network

As required by DWR's SGMA regulations, a monitoring network and representative monitoring network were identified in the Cuyama Basin GSP utilizing existing wells. The current groundwater levels representative monitoring network that was approved by the CBGSA Board is shown on **Figure 2-1.** The Cuyama Basin consists of a single principal aquifer, and water levels in monitoring network wells are considered representative of conditions in that aquifer. The objective of the representative monitoring network is to detect undesirable results in the Basin related to groundwater levels using the sustainability thresholds described in the GSP. Other related objectives of the monitoring network are defined via the SGMA regulations as follows:

- Demonstrate progress toward achieving measurable objectives described in the GSP.
- Monitor impacts to the beneficial uses or users of groundwater.
- Monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds.
- Quantify annual changes in water budget components.
- Monitoring that has occurred on the groundwater level monitoring network since the development of the Cuyama Basin GSP is included in this Annual Report. Collected groundwater level data has been analyzed to prepare contour maps and updated hydrographs, which are presented in the following sections.

In its September 2023 meeting, the CBGSA Board voted to modify the representative monitoring network to remove two wells for which the CBGSA has not been able to get a landowner agreement. This change will be reflected in the 2025 GSP update.

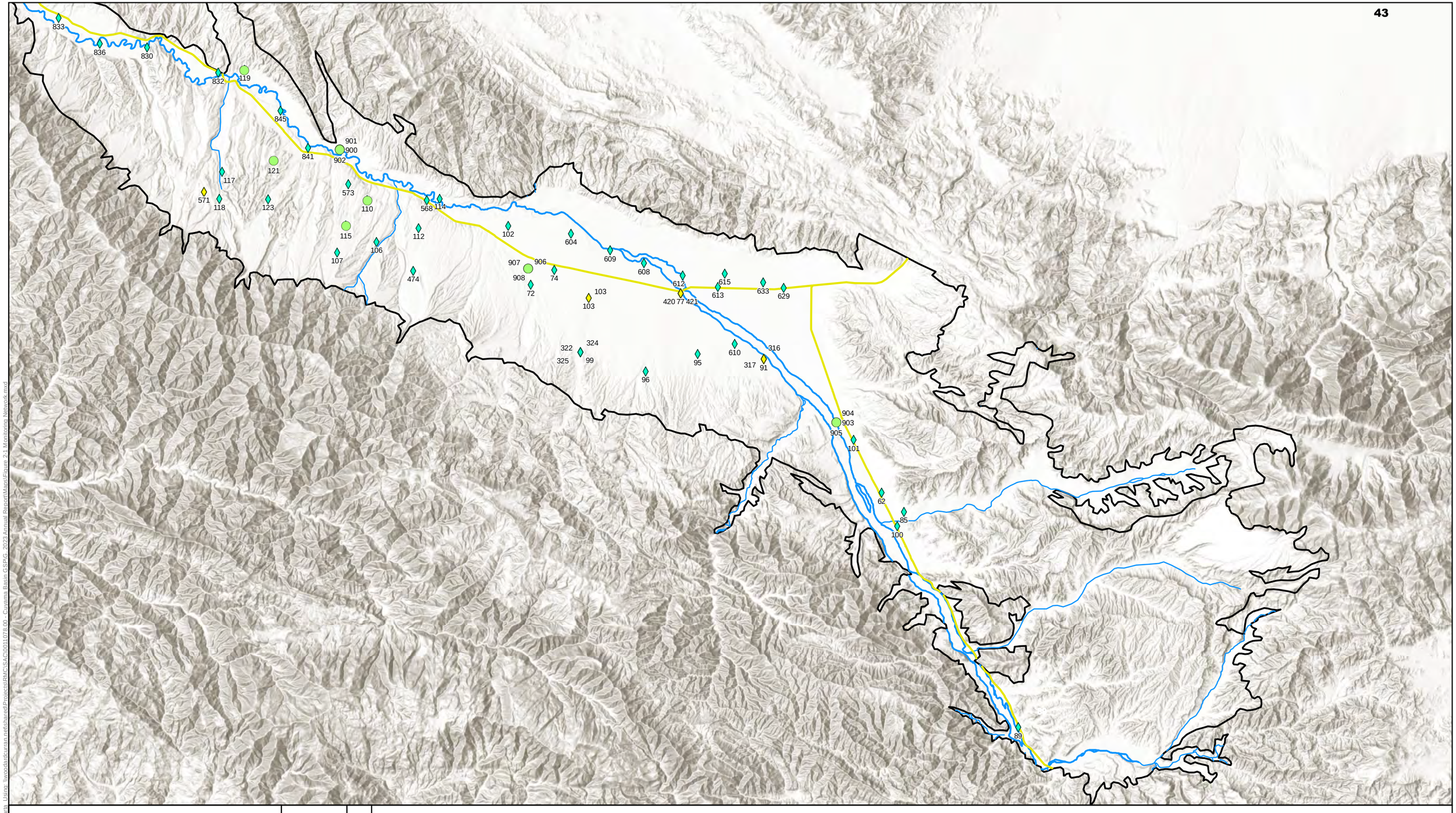

Figure 2-1: Cuyama GW Basin - Groundwater Monitoring Network

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2023

Woodard & Curran

Legend

- Cuyama Basin
- Cuyama River
- Highways
- Representative Wells
- Representative Well with Transducer
- Monitoring Network Well

N

0 1.75 3.5 7 Miles

2.2 Groundwater Contour Maps

The submitted GSP included contour maps up through the spring of 2018. The previous Annual Reports included contour maps for spring and fall of 2019 through 2022. For this Annual Report, analysis was conducted to incorporate data through October 2023 that was collected by the CBGSA and local landowners. Data was then added to the Data Management System (DMS) and processed to analyze the current groundwater conditions by creating seasonal groundwater contour/raster maps for the spring and fall of 2023 and hydrographs of Basin monitoring wells.

A contour map shows changes in groundwater elevations by interpolating groundwater elevations between monitoring sites. The elevations are shown on the map with the use of a contour line, which indicates that at all locations that line is drawn, the line represents groundwater at the elevation indicated. There are two versions of contour maps used in this section: one that shows the elevation of groundwater above mean sea level, which is useful because it can be used to identify the horizontal gradients of groundwater, and one that shows contours of depth to water, the distance from the ground surface to groundwater, which is useful because it can identify areas of shallow or deep groundwater.

Analysts prepared groundwater contour maps under the supervision of a Certified Hydrogeologist in the State of California for both groundwater elevation and depth to water for both spring and fall of 2023.

Each contour map is contoured at a 50-foot contour interval, with contour elevations indicated in white numeric label. The groundwater contours were also based on assumptions in order to accumulate enough data points to generate useful contour maps. Assumptions are as follows:

- Measurements from wells of different depths are representative of conditions at that location and there are no significant known vertical gradients. Due to the limited spatial amount of monitoring points, data from wells of a wide variety of depths were used to generate the contours.
- Measurements collected by the CBGSA monitoring program in April 2023 were used to develop the spring contours and in October 2023 to develop the fall contours. It is assumed that these measurements are representative of conditions during the spring or fall season, and conditions have not changed substantially from the time of the earliest measurement used to the latest.

These assumptions generate contours that are useful at the planning level for understanding groundwater levels across the Basin, and to identify general horizontal gradients and regional groundwater level trends. The contour maps are not indicative of exact values across the Basin because groundwater contour maps approximate conditions between measurement points, and do not account for topography. Therefore, a well on a ridge may be farther from groundwater than one in a canyon, and the contour map will not reflect that level of detail.

Figure 2-2 shows groundwater elevation contours for Spring of 2023. Based on data that was collected by local landowners and the CBGSA. The contours developed using the available data show two general trends in the Basin. First, in most of the Basin, groundwater generally reflects the topography of the Basin. For example, groundwater elevations decrease moving from the highest portions of the Valley in the Southeastern portion of the Basin towards the central portion, and groundwater also travels down slope in a northern direction off of the southern foothills towards the Cuyama River. The second trend and potential exception to the first, is the central portion of the Basin where there is a clear depression and deviation from the topography (more clearly seen in the following figure). Groundwater levels near the town of Cuyama and slightly towards the east are much deeper and do not match the surface topography. There is also a greater decline in groundwater elevations between the Ventucopa area and the central portion of the Basin.

Figure 2-3 shows the depth to groundwater contours for Spring 2023 and more clearly shows a depression in the central portion of the Basin greater than 600 ft below ground surface. Groundwater levels then increase toward the west reaching depths above 100 ft in the western portion of the Basin. These levels align with trends seen in previous contour maps provided in previous Annual Reports.

Figure 2-4 shows the groundwater elevation contours for Fall of 2023. Groundwater elevations show a depression in the central portion of the Basin and a steep gradient between the central portion of the Basin and the Ventucopa area, which is consistent with contour maps for 2015 through 2022 conditions and previous Annual Reports. Contours indicate a groundwater flow down the Basin from east to west, with a decrease in gradient through the central portion of the Basin.

Figure 2-5 shows the depth to groundwater contours for the Fall of 2023. Depth to water contours indicate a depression in the central portion of the Basin, and a steep gradient between the central portion of the Basin and the Ventucopa area, which is consistent with contour maps for 2015 through 2022 conditions and previous Annual Reports.

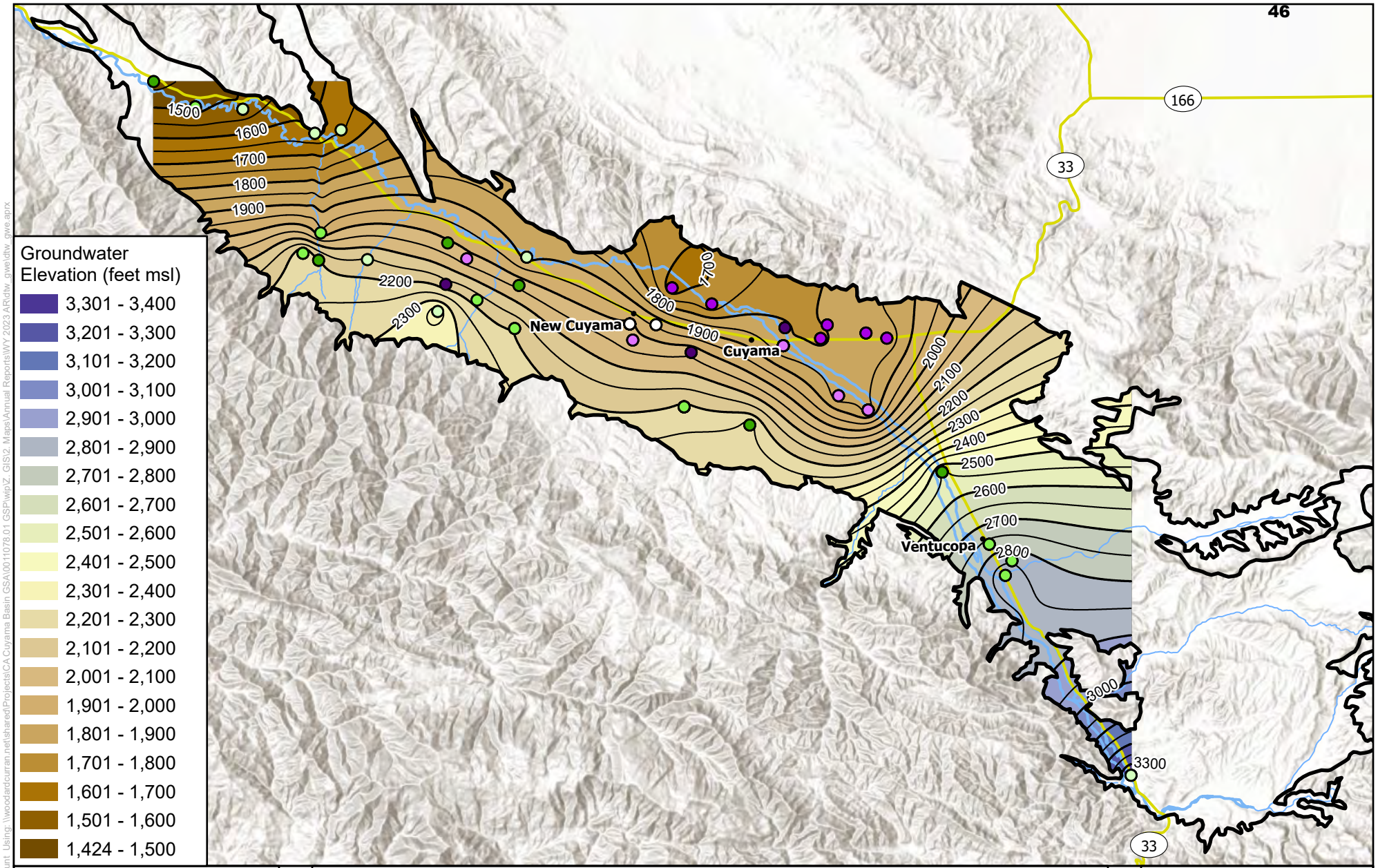

Figure 2-2: Spring 2023 Groundwater Elevation

Cuyama Valley Groundwater Basin

Legend

Well Depth (feet bgs)
- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- 801 - 1000
- 1001 - 1200
- Unknown

Contour (50 foot)
Highway
Town
Creek
Cuyama River
Cuyama Basin

GWE profile was interpolated using data measured from 4/24/2023 to 4/25/2023.

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

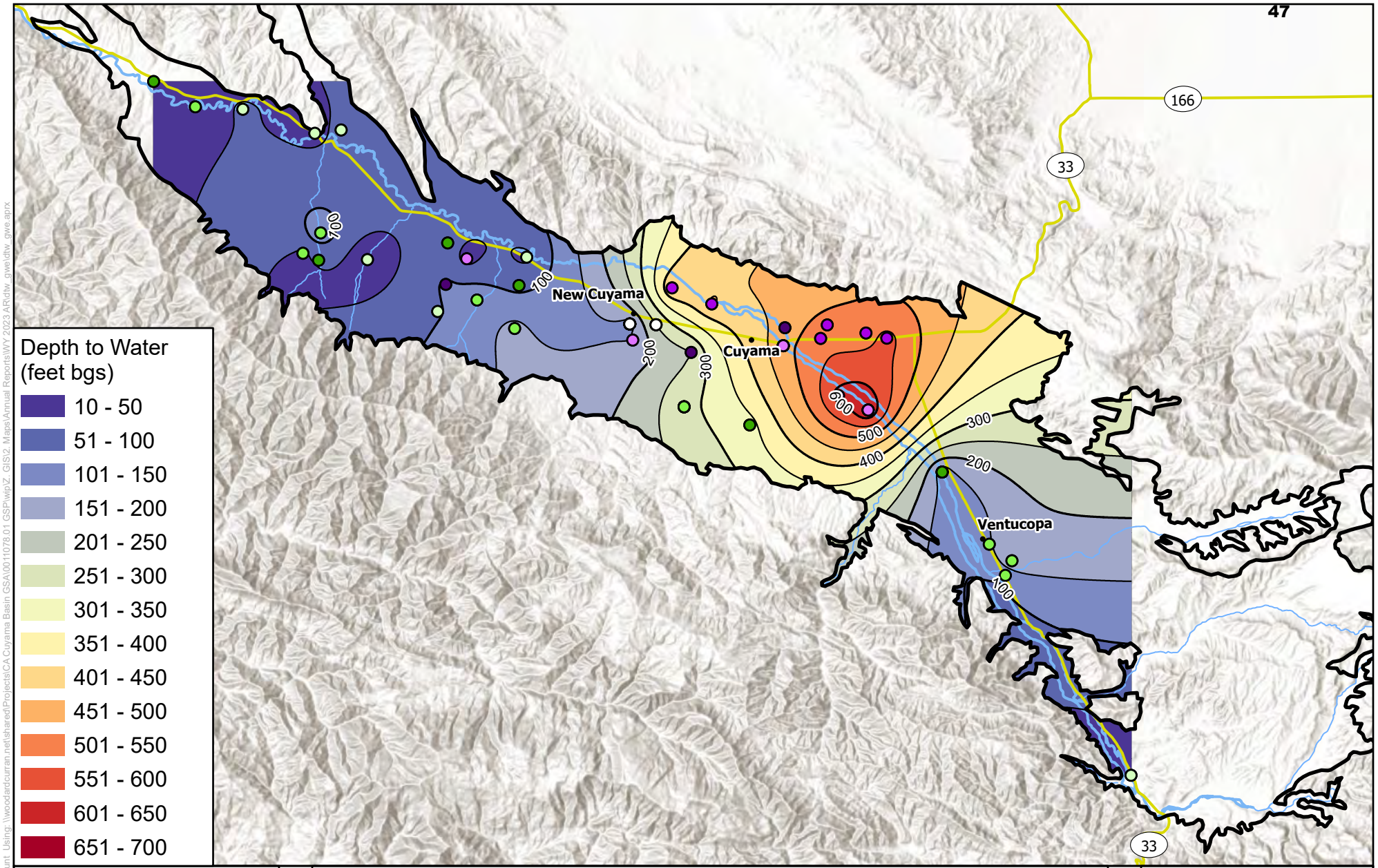

Figure 2-3: Spring 2023 Depth to Water

Cuyama Valley Groundwater Basin

Legend

Well Depth (feet bgs)
- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- 801 - 1000
- 1001 - 1200
- Unknown

Contour (50 foot)
Highway
Town
Creek
Cuyama River
Cuyama Basin

DTW profile was interpolated using data measured from 4/24/2023 to 4/25/2023.

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

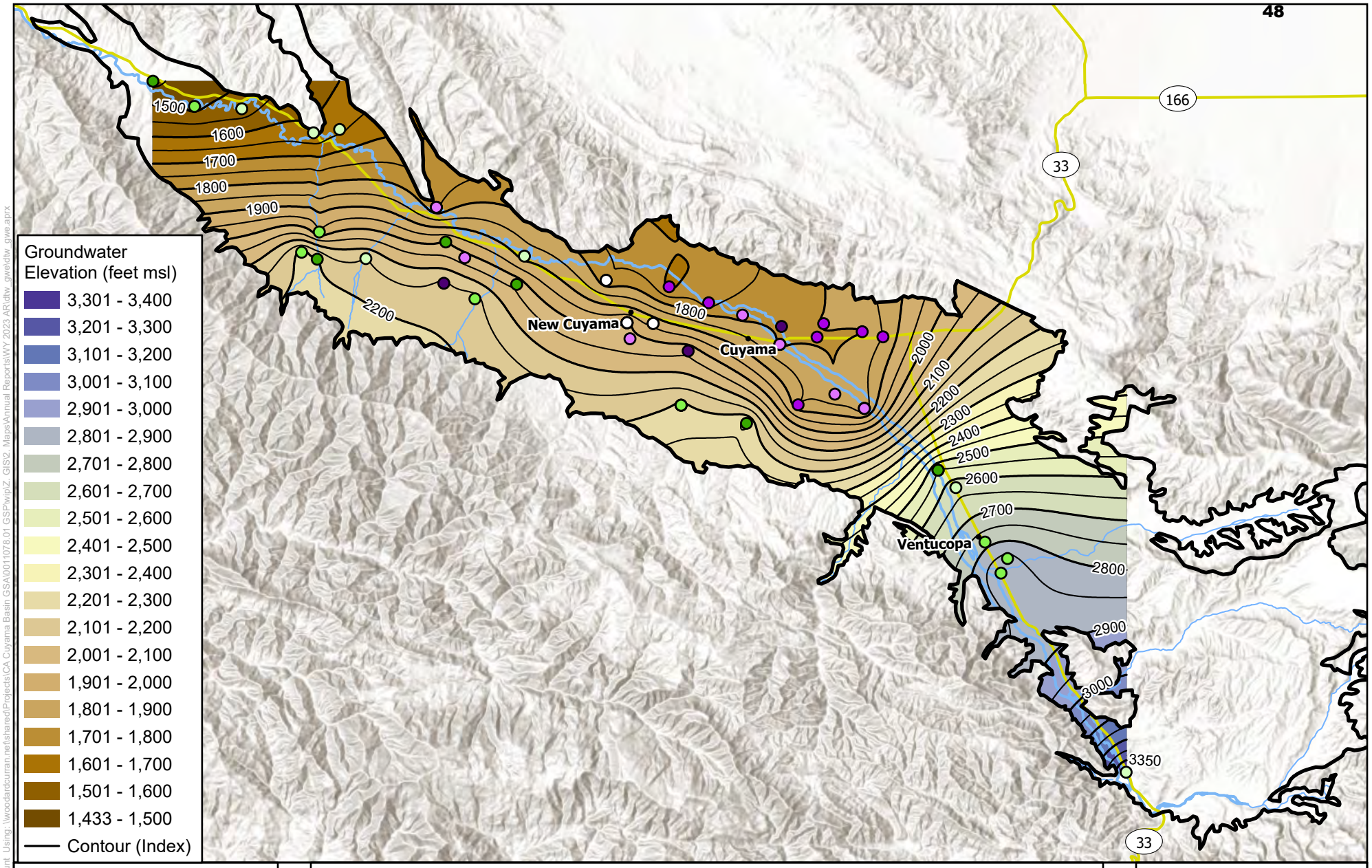

Figure 2-4: Fall 2023 Groundwater Elevation

Cuyama Valley Groundwater Basin

Legend

Well Depth (feet bgs)
- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- 801 - 1000
- 1001 - 1200
- Unknown

Contour (50 foot)
Highway
Town
Creek
Cuyama River
Cuyama Basin

GWE profile was interpolated using data measured from 10/24/2023 to 10/25/2023.

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

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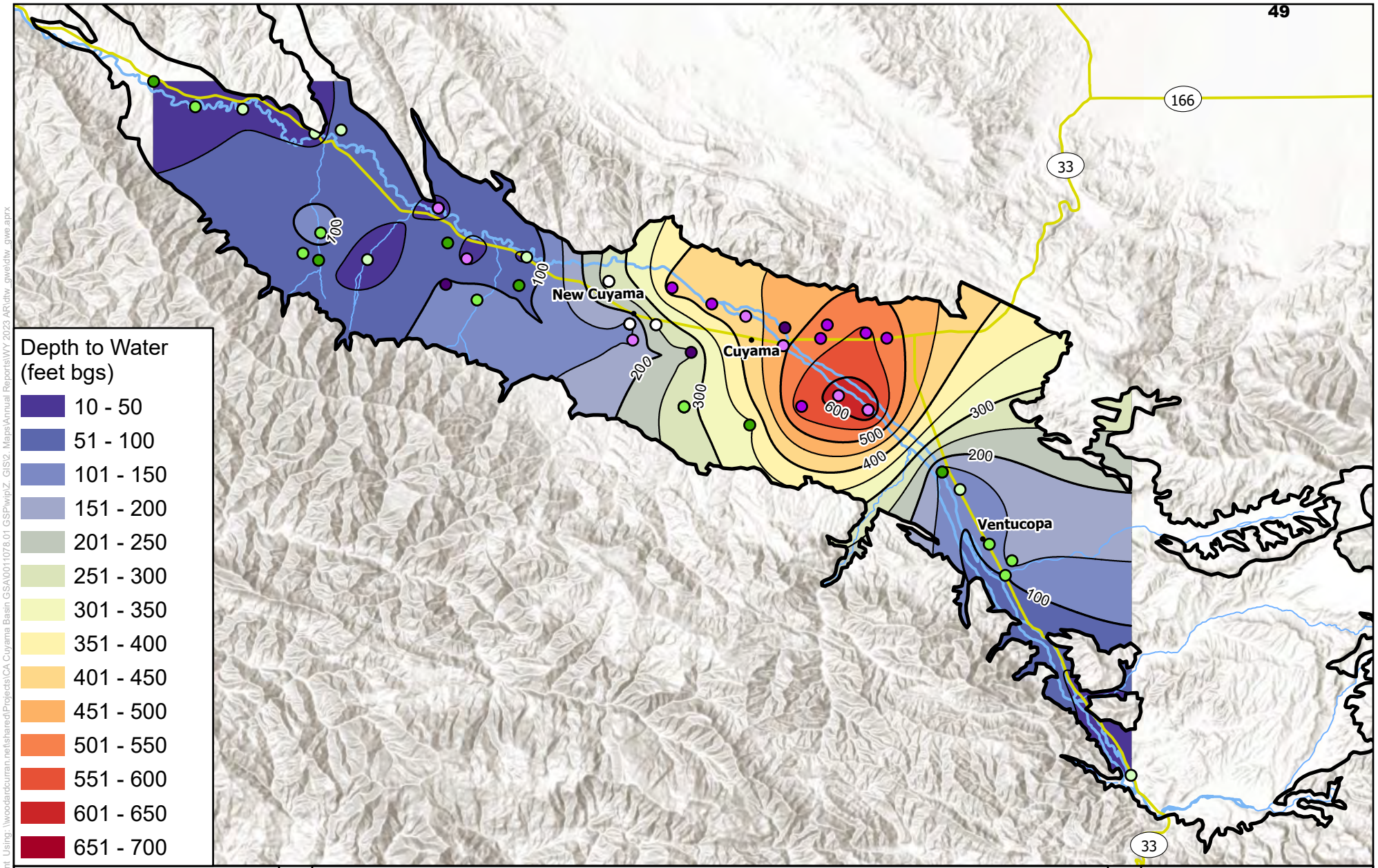

Figure 2-5: Fall 2023 Depth to Water

Cuyama Valley Groundwater Basin

Legend

Well Depth (feet bgs)
- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- 801 - 1000
- 1001 - 1200
- Unknown

Contour (50 foot)
Highway
Town
Creek
Cuyama River
Cuyama Basin

DTW profile was interpolated using data measured from 10/24/2023 to 10/25/2023.

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

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2.3 Hydrographs

Groundwater hydrographs were developed for each representative monitoring network well to provide indicators of groundwater trends throughout the Basin. Measurements from each well with historical monitoring data were compiled into one hydrograph for each well. A selection of wells from each threshold region are provided below, while hydrographs for every groundwater level representative network well are presented in Appendix A.

In many cases, changes in historical groundwater conditions at particular wells have been influenced by climactic patterns in the Basin. Historical precipitation is highly variable, with several relatively wet years and some multi-year droughts.

Groundwater conditions generally vary in different parts of the Basin. To provide a comparative analysis general groundwater trends are provided in **Table 2-1** and are accompanied by hydrographs for an example well in each threshold regions. A map of threshold regions is provided in **Figure 2-6**, which also shows the locations of example wells used in each threshold region.

Table 2-1: Groundwater Trends by Threshold Regions

Threshold Region	Groundwater Trend	Example Well(s)
Northwestern Region	An upward trend influenced by seasonal fluctuations. This is expected as a wet winter brought recharge to this area. Although there are recent changes in land use that have begun to pump groundwater, levels have risen over the past water year. Levels are approximately 150 ft above the Measurable Objective, about 50 ft higher than in the last Annual Report.	841 (**Figure 2-7**)
Western Region	Levels in this region showed a significant increase due to the wet water year to within 40 feet of ground surface. Current levels are approximately 50 ft above the Measurable Objective.	571 (**Figure 2-8**)
Central Region	Levels have historically had a steady downward trend with some seasonal fluctuations. This pattern remains for some wells but with slight bumps correlated with the wet year (Well 91) with trends continuing downward and, in some cases, levels surpassing minimum thresholds. There is some indication of recovery in some wells such as Well 74 where groundwater levels improved up to the MO and then continued the downward trend again.	74 and 91 (**Figure 2-9 & Figure 2-10**)
Eastern Region	This region has seen an overall decline over several decades. However, with the wet conditions, groundwater trends appear to be approaching Measurable Objective and, in some cases, surpassing the Measurable Objective.	62 (**Figure 2-11**)
Southeastern Region	Levels in this relatively small region decreased slightly during the last drought but have recovered over the past few years and are well above the Measurable Objective.	89 (**Figure 2-12**)

Northwestern Region

Central Region

Western Region

Badlands Region

Eastern Region

Southeastern Region

Russell Fault

Graveyard Ridge Fault

Santa Barbara Canyon Fault

Ventucopa

833 836 830 832 119 845 841 17 571 118 123 573 110 568 114 102 604 609 608 612 615 633 629 74 72 77 613 103 115 107 106 112 474 324 325 99 96 95 610 317 91 101 62 85 100 89

Figure 2-6: Cuyama GW Basin Groundwater Level Representative Wells & Thresholds Regions

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2023

Woodard & Curran

Legend

- Cuyama Basin
- Representative Wells
- Towns
- Faults
- Highways
- Cuyama River
- Streams

Threshold Regions

- Badlands Region
- Central Region
- Eastern Region
- Northwestern Region
- Southeastern Region
- Western Region

N

0 2.75 5.5 11 Miles

Plot Exported: 3/2/2023 By: mvillalo Using: \\woodardcurran.net\shared\Projects\RMC\SAC\001078.00 - Cuyama Basin GSPG - 2023 Annual Report\Maps\Figure 2-6 Thresholds.mxd

Figure 2-7: Example Well Hydrographs – Northwestern Region

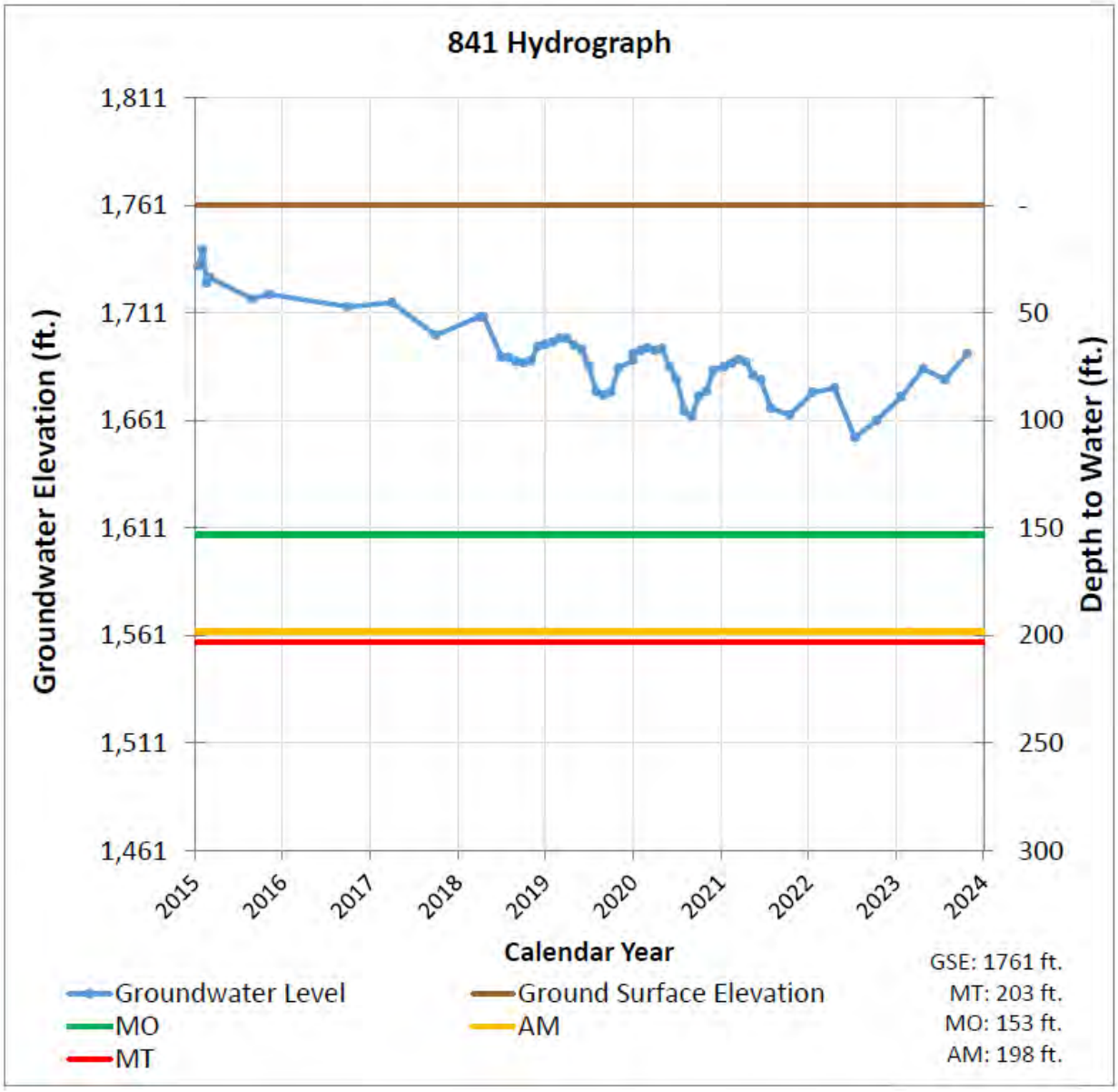


Figure 2-8: Example Well Hydrographs – Western Region

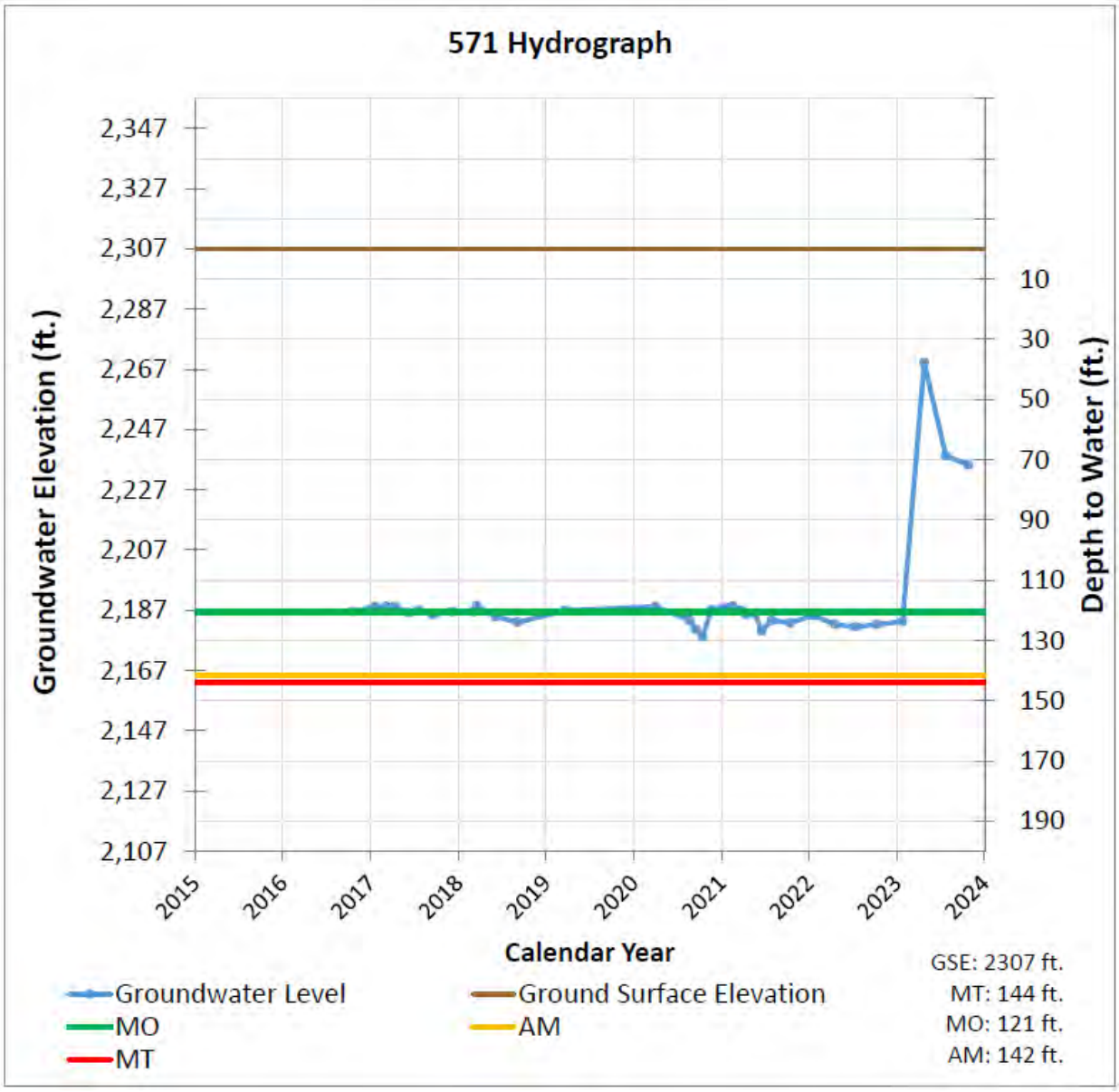


Figure 2-9: Example Well Hydrographs – Central Region

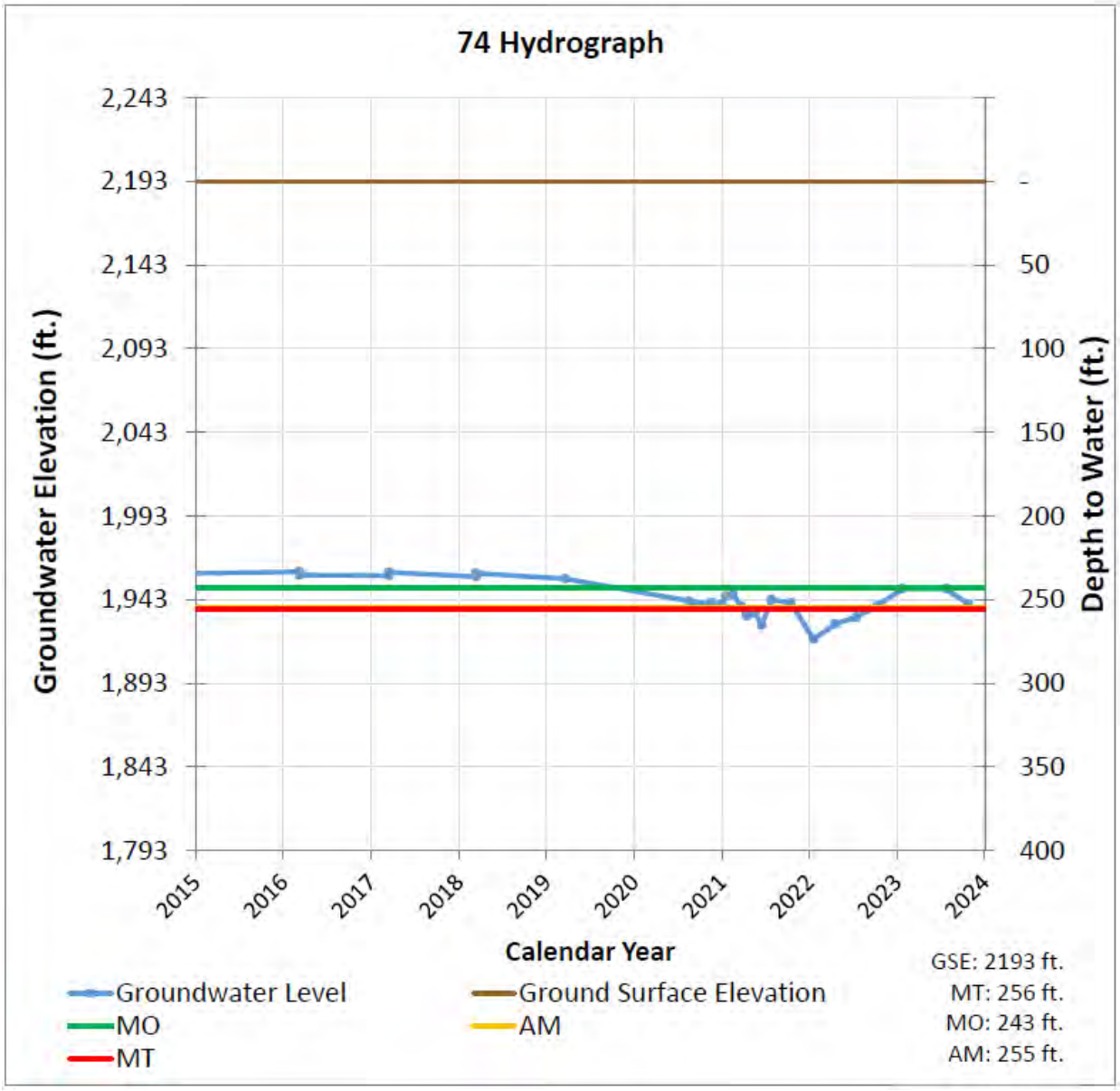


Figure 2-10: Example Well Hydrographs – Central Region

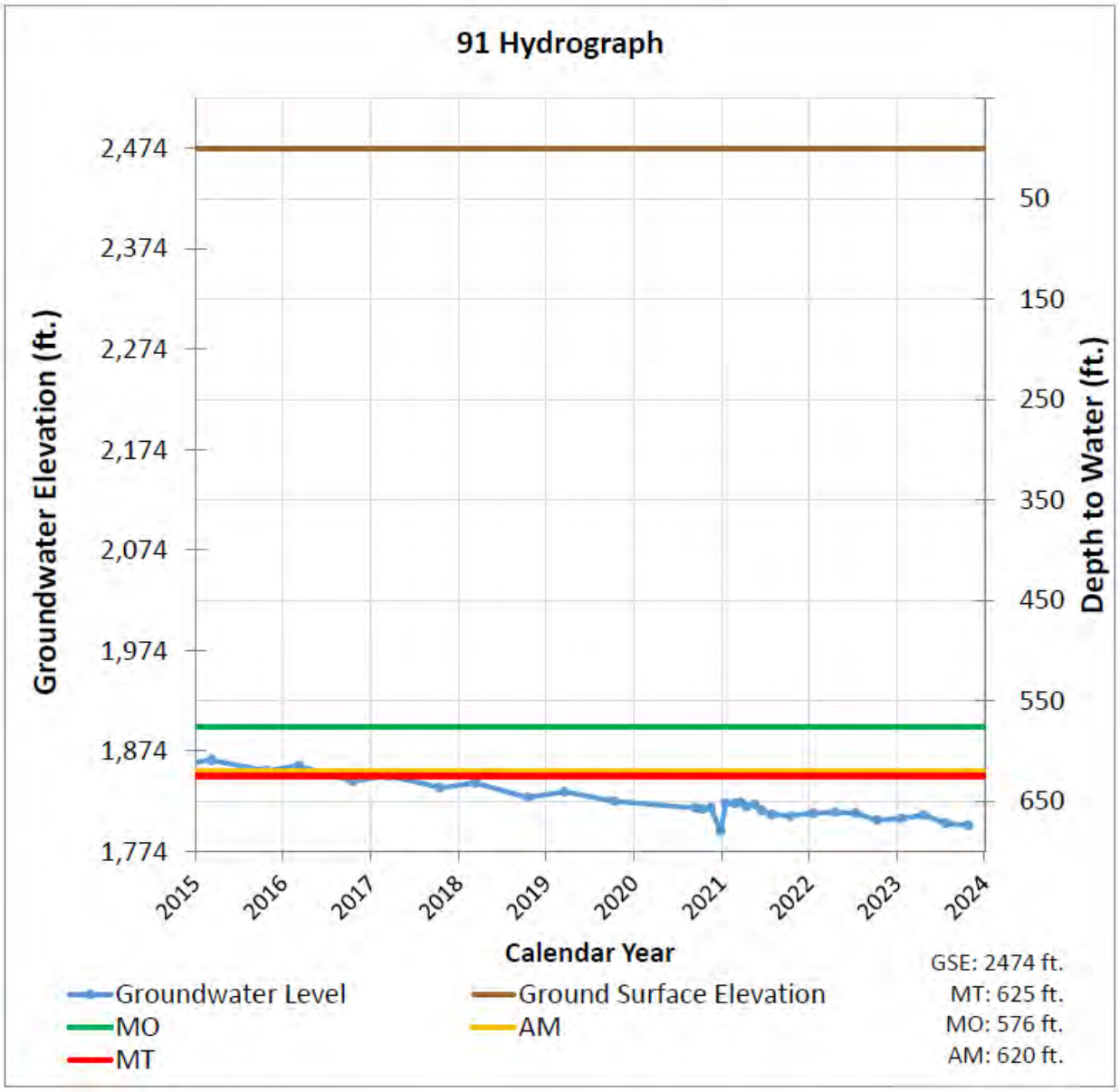


Figure 2-11: Example Well Hydrographs – Eastern Region

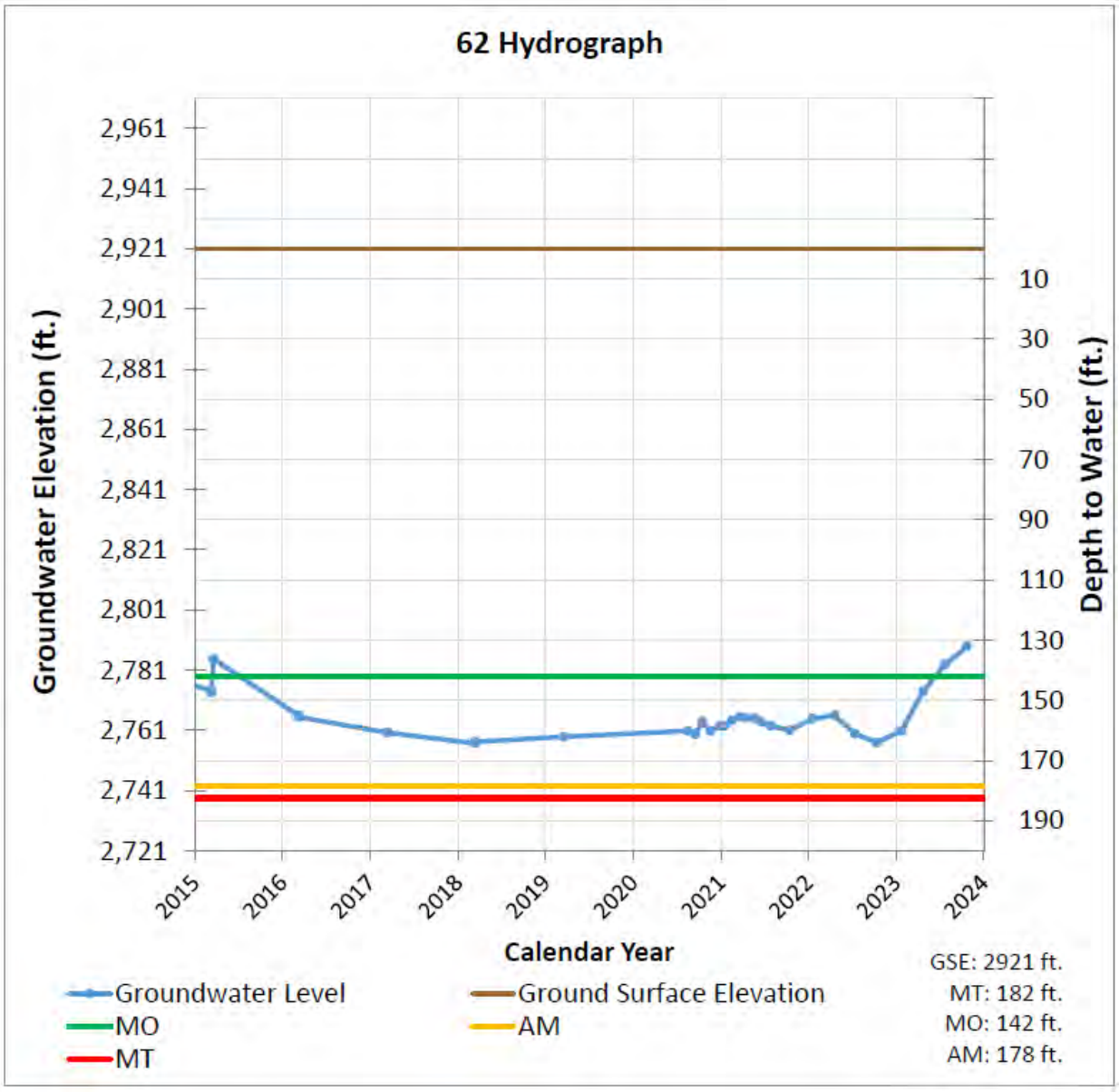
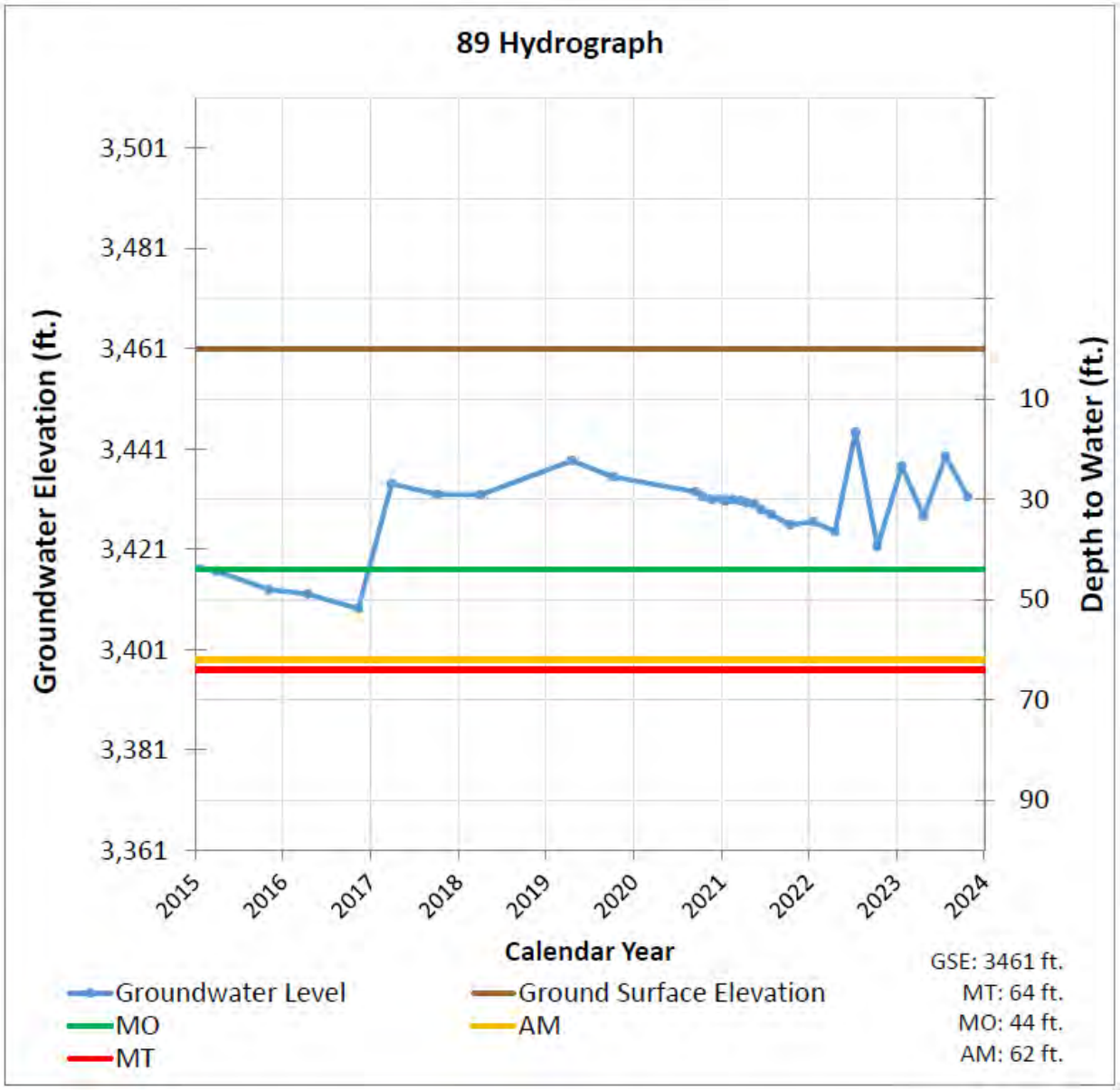


Figure 2-12: Example Well Hydrographs – Southeastern Region



Section 3. Water Use

§356.2 (b) (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.
§356.2 (b) (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.
§356.2 (b) (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.

3.1 Groundwater Extraction

Water budgets in the Cuyama Basin GSP were developed using the Cuyama Basin Water Resources Model (CBWRM) model, which is a fully integrated surface and groundwater flow model covering the Basin. The CBWRM was used to develop a historical water budget that evaluated the availability and reliability of past surface water supply deliveries, aquifer response to water supply, and demand trends relative to water year type. For the GSP, the CBWRM was used to develop water budget estimates for the hydrologic period of 1998 through 2017. As discussed in the GSP, the model was developed based on the best available data and information as of June 2018. An assessment of model uncertainty included in the GSP estimated an error range in overall model results of about +/- 10%. An update of the model, including re-calibration based on recently available data, was completed in June 2022. It is expected that the model will be refined in the future as improved and updated monitoring information becomes available for the Basin. For the current Annual Report, the CBWRM model was extended to include the 2023 water year, utilizing updated land use, temperature, and precipitation[3] data from those years.

Figure 3-1 shows the annual time series of groundwater pumping for the water years 1998 through 2023.[4] The CBWRM estimates a total groundwater extraction amount of 49,900 AF in the Cuyama Basin in the 2023 water year. This reflects a decrease of about 7,500 AF as compared to 2022. Almost all groundwater extraction in the Basin is for agriculture use. There is approximately 300 AF of domestic use in each year, with the remainder in each year being for agricultural use.

The total pumping volume in the basin in water year 2023 was significantly higher than the sustainable yield of 20,000 AF estimated in the GSP. The GSP included a pumping allocations management action to reduce pumping levels to sustainable levels by 2040. See section 7.5.2 for an update on progress made to implement this management action.

[3] Precipitation data provided by PRISM was updated and there are minor changes to some historical (pre-2020) data reflected in the water budget results when compared to previous reports.

[4] Groundwater extraction estimates for years 1998 through 2022 differ from estimates reported in previous Cuyama Basin Annual Reports due to model updates using the most recent land use data.

Figure 3-1: Annual Groundwater Extraction in the Cuyama Basin in Water Years 1998-2023

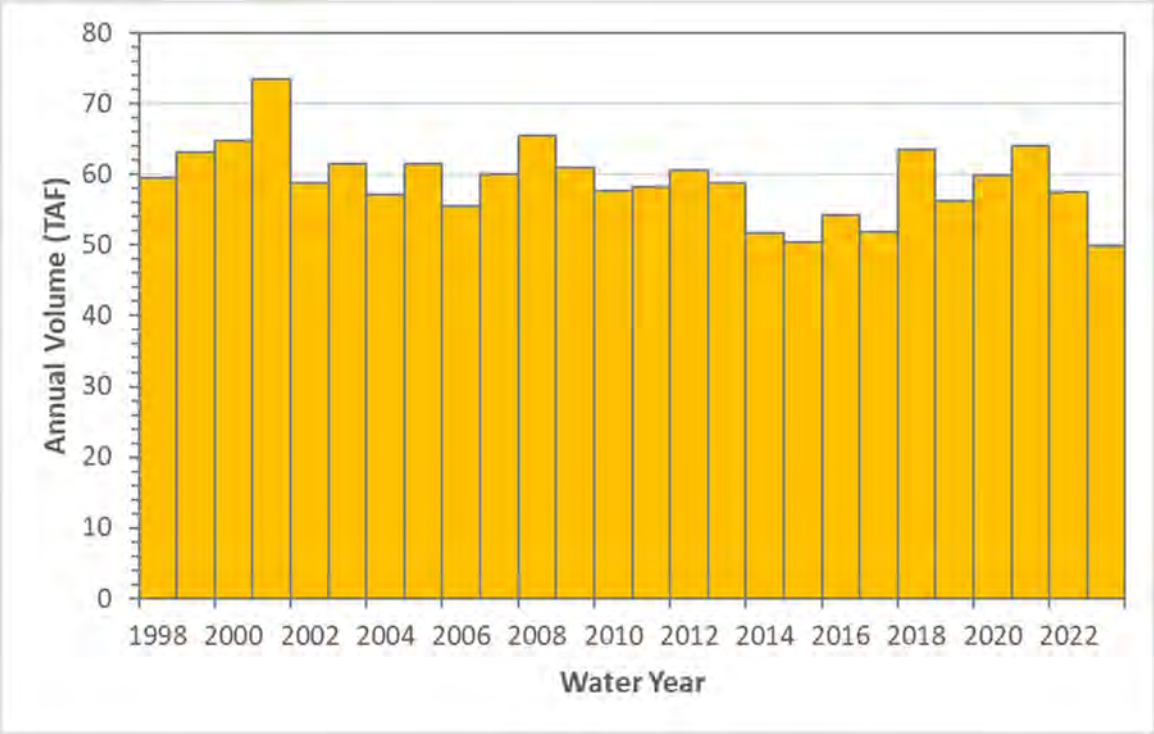


Figure 3-2 shows the locations where groundwater is applied in the Basin. The locations of groundwater use have not changed significantly since completion of the GSP.

Figure 3-3: Shows the active pumping wells within the Cuyama Basin Boundary.

3.2 Surface Water Use

No surface water was used in the Cuyama Basin during the reporting period.

3.3 Total Water Use

Since there is no surface water use in the Cuyama Basin, the total water use equals the groundwater extraction in each year, as shown in Section 3.1.

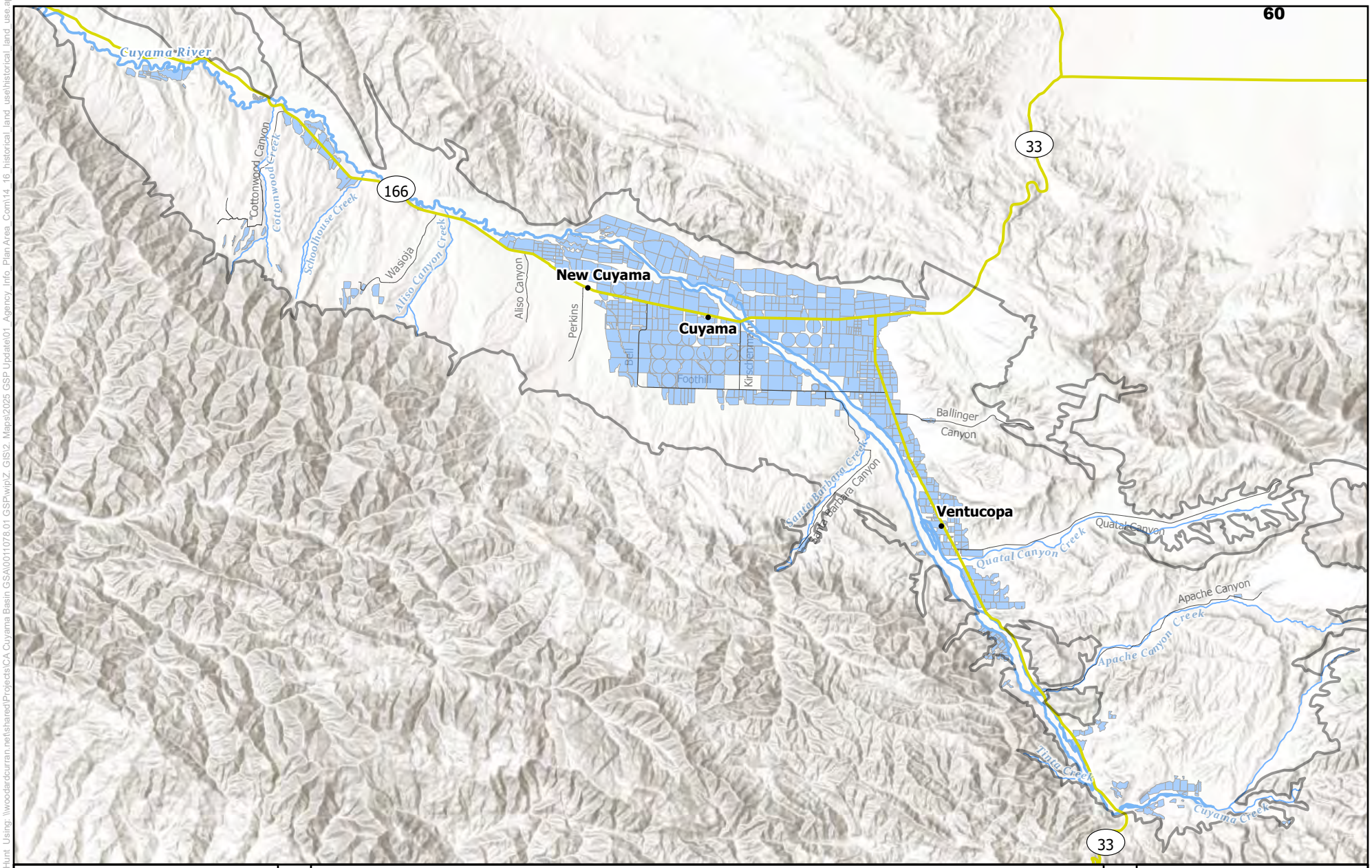


Figure 3-2: Water Source for Land Use

Cuyama Valley Groundwater Basin

Legend

Water Source

- Irrigated by Surface Water
- irrigated by Surface and Groundwater
- Irrigated by Groundwater

- Highway
- Local Road
- Town
- Cuyama River
- Creek
- Cuyama Basin

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: December 2023

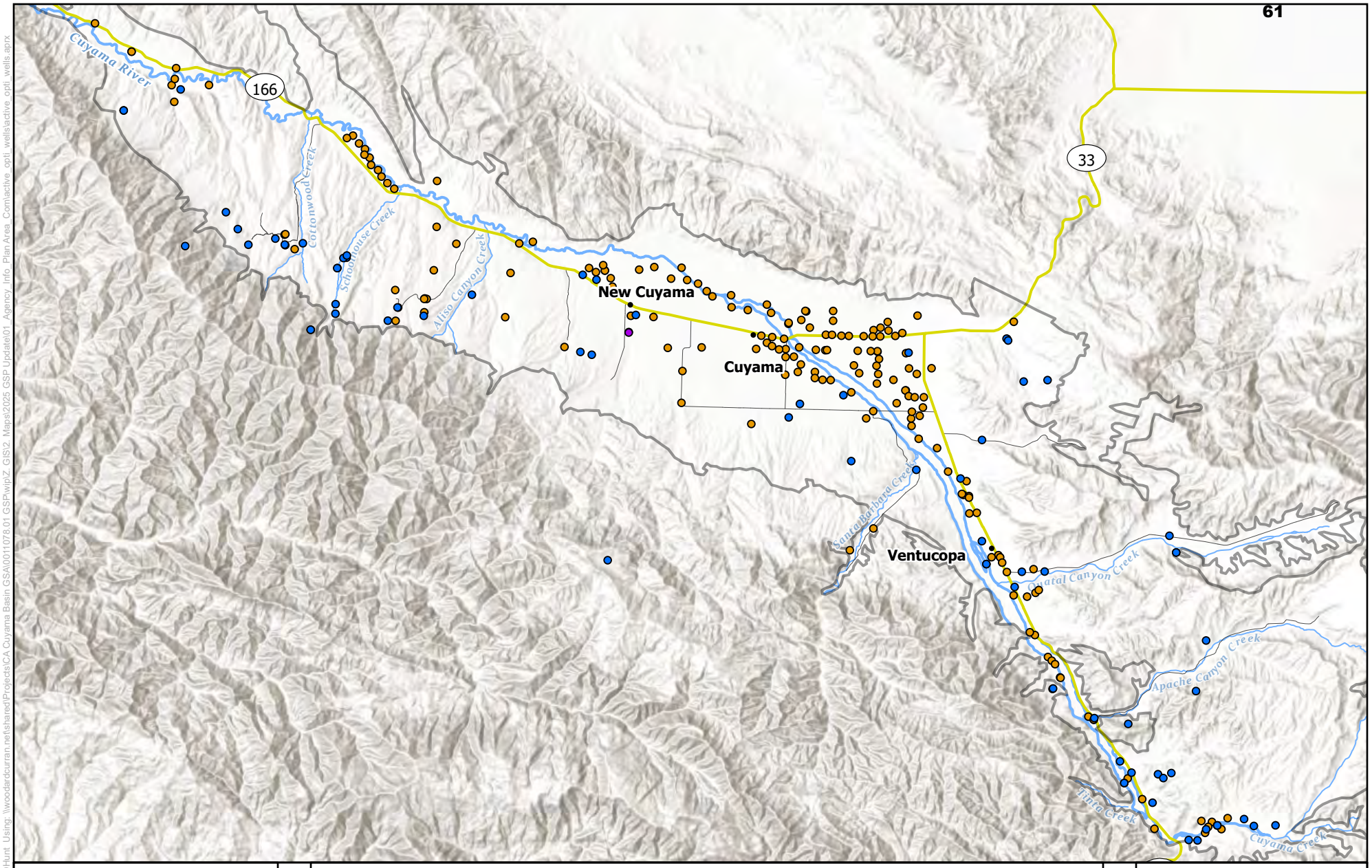


Figure 3-3: Active Wells in Network

Cuyama Valley Groundwater Basin

Legend

Well Type
- Domestic
- Production
- Public

Highway
Local Road
Town
Cuyama River
Creek
Cuyama Basin

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: December 2023

Section 4. Change in Groundwater Storage

§356.2 (b) (5)	Change in groundwater in storage shall include the following:
§356.2 (b) (5) (A)	Change in groundwater in storage maps for each principal aquifer in the basin.
§356.2 (b) (5) (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.

Figure 4-1 shows contours of the estimated change in groundwater levels in the Cuyama Basin between fall 2022 and fall 2023. The changes shown are based on historical measurements of groundwater elevations in Cuyama Basin representative wells that have recorded measurements in the fall period of each year. These contours are useful at the planning level for understanding groundwater levels across the Basin, and to identify general horizontal gradients and regional groundwater level trends. The contour map is not indicative of exact values across the Basin because groundwater contour maps approximate conditions between measurement points, and do not account for topography.

A quantitative estimate of the annual change in groundwater storage was estimated using the CBWRM model, which was extended to include the 2023 water year as described in the groundwater extraction section above. The CBWRM was used to estimate the full groundwater budget for each year in the Cuyama Basin, which consists of a single principal aquifer. The estimated values for each water budget component in each of the past four years are shown in **Table 4-1**. The CBWRM estimates reductions in groundwater storage of 44,800 AF in 2021, 38,500 AF in 2022, and an increase of 1000 AF in 2023.

Table 4-1: Groundwater Budget Estimates for Water Years 2020, 2021, 2022, and 2023

Component	Water Year 2021 (AFY)	Water Year 2022 (AFY)[5]	Water Year 2023 (AFY)
Inflows			
Deep percolation	17,500	20,900	33,900
Stream seepage	800	4,900	11,700
Subsurface inflow	900	1,400	5,300
Total Inflow	19,200	27,200	50,800
Outflow			
Groundwater pumping	64,000	57,400	49,900
Total Outflow	64,000	57,400	49,900
Change in Storage	**-44,800**	**-30,200**	**+1000**

[5] The data for water year 2022 differs from the previous Annual Report due to updates in land use classifications

Table 4-2 shows groundwater extractions by water use sector. The primary use of groundwater extractions in the basin is agricultural, accounting for 99% of the groundwater utilized. Urban water use is primarily in Cuyama and New Cuyama for drinking water supply. Groundwater use for other sectors in the Cuyama Basin is minimal.

As shown in **Table 4-3,** the groundwater extraction estimates were developed using the CBWRM model developed by the CBGSA. The model uses crop acreage from local landowners and LandIQ to estimate crop demands.

Table 4-2: Groundwater Extraction By Water Use Sector (2023)

Groundwater Extraction Sector	Total Water Use (Acre-feet)
Agricultural	49,700
Urban	200
Industrial	0
Managed Wetlands	0
Managed Recharge	0
Native Vegetation	0
Other	0
Total	**49,900**

Table 4-3: Groundwater Extraction Measurement Volume Methods and Accuracy Table

Groundwater Extraction Volume	Measurement Type	Method Description	Accuracy	Accuracy Description
49,900	CBRWM	Indirect estimate of groundwater extraction based upon a calculated demand. Crop demand is estimated using locally reported crops per field with the spatial support of LandIQ.	+/-10%	CBWRM utilizes available land use, precipitation, evapotranspiration, soil survey, geological survey, population and per-capita water use data in the subbasin. Since the primary water use sector is agriculture, LandIQ was correlated with local survey data to better estimate crop demand.

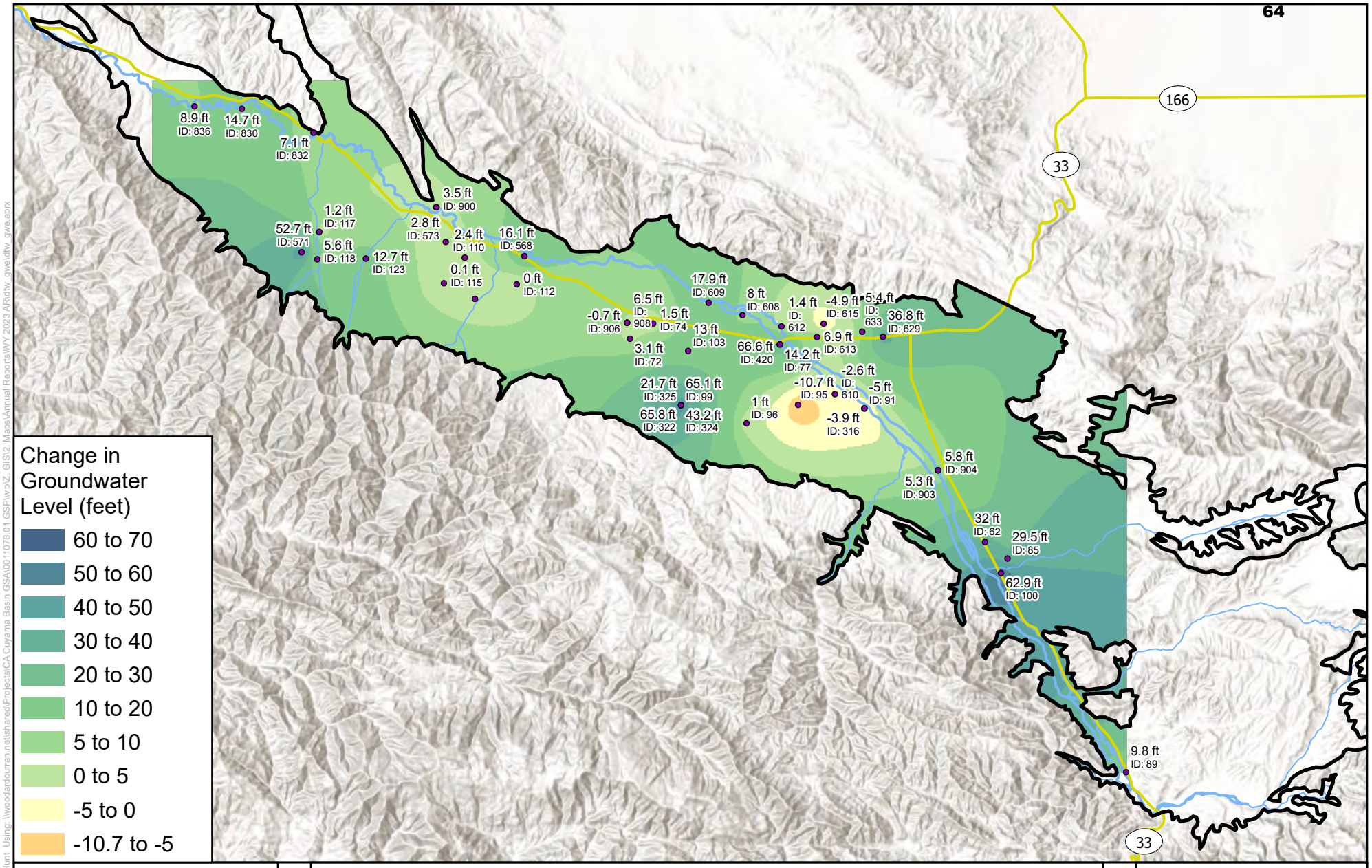


Figure 4-1: Groundwater Level Change - Fall 2022 to 2023

Cuyama Valley Groundwater Basin

Legend

- Measurement Well
- Cuyama Basin
- Highway
- Cuyama River
- Creek

GWL difference was calculated from wells with measurements collected in both October 2022 and 2023. "ID" labels correspond to Opti ID numbers - refer to their individual hydrographs for a more informative view of GWL change.

N

Woodard & Curran

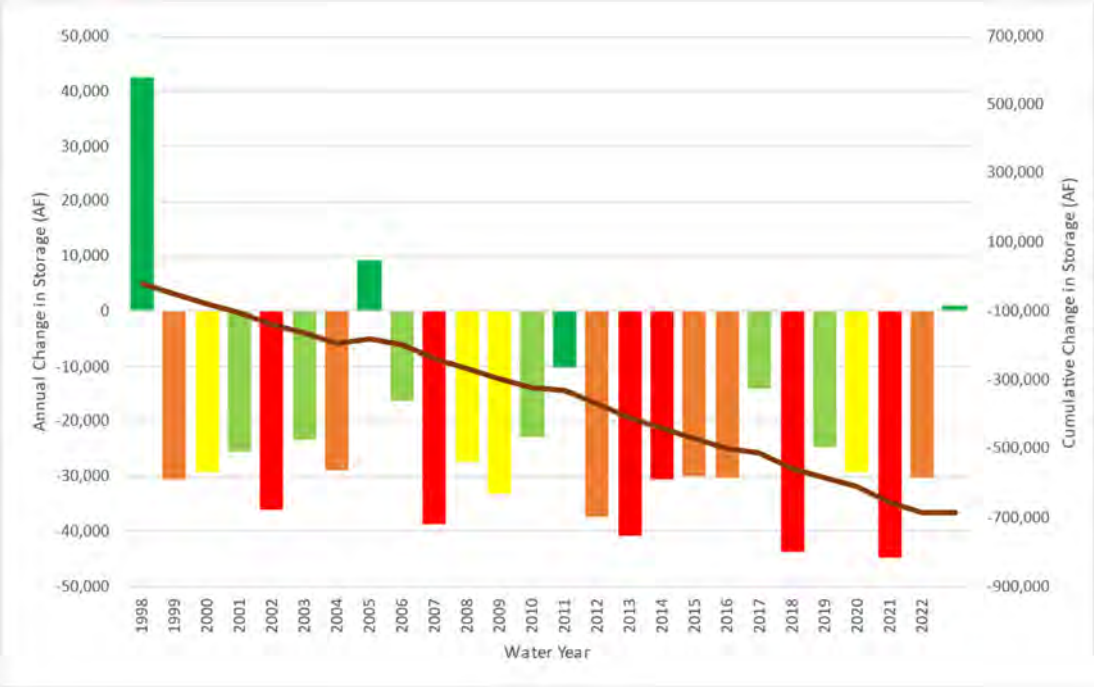
0 1.25 2.5 5 Miles

Map Created: February 2024

Figure Exported: 2/14/2024 By: DHunt Using: \\woodardcurran.net\shared\Projects\CA\Cuyama Basin GSA\0011078.01 GSPWip\Z_GIS\2_Maps\Annual Reports\WY 2023 AR\dtw_gwel\dtw_gwe.aprx

Figure 4-2 shows the historical change in groundwater storage by year, water year type,[6] and cumulative water volume in each year for the period from 1998 through 2023.[7] The change in groundwater storage in each year was estimated by the CBWRM model. The color of bar for each year of change in storage correlates a water year type defined by Basin precipitation.

Figure 4-2: Change in Groundwater Storage by Year, Water Year Type, and Cumulative Water Volume



[6] Water year types are customized for the Basin watershed based on annual precipitation as follows:

- Wet year = more than 19.6 inches
- Above normal year = 13.1 to 19.6 inches
- Below normal year = 9.85 to 13.1 inches
- Dry year = 6.6 to 9.85 inches
- Critical year = less than 6.6 inches.

[7] Groundwater storage change estimates for years 1998 through 2021 differ from estimates reported in previous Cuyama Basin Annual Reports due to model updates using the most recent land use data.

Section 5. Groundwater Quality

As discussed in Section 4.8 of the Cuyama GSP, the CBGSA's groundwater quality network is designed to monitor salinity levels (as total dissolved solids (TDS)). The groundwater quality network is composed of 64 wells representative wells and 13 non-representative wells, for a total of 77 wells. The representative wells are listed in **Table 5-1** and all representative and non-representative wells are shown on **Figure 5-1.**

In 2023 a comprehensive review of the groundwater quality network was conducted after three years of annual sampling for TDS had been performed. Wells were evaluated with respect to the following issues: lack of landowner agreements for monitoring, access issues at well sites, access issues due to weather. Based on this analysis, the CBGSA board approved a revised water quality network in November 2023, which is shown in **Figure 5-2.** This revised network will take effect when the 2025 GSP Update is complete and will provide adequate coverage in the Basin while ensuring continued and consistent monitoring during the GSP implementation period.

In 2023, the CBGSA collected TDS measurements at 22 of the 64 representative wells (34%) in the groundwater quality monitoring network. The results are listed in **Table 5-1** and shown on **Figure 5-3.** Of the 22 representative wells measured in water year 2023, three wells exceeded their measurable objective, and one well exceeded the minimum threshold and 2025 interim milestone. Therefore, 13% of measured wells exceeded their measurable objective and 4% exceeded their minimum threshold. However, 66% of wells were not sampled due to limitations in gaining access to well sites. Water quality results (as compared to minimum thresholds) can be found in **Figure 5-4**. Since the GSA has only attempted to sample these wells three times and significant differences were noted relative to previous measurements (in both a positive and negative direction), the CBGSA considers it premature to use this data to evaluate the performance of groundwater quality at this time. The CBGSA will continue to sample for TDS and will assess the sustainability criteria for TDS in the future.

The CBGSA conducts its own sampling for nitrate and arsenic once every five years. In the interim years the CBGSA leverages existing monitoring programs for nitrate and arsenic through California State Water Resource Control Board Groundwater Ambient Monitoring and Assessment (GAMA) Database, which includes in particular data from the Central Coast Regional Water Board's Irrigated Lands Program for nitrates as part of its database. Nitrate and arsenic data are shown on **Figure 5-5** for nitrate **Figure 5-6** for arsenic. The table on the **Figure 5-6** shows arsenic results from a multi -completion well. As you can see arsenic varies with depth so results for all depths are shown.

These maps include data downloaded from GAMA and the sampling results from the CBGSA's sampling for these constituents conducted in 2022 and reported in the WY 2022 Annual Report. Because few measurements were available for WY 2023, these maps include data for both water years 2022 and 2023 in the Cuyama Basin. The CBGSA will continue to rely on these third-party sources as described in the 2022 GSP update Supplemental Section 2.2.7.

Table 5-1: Groundwater Quality Network Wells and TDS Measurements

	TDS					
Opti ID	Date	Measurement (mg/L)	MO (mg/L)	MT (mg/L)	2025 Interim Milestone (mg/L)	Interim Milestone Status
61	-	-	585	615	615	
72	8/23/2023	900	996	1,023	1,023	Below IM
73	-	-	805	856	856	
74	8/23/2023	1310	1,500	1,833	1,833	Below IM
76	-	-	1,500	2,307	2,307	
77	7/24/2023	1120	1,500	1,592	1,592	Below IM
79	-	-	1,500	2,320	2,320	
81	-	-	1,500	2,788	2,788	
83	8/23/2023	1120	1,500	1,726	1,726	Below IM
85	-	-	618	1,391	1,391	
86	-	-	969	975	975	
87	-	-	1,090	1,165	1,165	
88	8/23/2023	320	302	302	302	Above IM
90	-	-	1,500	1,593	1,593	
91	7/25/2023	1020	1,410	1,487	1,487	Below IM
94	8/23/2023	1190	1,050	1,245	1,245	Below IM
95	8/23/2023	1340	1,500	1,866	1,866	
96	8/23/2023	1100	1,500	1,632	1,632	Below IM
98	-	-	1,500	2,400	2,400	
99	8/24/2023	1140	1,490	1,562	1,562	Below IM
101	8/23/2023	1210	1,500	1,693	1,693	Below IM
102	8/23/2023	1610	1,500	2,351	2,351	Below IM
130	-	-	1,500	1,855	1,855	
131	-	-	1,500	1,982	1,982	
157	-	-	1,500	2,360	2,360	
196	-	-	851	904	904	
205	-	-	253	269	269	
226	-	-	1,500	1,844	1,844	
227	-	-	1,500	2,230	2,230	
242	8/23/2023	780	1,470	1,518	1,518	Below IM
269	-	-	1,500	1,702	1,702	
309	-	-	1,410	1,509	1,509	
316	7/25/2023	1060	1,380	1,468	1,468	Below IM
317	-	-	1,260	1,337	1,337	
318	-	-	1,080	1,152	1,152	
322	8/24/2023	1140	1,350	1,386	1,386	Below IM
324	8/24/2023	740	746	777	777	Below IM
325	8/24/2023	1070	1,470	1,569	1,569	Below IM
400	-	-	918	976	976	
420	7/24/2023	1080	1,430	1,490	1,490	Below IM
421	7/24/2023	1280	1,500	1,616	1,616	Below IM

	TDS					
Opti ID	Date	Measurement (mg/L)	MO (mg/L)	MT (mg/L)	2025 Interim Milestone (mg/L)	Interim Milestone Status
422	-	-	1,500	1,942	1,942	
424	8/23/2023	1260	1,500	1,588	1,588	Below IM
467	8/23/2023	1070	1,500	1,764	1,764	Below IM
568	8/23/2023	860	871	1,191	1,191	Below IM
702	-	-	110	2,074	2,074	
703	-	-	400	4,097	4,097	
710	-	-	1,040	1,040	1,040	
711	-	-	928	928	928	
712	-	-	977	978	978	
713	-	-	1,200	1,200	1,200	
721	-	-	1,500	2,170	2,170	
758	-	-	900	954	954	
840	-	-	559	559	559	
841	-	-	561	561	561	
842	-	-	547	547	547	
843	-	-	569	569	569	
844	-	-	481	481	481	
845	-	-	1,250	1,250	1,250	
846	-	-	918	918	918	
847	-	-	480	480	480	
848	-	-	674	674	674	
849	-	-	1,500	1,780	1,780	
850	-	-	472	472	472	

Note: Shaded cells represent sustainable management criteria exceedances. “ND” indicates that a measurement was taken, but no constituent was detected.

703
846
849
848
847
840
850
842
843
Russell Fault
Turkey Trap Ridge Fault
102
Graveyard Ridge Fault
712
72
73
74
400
467
424
79
81
98
96
95
309
90
Santa Barbara Canyon Fault
83
242
710
131
227
226
85
86
758
87
88
204
196
130
157
702

Figure 5-1: Cuyama GW Basin Groundwater Quality Representative Wells

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

December 2019

WOODARD &CURRAN

Legend

- Cuyama Basin
- Towns
- Faults
- Highways
- Cuyama River
- Streams
- Representative Groundwater Quality Wells

N

0 1.75 3.5 7 Miles

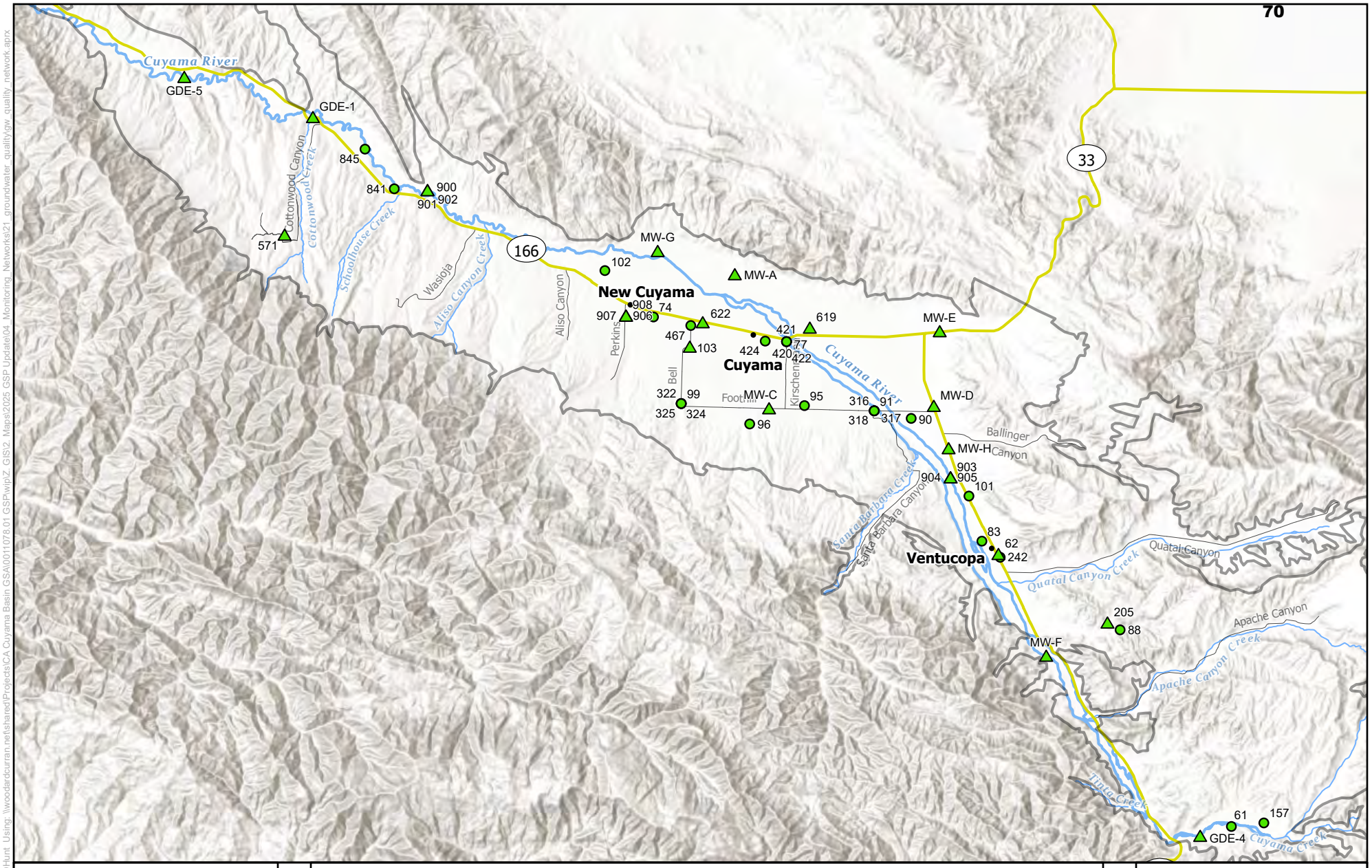


Figure 5-2: Updated Groundwater Quality Monitoring Network

Cuyama Valley Groundwater Basin

Legend

Network Well
- Representative Monitoring
- Non-representative Monitoring

Highway
Local Road
Town
Cuyama River
Creek
Cuyama Basin

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: December 2023

Figure Exported: 12/27/2023 By: DHunt Using: \\woodardcurran.net\shared\Projects\CA Cuyama Basin GSA\001078.01 GSP\wip\Z. GIS\2. Maps\2025 GSP Update\04. Monitoring_Networks\21_groundwater_quality\gw_quality_network.aprx

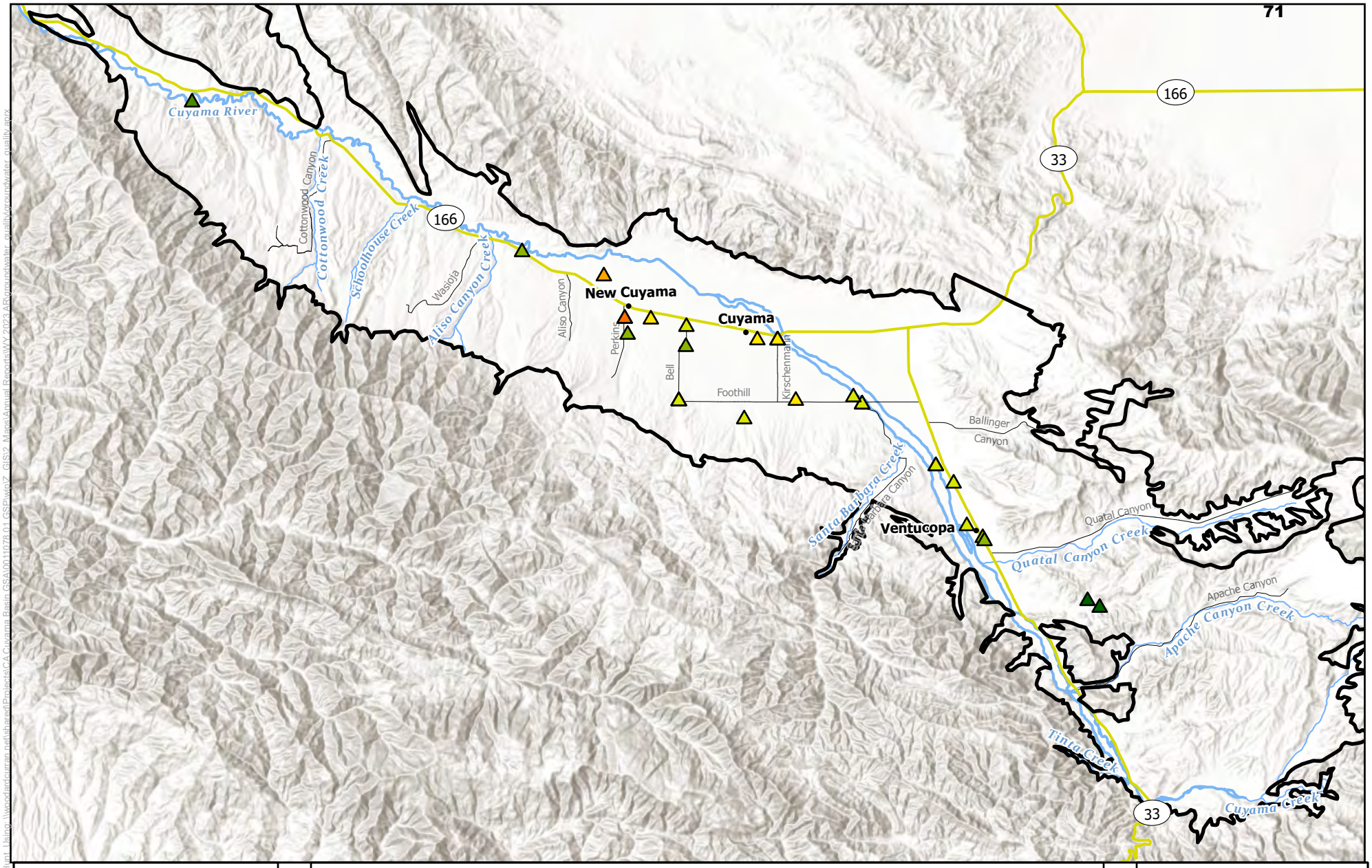


Figure 5-3: Groundwater Quality Measurements - TDS

2023 Data

Cuyama Valley Groundwater Basin

Legend

- < 500 mg/L
- 501 - 750 mg/L
- 751 - 1,000 mg/L
- 1,001 - 1,250 mg/L
- 1,251 - 1,500 mg/L
- 1,501 - 1,750 mg/L
- 1,751 - 2,000 mg/L
- 2,001 - 2,250 mg/L
- Highway
- Local Road
- Town
- Creek
- Cuyama River
- Cuyama Basin

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

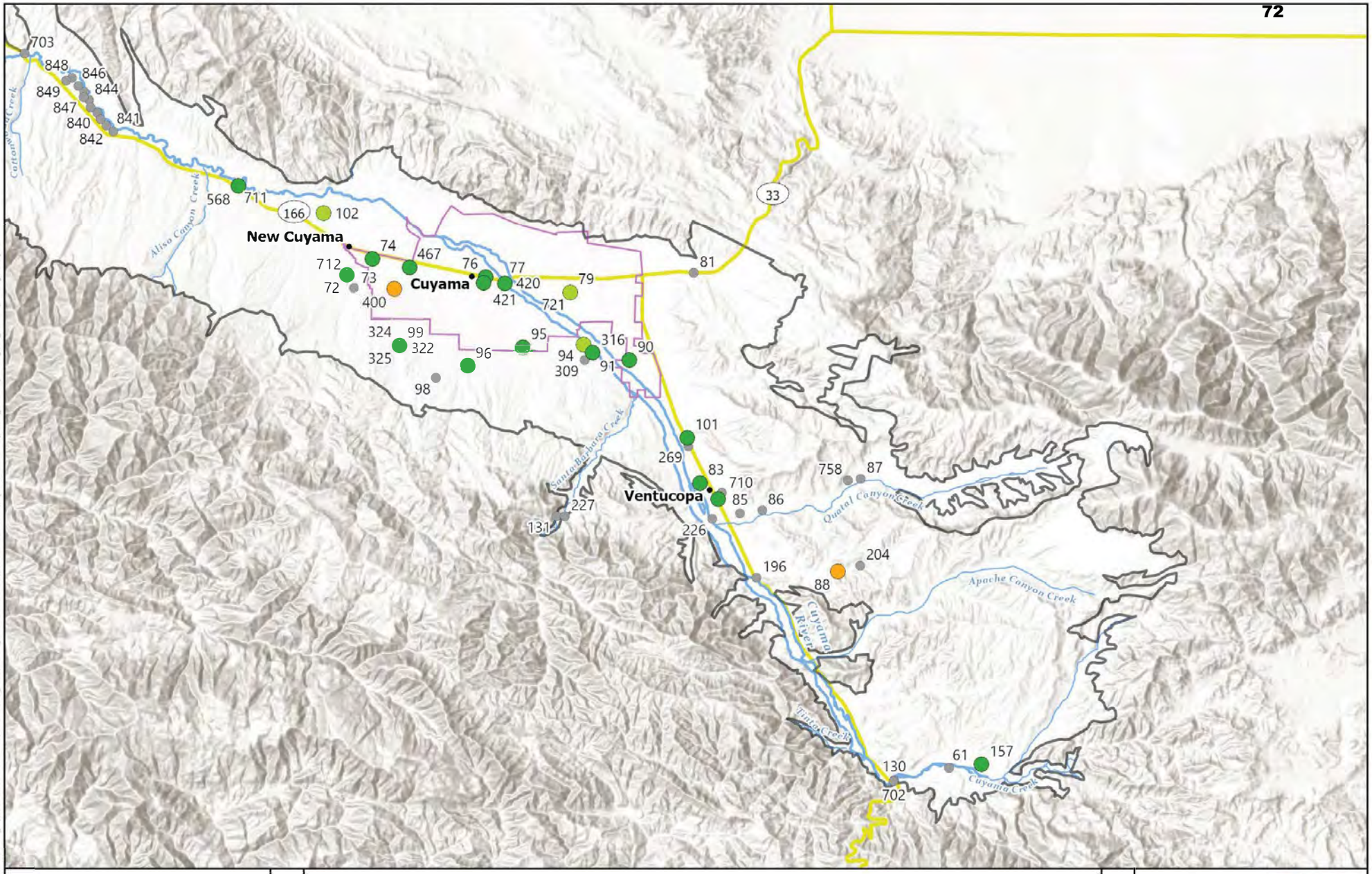


Figure 5-4: TDS Compared To SMC

Cuyama Valley Groundwater Basin

Legend

- Cuyama Basin
- Central Management Area
- Highways
- Cuyama River
- Streams/Creeks
- Towns

Representative TDS Monitoring Network Wells and Status

- Above Minimum Threshold
- Below Measurable Objective
- More than 10% Below Minimum Threshold
- No available data this period

N

Woodard & Curran

CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

0 1.25 2.5 5 Miles

Map Created: October 2023

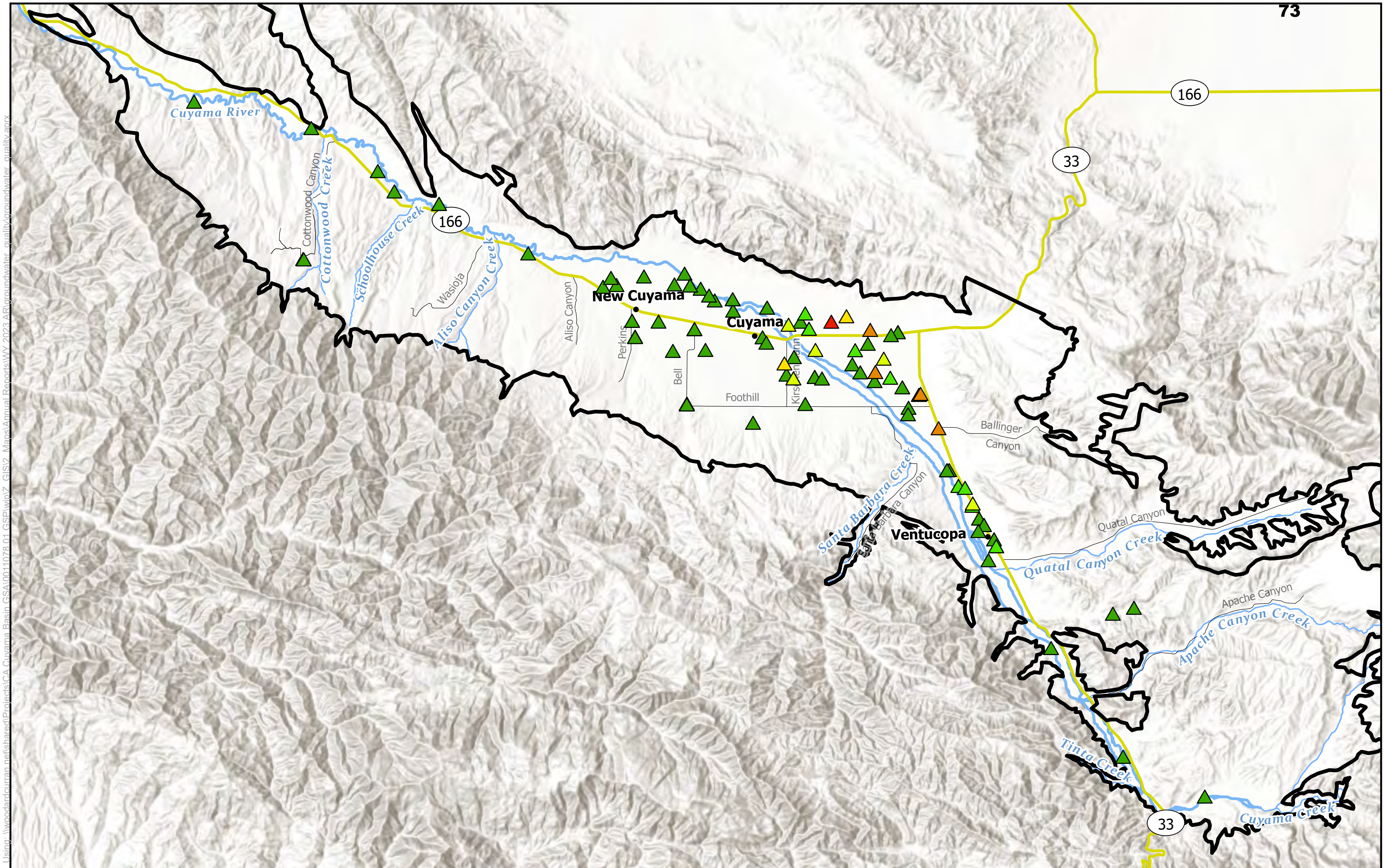


Figure 5-5: Groundwater Quality Measurements - Nitrate as NO3-N

Years 2022 and 2023

Cuyama Valley Groundwater Basin

Legend

- < 5 mg/L
- 5 - 8 mg/L
- 8 - 10 mg/L
- 10 - 15 mg/L
- 15 - 20 mg/L
- > 20 mg/L
- Highway
- Local Road
- Town
- Creek
- Cuyama River
- Cuyama Basin

*Values from monitoring wells with multiple observations were averaged with respect to year sampled.

N

Woodard & Curran

Cuyama Basin Groundwater Sustainability Agency

0 1.25 2.5 5 Miles

Map Created: February 2024

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data sources: CA DWR, Esri, USGS**

Figure Exported: 2/9/2024 By: DHunt

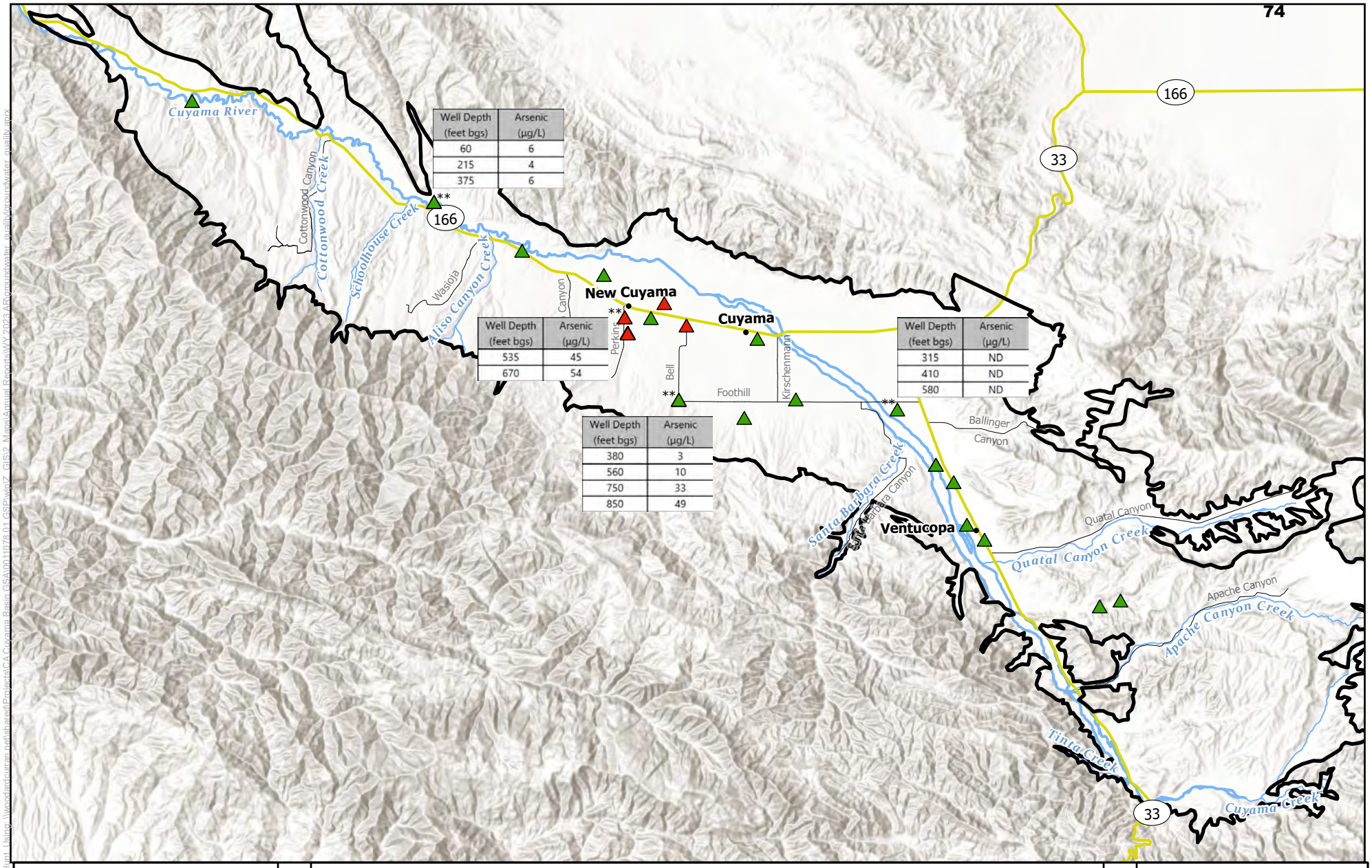


Figure 5-6: Groundwater Quality Measurements - Arsenic

Years 2022 and 2023

Cuyama Valley Groundwater Basin

Legend

- < 5 µg/L
- 5 - 8 µg/L
- 8 - 10 µg/L
- 10 - 15 µg/L
- 15 - 20 µg/L
- > 20 µg/L
- Highway
- Local Road
- Town
- Creek
- Cuyama River
- Cuyama Basin

*Values from monitoring wells with multiple observations were averaged with respect to year sampled. **Nested well at this location.

N

Woodard & Curran

0 1.25 2.5 5 Miles

Map Created: February 2024

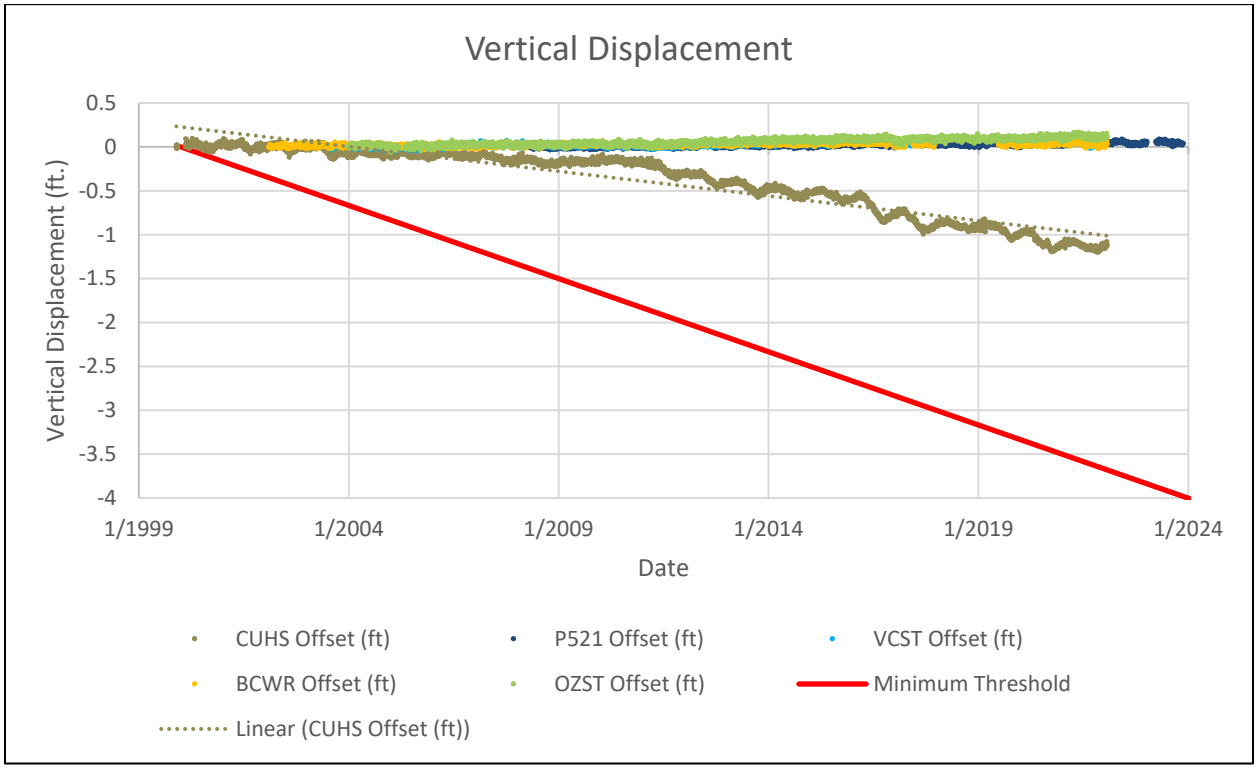
Section 6. Land Subsidence

Section 4.9 of the Cuyama GSP describes the monitoring network for land subsidence in the Basin, which is composed of five continuous geographic positioning system (CGPS) stations in and around the Basin to monitor lateral and vertical ground movements. Two of the five stations, the Cuyama Valley High School (CUHS) and the Ventucopa (VCST) stations, are within the Basin boundary. The other three stations are outside of the Basin and provide data comparative data for vertical movements that are more likely related to tectonic displacement rather than land subsidence.

The undesirable result for subsidence, as described in Section 3.2.5, is detected when 30 percent of representative subsidence monitoring sites (i.e. 1 of 2 sites) exceed the minimum threshold for subsidence over two years. The minimum threshold for subsidence, as defined in GSP Section 5.6.3, is 2 inches per year.

At the time the GSP was submitted in 2020, subsidence rates for the CUHS station were -0.56 inches per year. As shown in **Figure 6-1** data through 2022 (2023 data was not yet available) was downloaded from UNAVCO[8] and the subsidence trend for CUHS was recalculated. Subsidence rates during 2021 and 2022 actually reflected a positive change in ground surface elevation, and current subsidence rates in the central portion of the Basin are 34.02 mm per year or 1.34 inches per year (for WY 2022). This rate is below the minimum threshold, and thus undesirable results for subsidence are not occurring in the Basin.

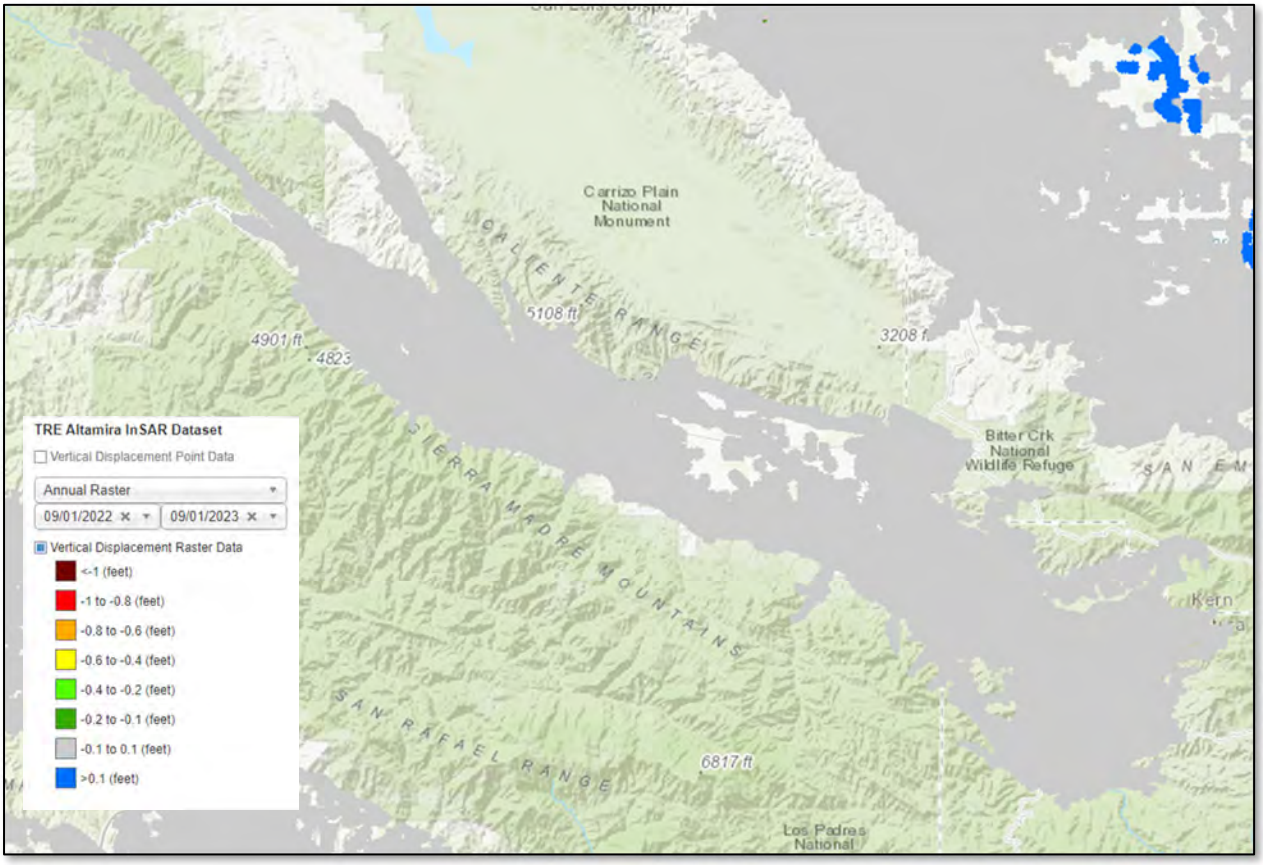
Figure 6-1: Subsidence Monitoring Data



[8] https://www.unavco.org/data/web-services/documentation/documentation.html#!/GNSS47GPS/getPositionByStationId

To assess potential changes during WY 2023 where UNAVCO data was not yet available, the TRE Altamira InSAR Dataset was used to ensure no detrimental or drastic changes had occurred. Raster results are presented in **Figure 6-2** and show no discernable change (between -0.1 and +0.1 feet) over that period.

Figure 6-2: Cuyama Subsidence Raster from SGMA Data Viewer – TRE Altamira InSAR Data



Section 7. Plan Implementation

§356.2 (c)	A description of progress toward implementing the Plan, including achieving interim milestones, and implementation of projects or management actions since the previous annual report.

This section describes management activities taken by the CBGSA to implement the Cuyama Basin GSP from adoption of the GSP through preparation of this Annual Report.

7.1 Progress Toward Achieving Interim Milestones

Since the GSP was adopted by the CBGSA Board recently and CBGSA data collection efforts began in the second half of 2020, progress toward achieving interim milestones is in its early stages.

To track changes in groundwater conditions and the Basins progress towards sustainability, the GSA compiles a quarterly groundwater condition reports based on the data collected to monitoring groundwater levels. Current data collection occurs quarterly with corresponding reports. Data collection prior to 2022 was conducted monthly, but the CBGSA determined quarterly data collection was sufficient after a full year of monthly monitoring had been performed.

As described in Section 5 of the GSP (Minimum Thresholds, Measurable Objectives, and Interim Milestones), all interim milestones (IMs) are calculated the same way in each threshold region. IMs are equal to the MT in 2025, with a projected improvement to one-third the distance between the MT and MO in 2030 and half the distance between the MT and MO in 2035. **Table 7-1** includes measurements of depth to water (DTW) at each well and compares them to their respective 2025 IMs. For each well, the groundwater level measurement taken in October 2023 is used if available; otherwise, the most recent measurement taken in July 2023 is used instead. As is shown in the table, 31 wells are currently above their IM, while 14 are below, and one is equal to the IM, relative to the most recent measurement. Three wells did not have measurements taken during the water year, either because an access agreement has not granted, or the well was inaccessible.

As outlined in the GSP, undesirable results for the chronic lowering of groundwater levels occurs, “when 30 percent of representative monitoring wells… fall below their minimum groundwater elevation threshold for two consecutive years.” (Cuyama GSP, pg. 3-2). As of October 2023, 33% of representative wells (16 of 49) were below the minimum threshold. (Cuyama Groundwater Conditions Report, pg. 1). At least 30% of representative monitoring wells (i.e. 15 wells) had been below the minimum threshold for 1 or more consecutive month. This indicated that undesirable results for the chronic lower of groundwater levels could be observed during the October 2025 groundwater levels monitoring if conditions do not improve before then. Steps that the CBGSA Board has taken in response to these observed basin conditions are described in Section 7.6 Adaptive Management, below.

Table 7-1: Measured Depths to Groundwater Compared to 2025 Interim Milestones

Well	Region	Depth to Water (feet)	Measurement Month	2025 IM (feet)	Status
72	Central	154	Oct-23	169	Above IM
74	Central	253	Oct-23	256	Above IM
77	Central	493	Oct-23	450	Below IM
91	Central	674	Oct-23	625	Below IM
95	Central	608	Oct-23	573	Below IM
96	Central	336	Oct-23	333	Below IM
98	Central	-		450	-
99	Central	290	Oct-23	311	Above IM
102	Central	288	Oct-23	235	Below IM
103	Central	244	Oct-23	290	Above IM
112	Central	86	Oct-23	87	Above IM
114	Central	-	Oct-23	47	-
316	Central	675	Oct-23	623	Below IM
317	Central	673	Oct-23	623	Below IM
322	Central	291	Oct-23	307	Above IM
324	Central	292	Oct-23	311	Above IM
325	Central	291	Oct-23	300	Above IM
420	Central	494	Oct-23	450	Below IM
421	Central	493	Oct-23	444	Below IM
474	Central	163	Jul-23	188	Above IM
568	Central	37	Oct-23	37	At IM
604	Central	440	Oct-23	526	Above IM
608	Central	433	Oct-23	436	Above IM
609	Central	442	Oct-23	458	Above IM
610	Central	637	Oct-23	621	Below IM
612	Central	479	Oct-23	463	Below IM
613	Central	530	Oct-23	503	Below IM
615	Central	518	Oct-23	500	Below IM
629	Central	530	Oct-23	559	Above IM
633	Central	566	Oct-23	547	Below IM
62	Eastern	132	Oct-23	182	Above IM
85	Eastern	177	Oct-23	233	Above IM
100	Eastern	95	Oct-23	181	Above IM
101	Eastern	106	Oct-23	111	Above IM
841	Northwestern	69	Oct-23	203	Above IM
845	Northwestern	74	Oct-23	203	Above IM
2	Southeastern	22	Oct-23	72	Above IM

89	Southeastern	29	Oct-23	64	Above IM
106	Western	142	Oct-23	154	Above IM
107	Western	68	Jul-23	91	Above IM
117	Western	152	Oct-23	160	Above IM
118	Western	53	Oct-23	124	Above IM
124	Western	-		73	-
571	Western	72	Oct-23	144	Above IM
573	Western	69	Oct-23	118	Above IM
830	Far-West Northwestern	49	Oct-23	59	Above IM
832	Far-West Northwestern	35	Oct-23	45	Above IM
833	Far-West Northwestern	23	Oct-23	96	Above IM
836	Far-West Northwestern	30	Oct-23	79	Above IM

7.2 Funding to Support GSP Implementation

On May 3, 2023, the CBGSA Board held a rate hearing and set a groundwater extraction fee of $12 per acre-foot for FY 23-24.

Additionally, the CBGSA has been awarded a $7.6 million in grant fund under the Critically Overdrafted Basin (COD) SGMA Implementation Round 1 grant opportunity, with funding awarded for the following activities through April, 2026:

- Ongoing Monitoring and Enhancements
    - Installation of Piezometers
    - installation of dedicated monitoring wells
    - DMS maintenance and enhancements
    - Groundwater level and quality monitoring
    - USGS stream gage maintenance
- Project and Management Action Implementation
    - CBWRM model update and re-calibration
    - Develop and implement framework for pumping allocations
    - Analysis of management actions implementation options
    - Adaptive management support
    - Precipitation enhancement technical analysis
    - Flood and stormwater capture technical analysis
- GSP Implementation and Outreach Activities
    - GSP implementation program management
    - Stakeholder engagement and community outreach

    - Prepare annual reports
    - Modify GSP in response to DWR determination
    - 5-year GSP update
- Improving Understanding of Basin Water Use
    - Perform updated land use survey
    - Perform river channel survey
    - Enhance existing CIMIS station and implement new stations

The CBGSA has also submitted a proposal to DWR for approximately $2 million under the SGMA Implementation Round 2 grant opportunity with funding to do additional implemenation tasks. The CBGSA however did not get funding through that grant opportunity.

7.3 Stakeholder Outreach Activities in Support of GSP Implementation

The following is a list of public meetings where GSP development and implementation was discussed during the 2022-2023 water year.

- CBGSA Board meetings: September 7, November 2, November 15, December 12, January 18, March 29, May 3, July 12, and September 6
- Standing Advisory Committee (SAC) meetings: October 27, January 5, March 23, April 27, July 6, and August 31
-

7.4 Progress on Implementation of GSP Projects

Table 7-2 shows the projects and management actions that were included in the GSP. The following subsections describe the progress of implementation of each GSP project.

Table 7-2: Summary of Projects and Management Actions included in the GSP

Activity	Current Status	Anticipated Timing	Estimated Cost[a]
Project 1: Flood and Stormwater Capture	Water rights analysis of potential water supplies currently underway	• Feasibility study: 0 to 5 years • Design/Construction: 5 to 15 years	• Study: $1,000,000 • Flood and Stormwater Capture Project: $600-$800 per AF ($2,600,000 – 3,400,000 per year)
Project 2: Precipitation Enhancement	Feasibility Study currently underway by Desert Research Institute;	• Refined project study: 0 to 2 years • Implementation of Precipitation Enhancement: 0 to 5 years	• Study: $200,000 • Precipitation Enhancement Project: $25 per AF ($150,000 per year)
Project 3: Water Supply Transfers/Exchanges	Not yet begun	• Feasibility study/planning: 0 to 5 years • Implementation in 5 to 15 years	• Study: $200,000 • Transfers/Exchanges: $600-$2,800 per AF (total cost TBD)
Project 4: Improve Reliability of Water Supplies for Local Communities	In progress for CCSD; not yet begun for other communities	• Feasibility studies: 0 to 2 years • Design/Construction: 1 to 5 years	• Study: $100,000 • Design/Construction: • $1,800,000
Management Action 1: Basin-Wide Economic Analysis	Completed	• December 2020	• $60,000
Management Action 2: Pumping Allocations in Central Basin Management Area	Allocations developed for 2023 and 2024 and implemented in 2023 calendar year	• Allocations implemented: 2023 through 2040	• Plan: $300,000 • Implementation: $150,000 per year
Adaptive Management	Board ad-hoc committee has been formed and is considering potential actions	Only implemented if triggered; timing would vary	TBD

[a] Estimated cost based on planning documents and professional judgment
AF = acre-feet

7.4.1 Project 1: Flood and Stormwater Capture

The CBGSA application for COD SGMA Implementation Grant funding from DWR includes a task to understand the feasibility of future flood and stormwater capture. Specifically, funding was sought to perform a water rights analysis on flood and stormwater capture flows in the Basin to understand the feasibility of further developing a stormwater capture project in the Basin given water availability and existing water rights. Initial work has been done to look at reservoir operations data to see during what windows during Twitchell Reservoir there were managed released and to assess the possibility of capturing

this excess water upstream in the Cuyama Basin. Our current data suggests that this occurs 11% of the time. The CBGSA also looked at USGS stream flow gages in the area to correlate time periods when reservoirs were releasing water to see how much stormwater may be available for capture. Additional analysis will be done in the coming year to assess the feasibility of implantation of a flood and stormwater capture project. This water rights analysis has not yet been completed but is expected to be completed in 2024.

7.4.2 Project 2: Precipitation Enhancement

The CBGSA application for COD SGMA Implementation Grant funding from DWR, which includes a task to understand the feasibility of precipitation enhancements efforts. Specifically, funding was sought to perform a feasibility study of the precipitation enhancement action identified in the GSP to determine if this action should be pursued and implemented in the Basin. The CBGSA contracted with the Desert Research Institute (DRI) to assess cloud seeding effects on Santa Barbra County and the Cuyama Valley. A proposal was submitted in September 2023 and work was initiated in October. A final report which will provide additional acre feet potential of precipitation from cloud seeding is expected in August 2024.

7.4.3 Project 3: Water Supply Transfers or Exchanges

No progress was made toward implementation of this project since completion of the GSP in January 2020. This project will be explored if Project 1 mentioned above: flood and stormwater capture was feasible but greater volumes of water are desired.

7.4.4 Project 4: Improve Reliability of Water Supplies for Local Communities

This management action includes consideration of opportunities to improve water supply reliability for Ventucopa within CCSD service area. Potential projects include a replacement well for CCSD and improvement of Ventucopa Water Supply Company (VWSC's) existing well. Since the 2020 GSP adoption DWR's IRWM program awarded CCSD a grant to install a new production well. Work by the CCSD to install the new well is ongoing.

7.5 Management Actions

Table 7-2 shows the projects and management actions that were included in the GSP. The following subsections describe the progress of implementation of each GSP management action.

7.5.1 Management Action 1: Basin-Wide Economic Analysis

A Basin-wide direct economic analysis of proposed GSP actions was completed. The results of this analysis were presented to the GSP Board on December 4, 2019, and the final report was completed in December 2019. The final Basin-wide economic analysis report was provided in the 2020 Annual Report. This management action is 100% complete.

7.5.2 Management Action 2: Pumping Allocations in Central Basin Management Area

CBGSA staff has worked and continues to work with the Board and stakeholders to implement pumping allocations in the Central Management Area which began in the 2023 calendar year. As directed by the Board, in July 2022, CBGSA staff developed pumping allocations for 2023 and 2024 for each parcel located within the Central Management Area. These allocations reflect a 5% reduction in 2023 and a 10% reduction in 2024 relative to baseline levels. Actual pumping was reported for most water users in the Central Management Area in 2023, with all users at or below their pumping allocation amount for 2023.

7.6 Adaptive Management

As discussed in the previous annual report, because several wells in the Basin are trending towards undesirable results, the CBGSA Board has undertaken efforts to review wells that have exceeded minimum thresholds, investigate potential causes of the exceedances, and identify if any domestic or production wells are affected by declining groundwater levels. During WY 2023, several wells with groundwater levels that previously exceeded minimum thresholds recovered to above these threshold levels.

The Board continues to consider potential actions to address minimum threshold exceedances, including restricting pumping in individual wells, adjusting minimum thresholds or the undesirable result criteria identified in the GSP, and accelerating basin-wide pumping reductions. Potential options for implementing these actions will be discussed by the Board during the upcoming water year.

7.7 Progress Toward Implementation of Monitoring Networks

This section provides updates about implementation of the monitoring networks identified during GSP development.

7.7.1 Groundwater Levels Monitoring Network

In October 2021 the CBGSA transitioned to quarterly groundwater monitoring from its groundwater levels network. The CBGSA goes out in the field and collects Depth to Water measurements quarterly and attempts to take measurements from each of the representative and non-representative wells in the monitoring network. The results of this groundwater level monitoring are shown in Table 7-1. In September 2023, the CBGSA board voted to revise the monitoring network; the revised monitoring network will be included in the 2025 GSP Update.

7.7.2 Surface Water Monitoring Network

Under a Category 1 grant from DWR, two new surface flow gages were installed on the Cuyama River during 2021. These gages are managed by the United States Geologic Survey (USGS), and data collected at the gage locations are available on the USGS website at the following links:

https://waterdata.usgs.gov/nwis/uv?site_no=11136500

https://waterdata.usgs.gov/ca/nwis/uv?site_no=11136710

Section 8. References

California Department of Water Resources (DWR). 2003. *California's Groundwater Bulletin 118—Update 2003*. https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/3-13.pdf

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Appendix A
Updated Hydrographs for Representative Wells

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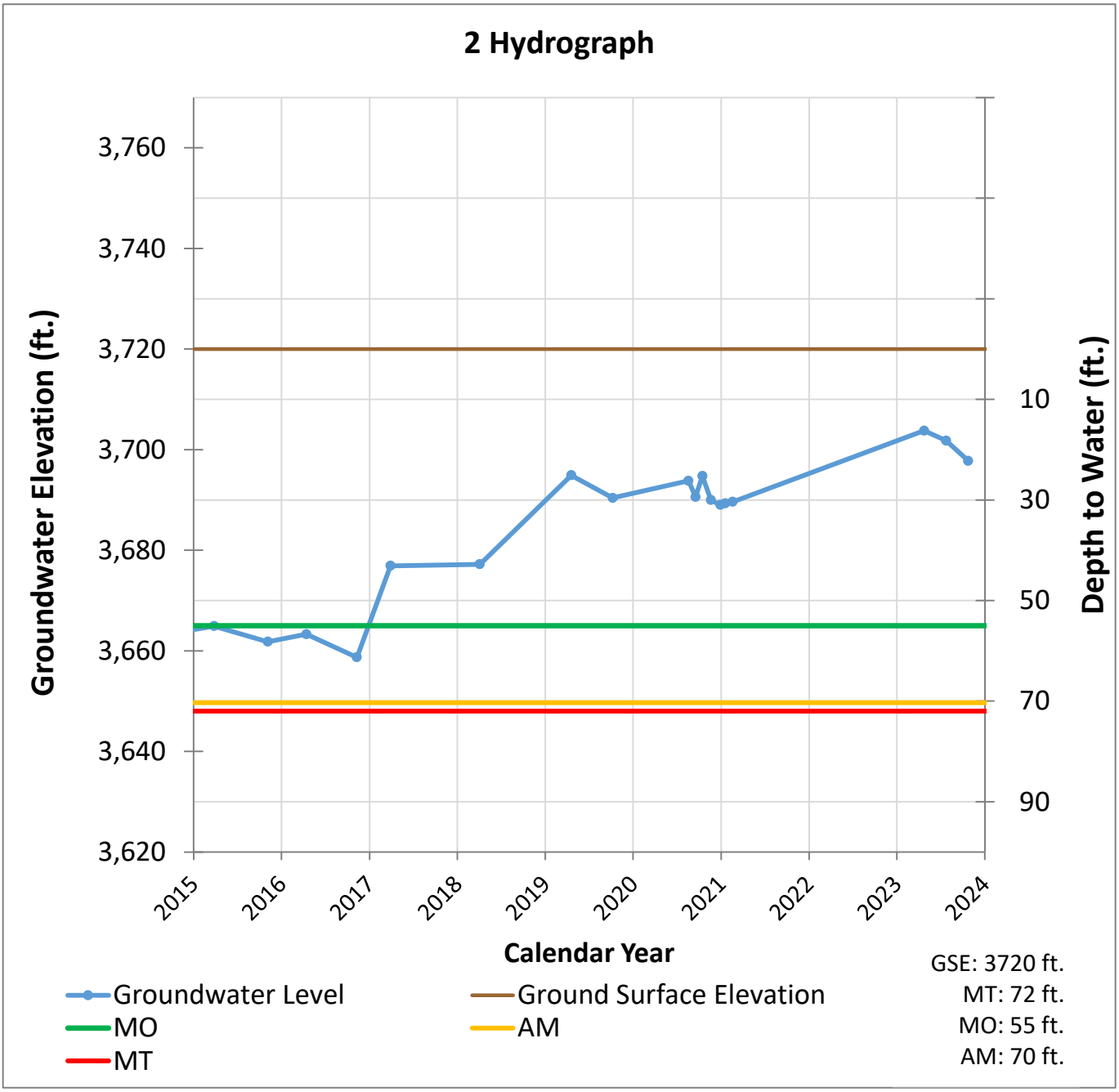
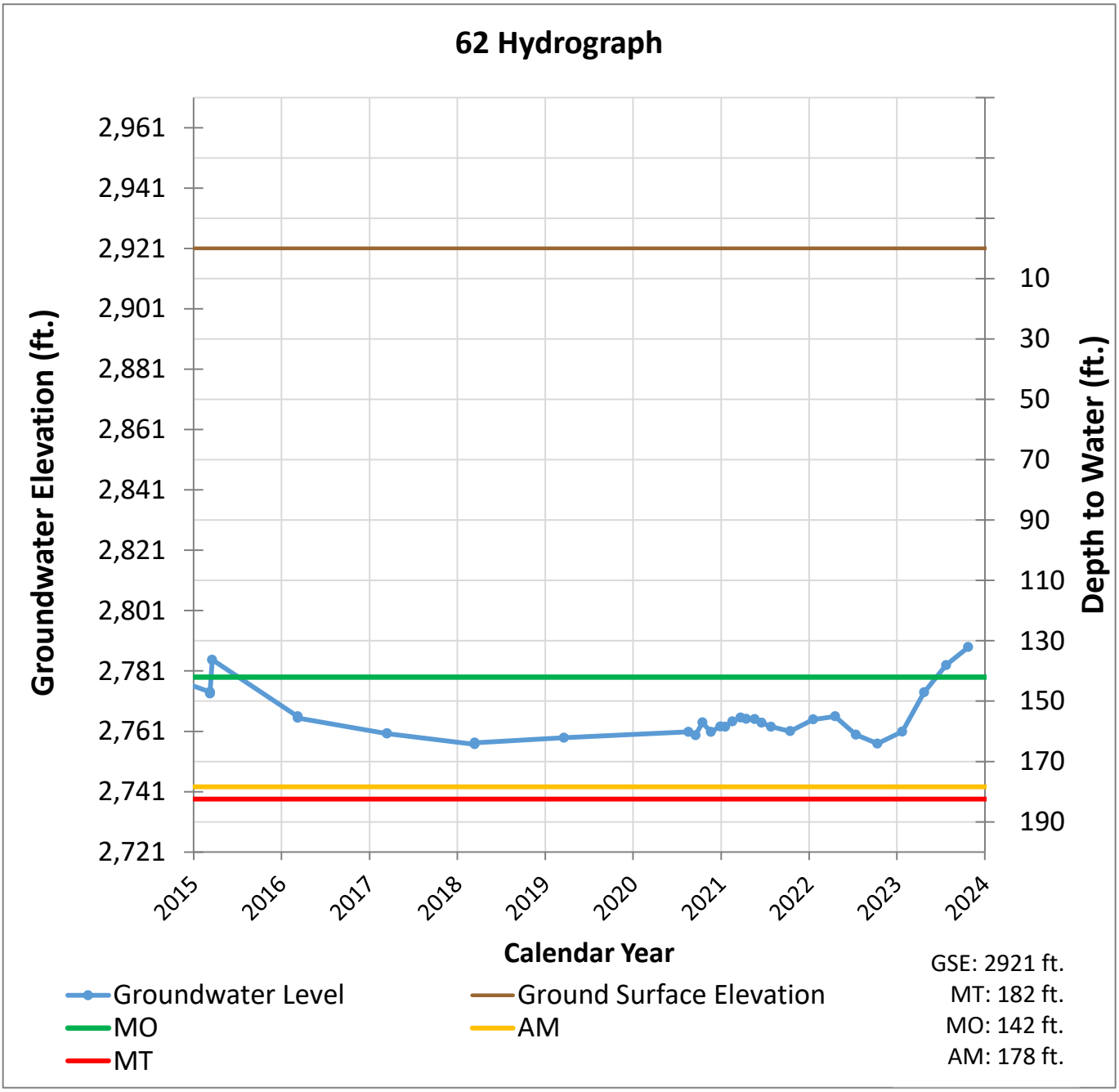
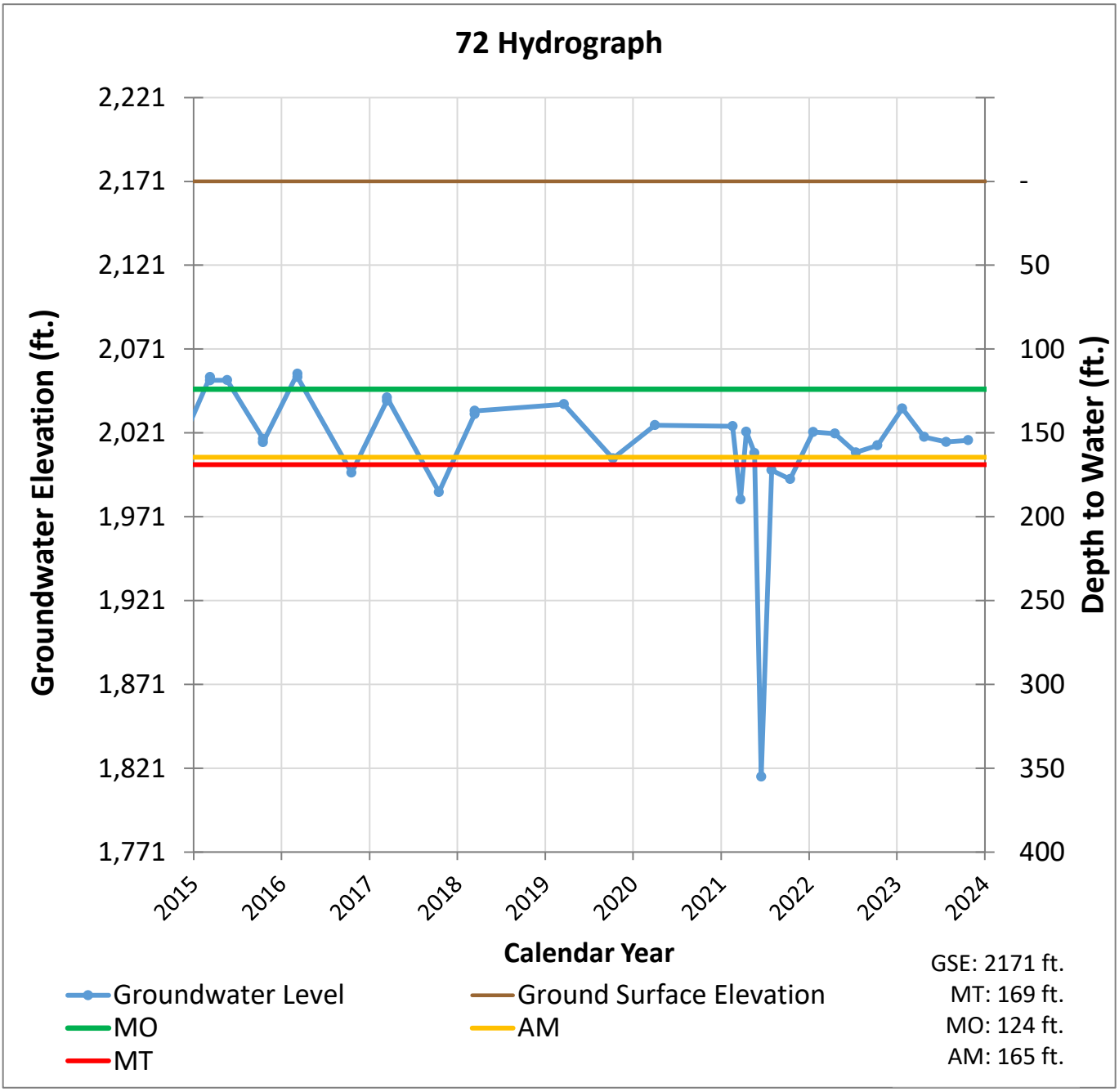
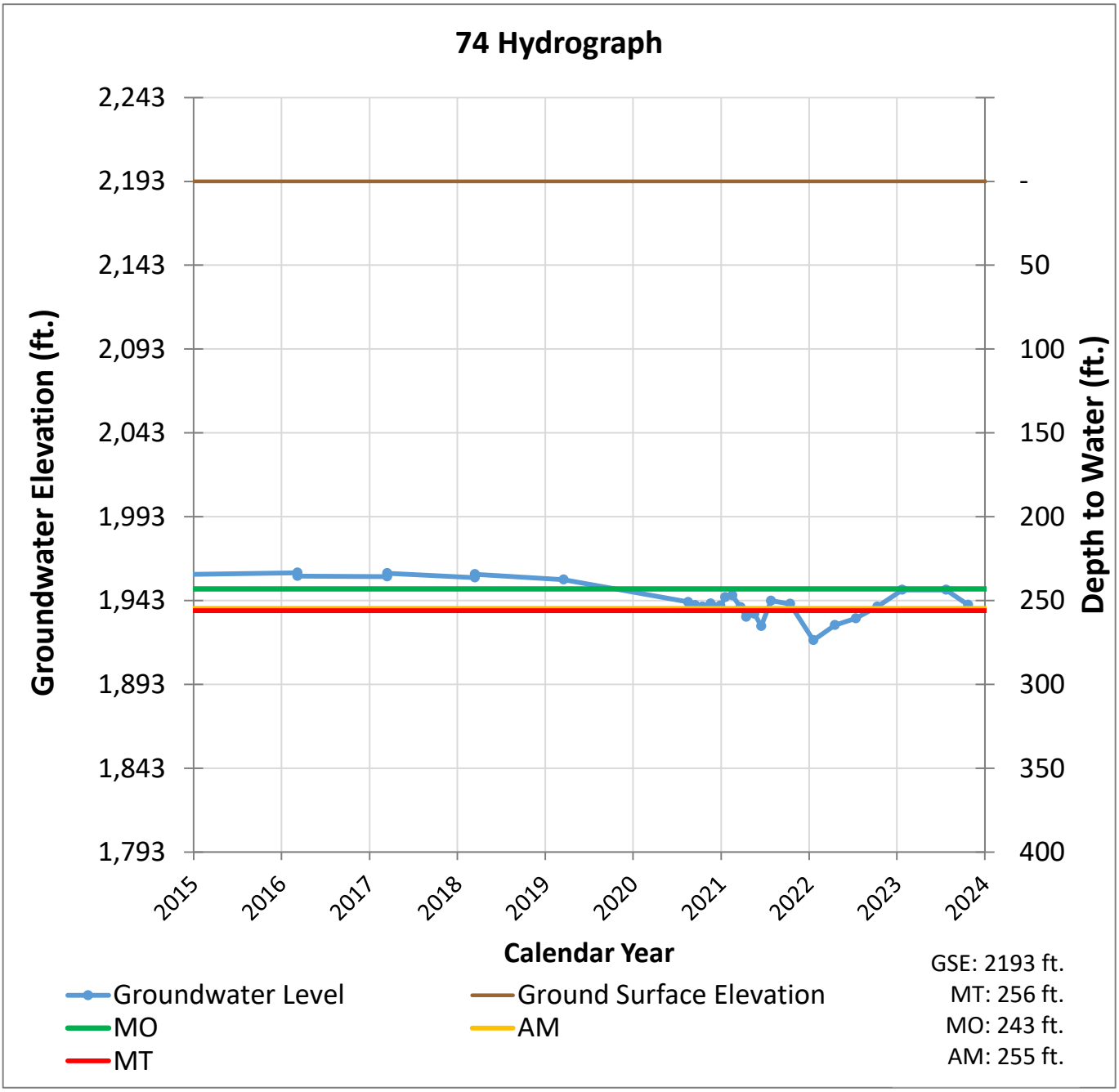
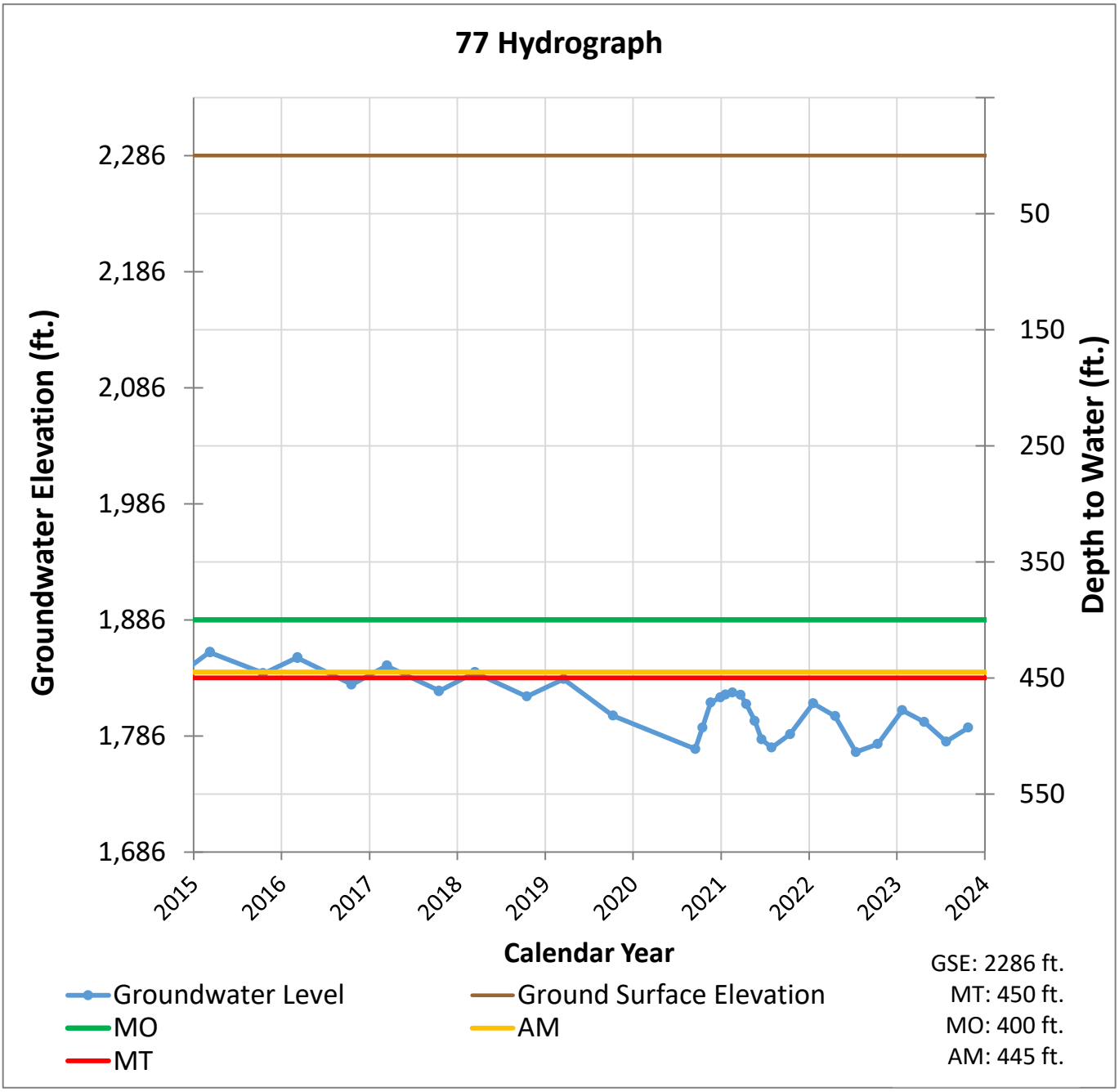
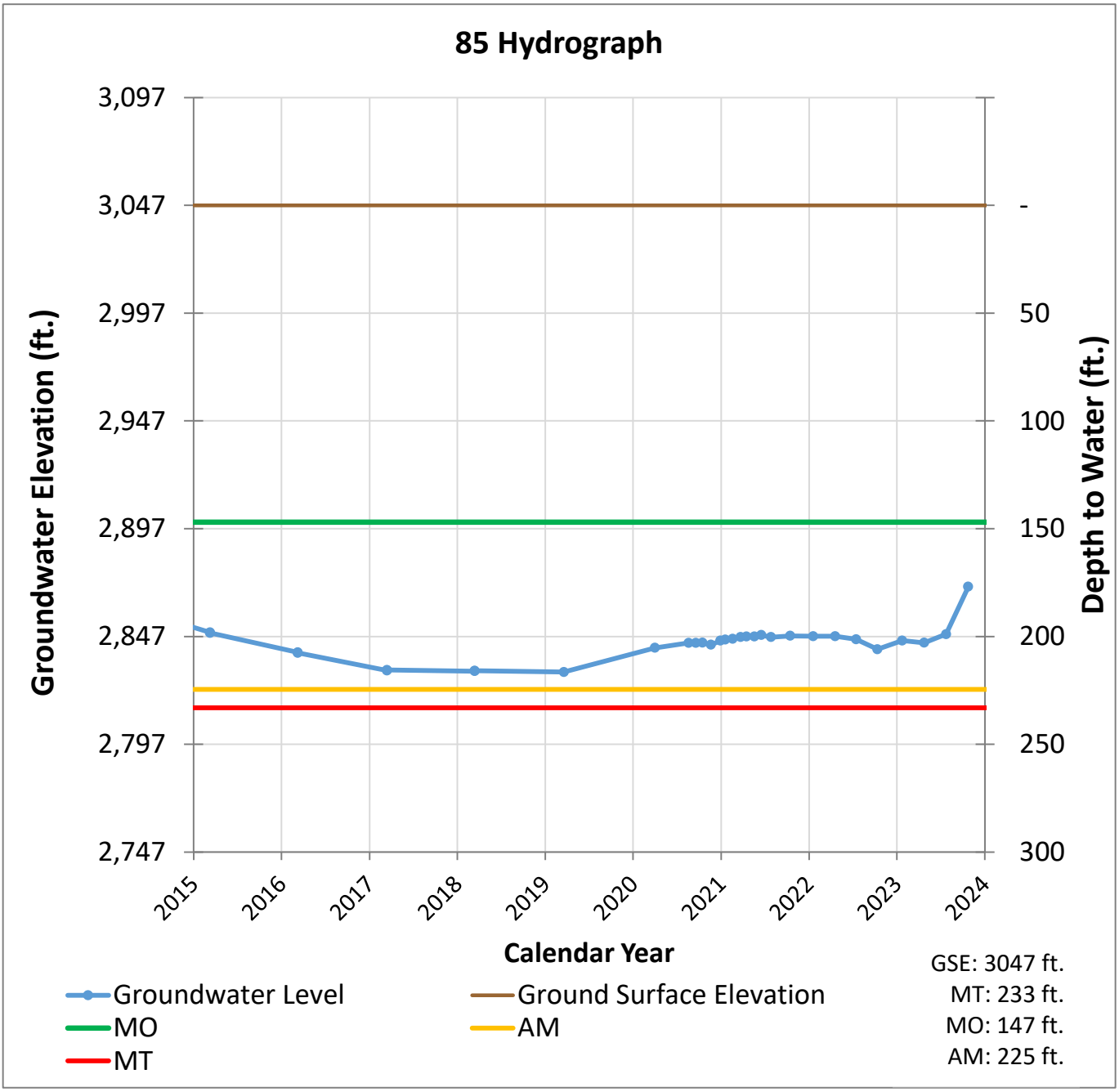

2 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
3,760
3,740
3,720
3,700
3,680
3,660
3,640
3,620
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3720 ft.
MT: 72 ft.
MO: 55 ft.
AM: 70 ft.

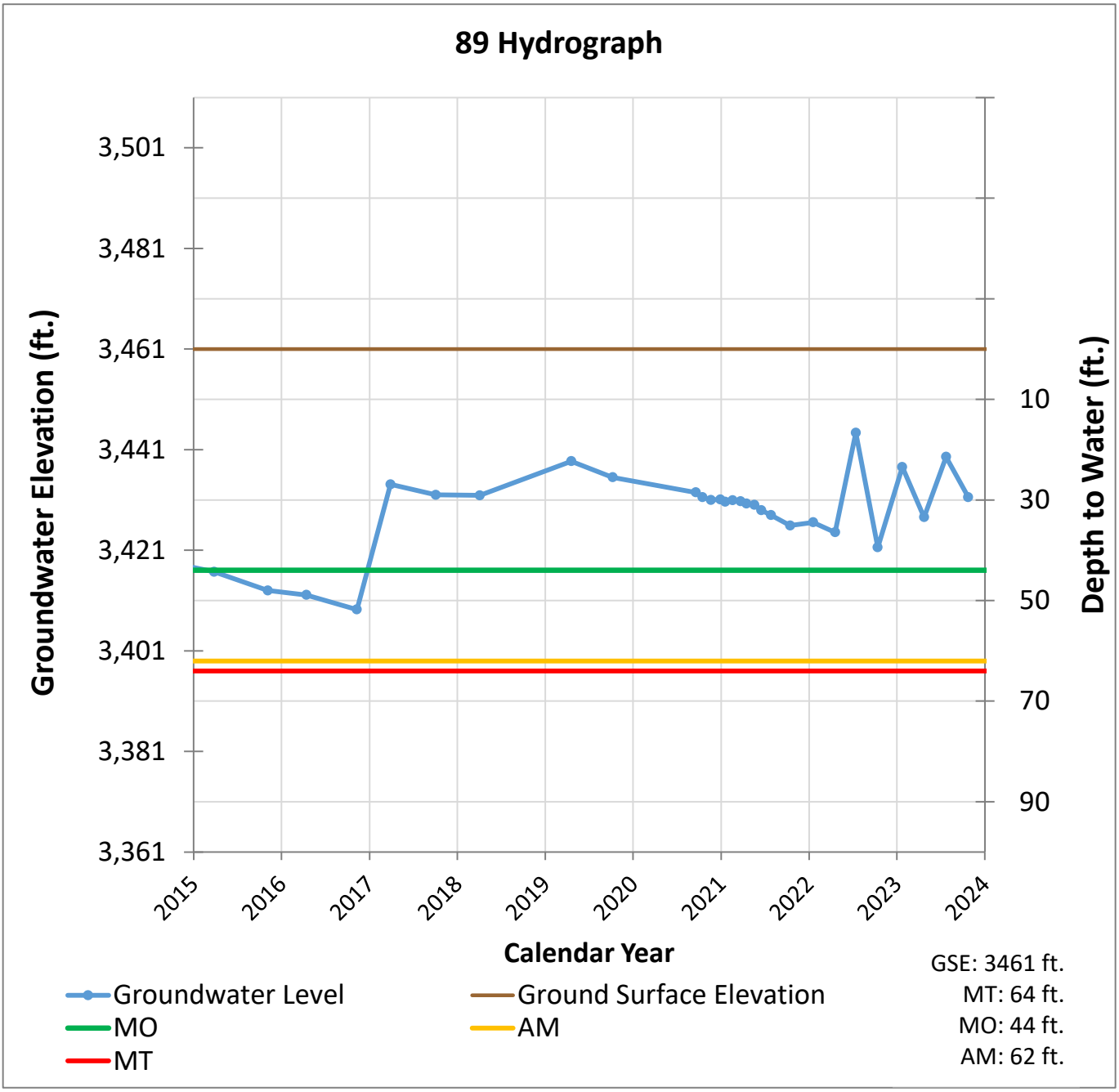

62 Hydrograph
Groundwater Elevation (ft.)
2,961
2,941
2,921
2,901
2,881
2,861
2,841
2,821
2,801
2,781
2,761
2,741
2,721
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2921 ft.
MT: 182 ft.
MO: 142 ft.
AM: 178 ft.

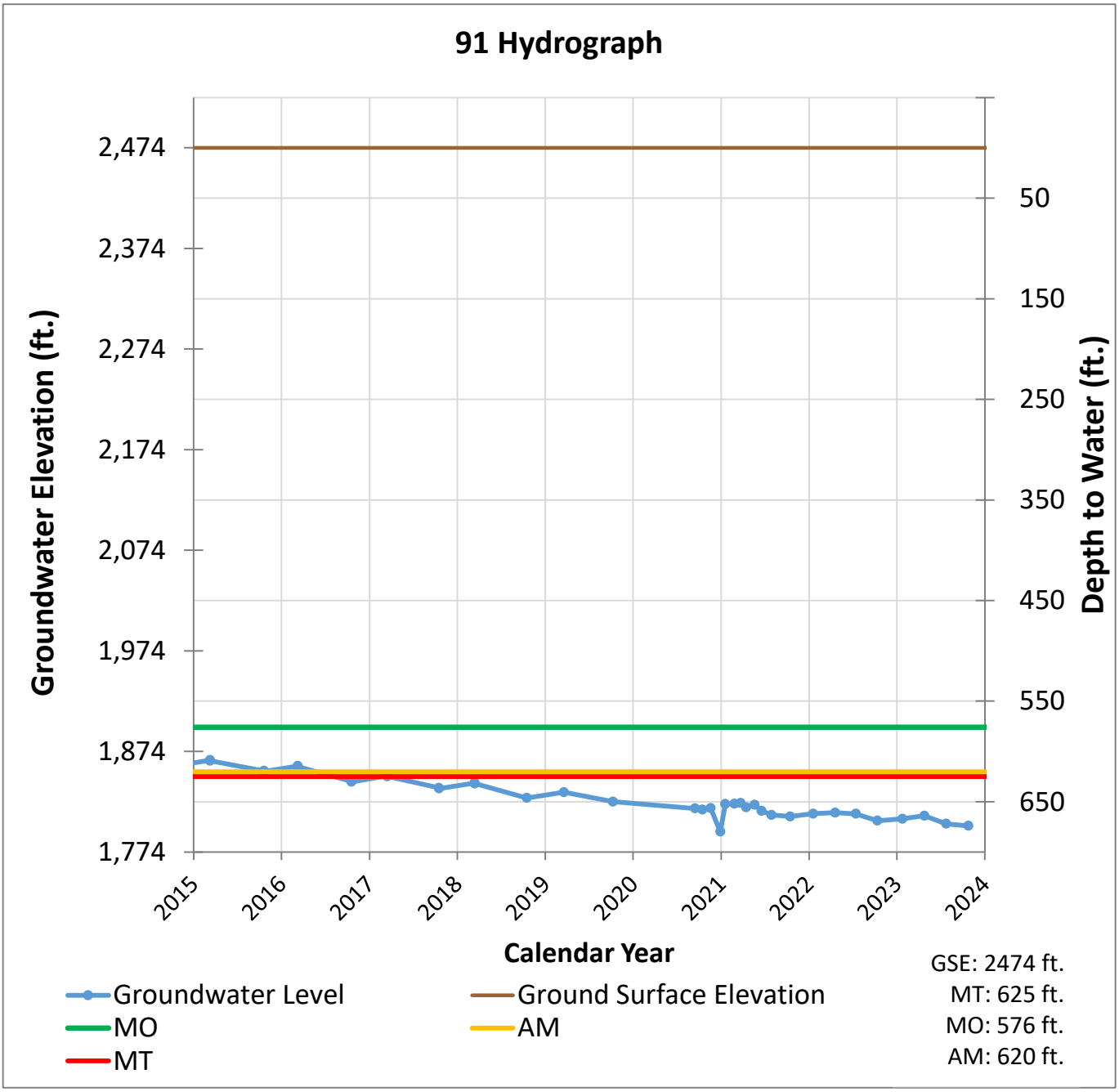

72 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,221
2,171
2,121
2,071
2,021
1,971
1,921
1,871
1,821
1,771
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2171 ft.
MT: 169 ft.
MO: 124 ft.
AM: 165 ft.

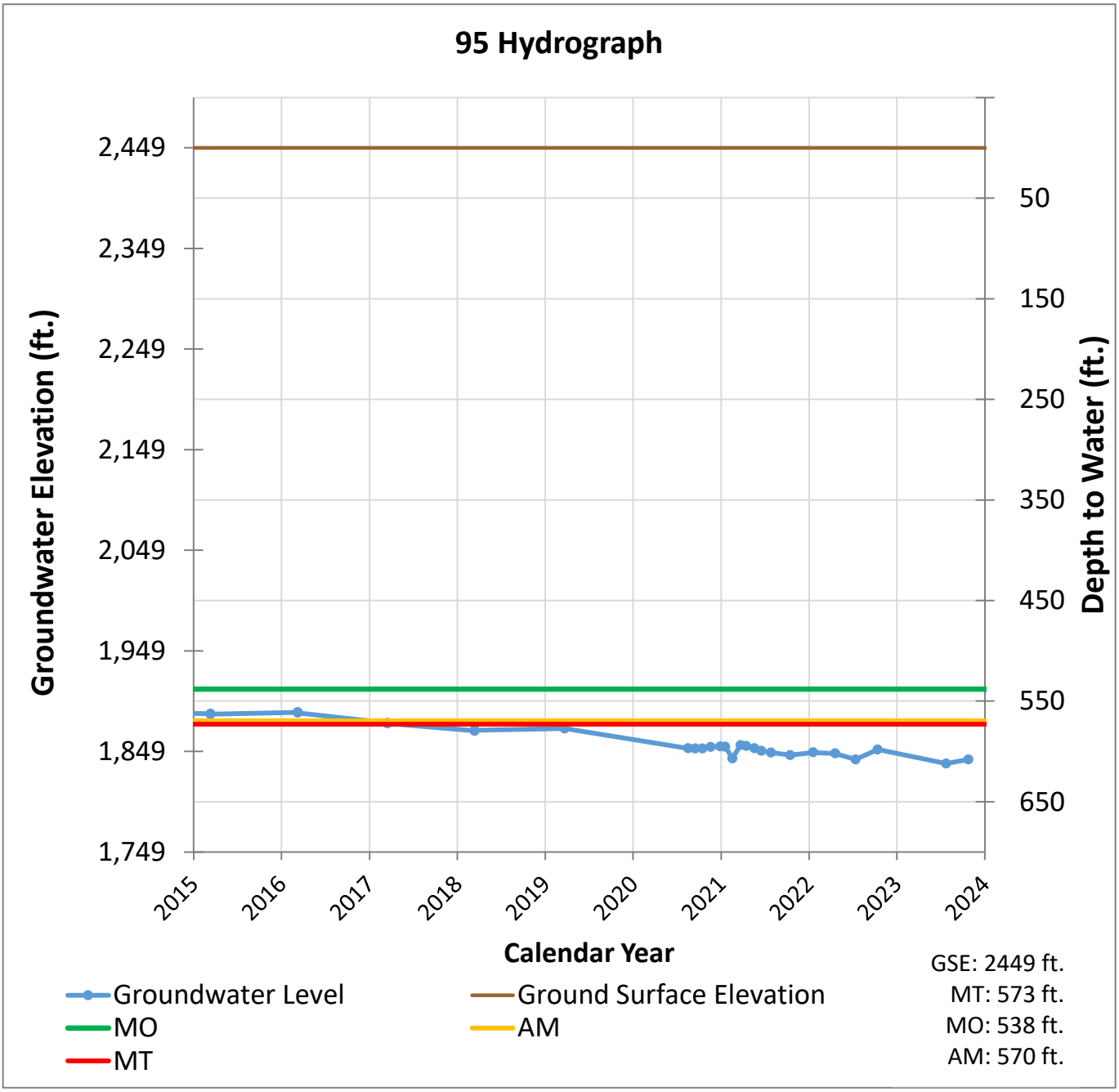

74 Hydrograph
Groundwater Elevation (ft.)
2,243
2,193
2,143
2,093
2,043
1,993
1,943
1,893
1,843
1,793
Depth to Water (ft.)
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2193 ft.
MT: 256 ft.
MO: 243 ft.
AM: 255 ft.

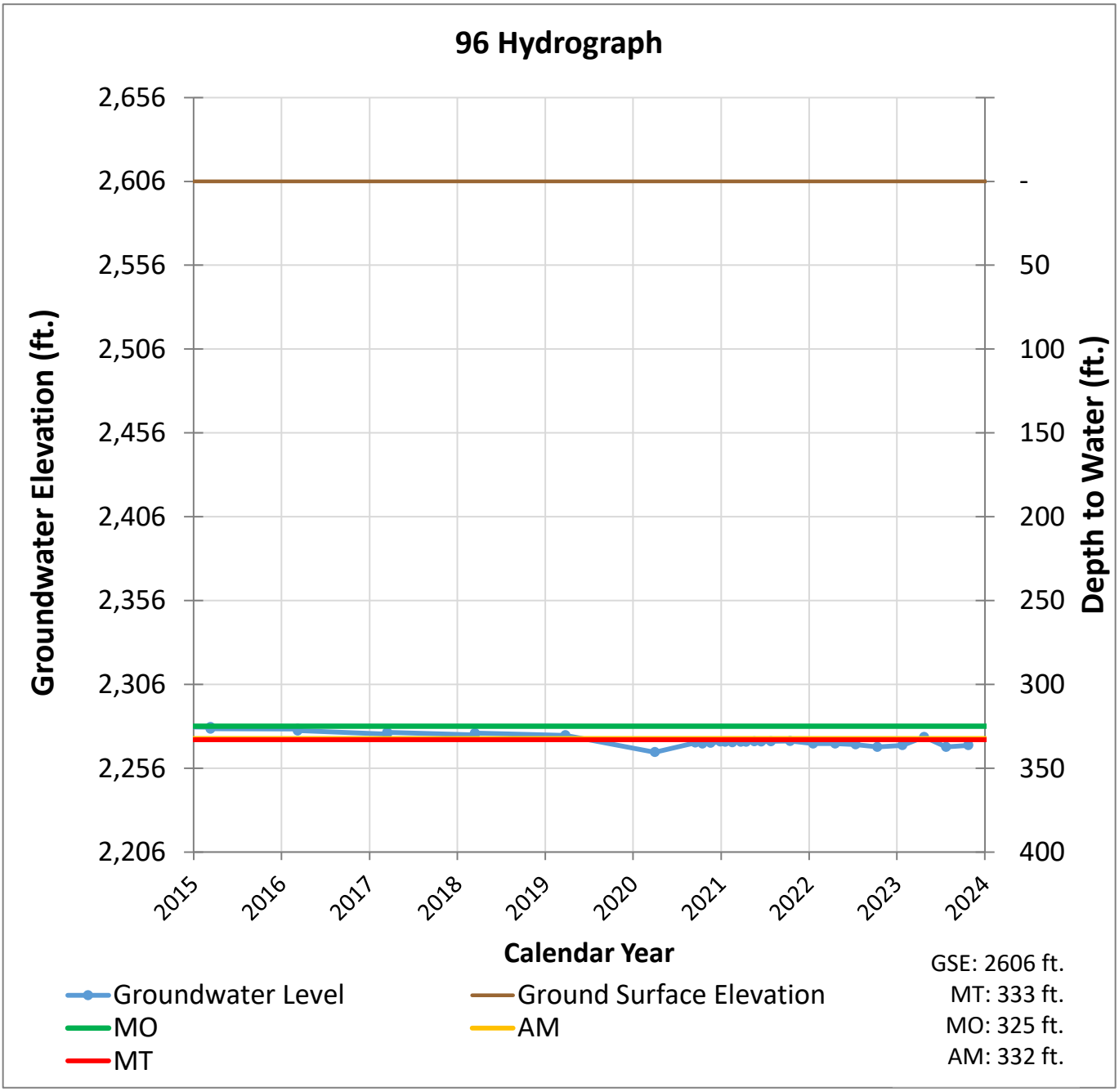

77 Hydrograph
Groundwater Elevation (ft.)
2,286
2,186
2,086
1,986
1,886
1,786
1,686
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 450 ft.
MO: 400 ft.
AM: 445 ft.

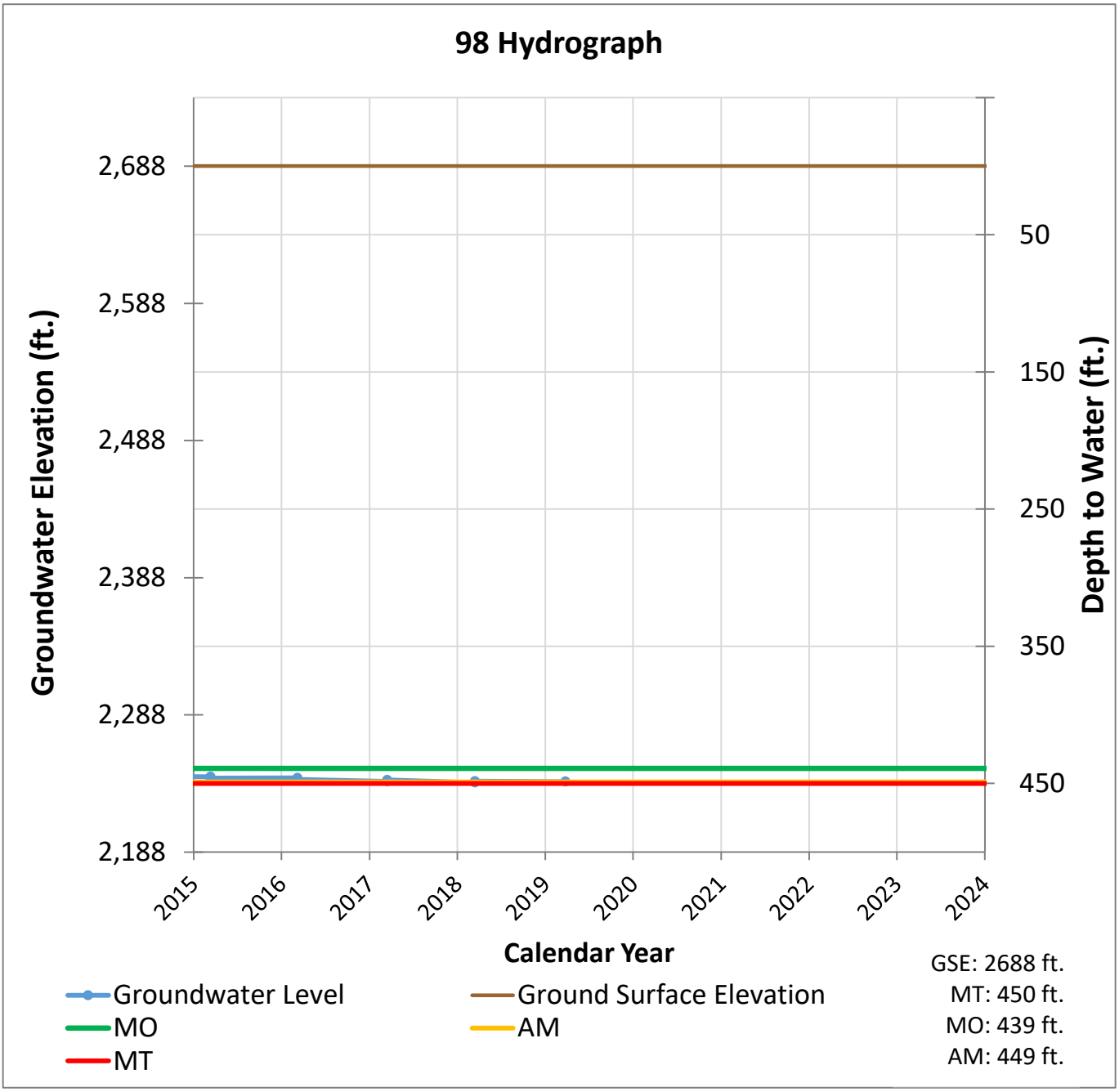

85 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
3,097
3,047
2,997
2,947
2,897
2,847
2,797
2,747
-
50
100
150
200
250
300
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3047 ft.
MT: 233 ft.
MO: 147 ft.
AM: 225 ft.

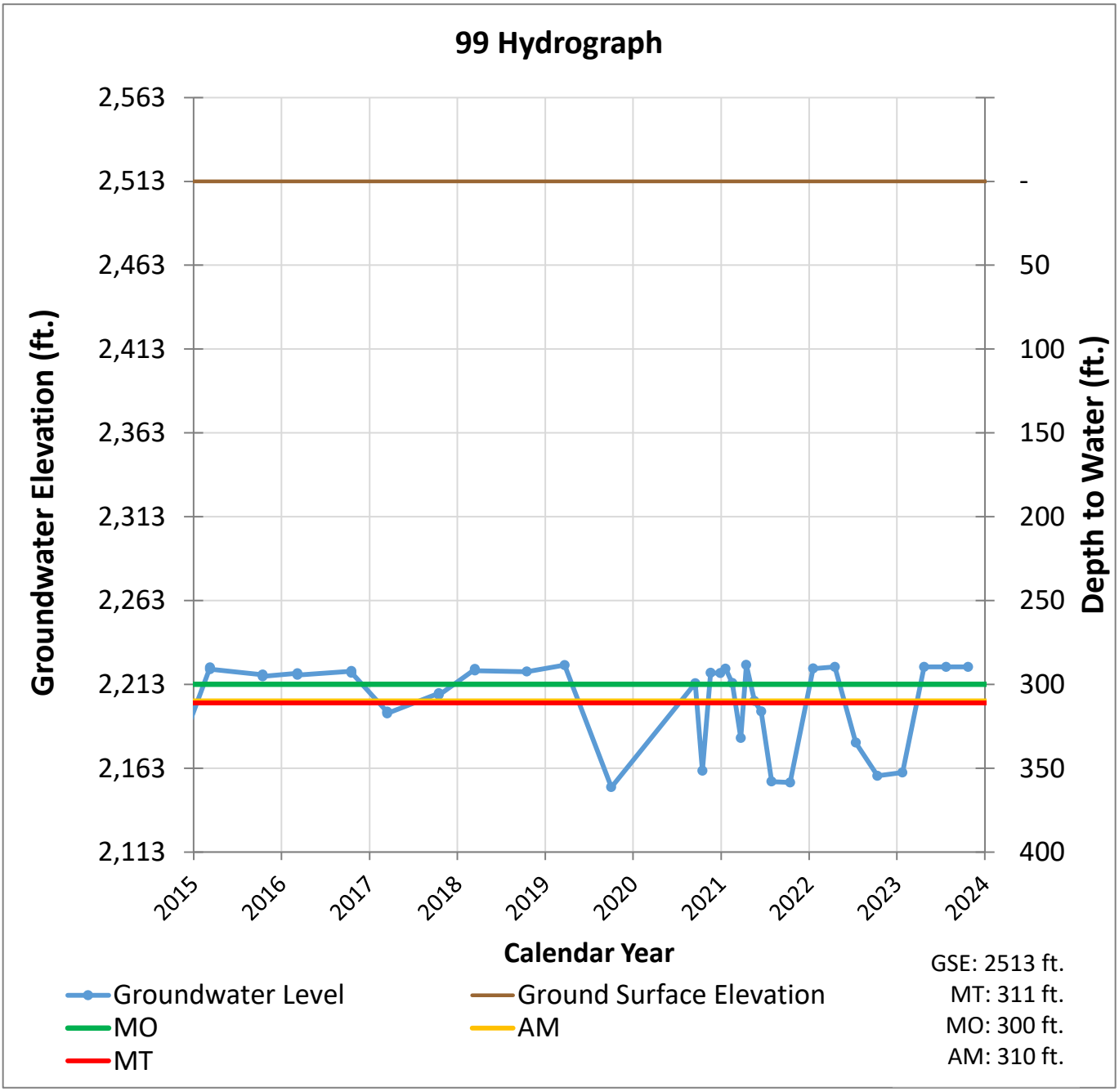

89 Hydrograph
Groundwater Elevation (ft.)
3,501
3,481
3,461
3,441
3,421
3,401
3,381
3,361
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3461 ft.
MT: 64 ft.
MO: 44 ft.
AM: 62 ft.

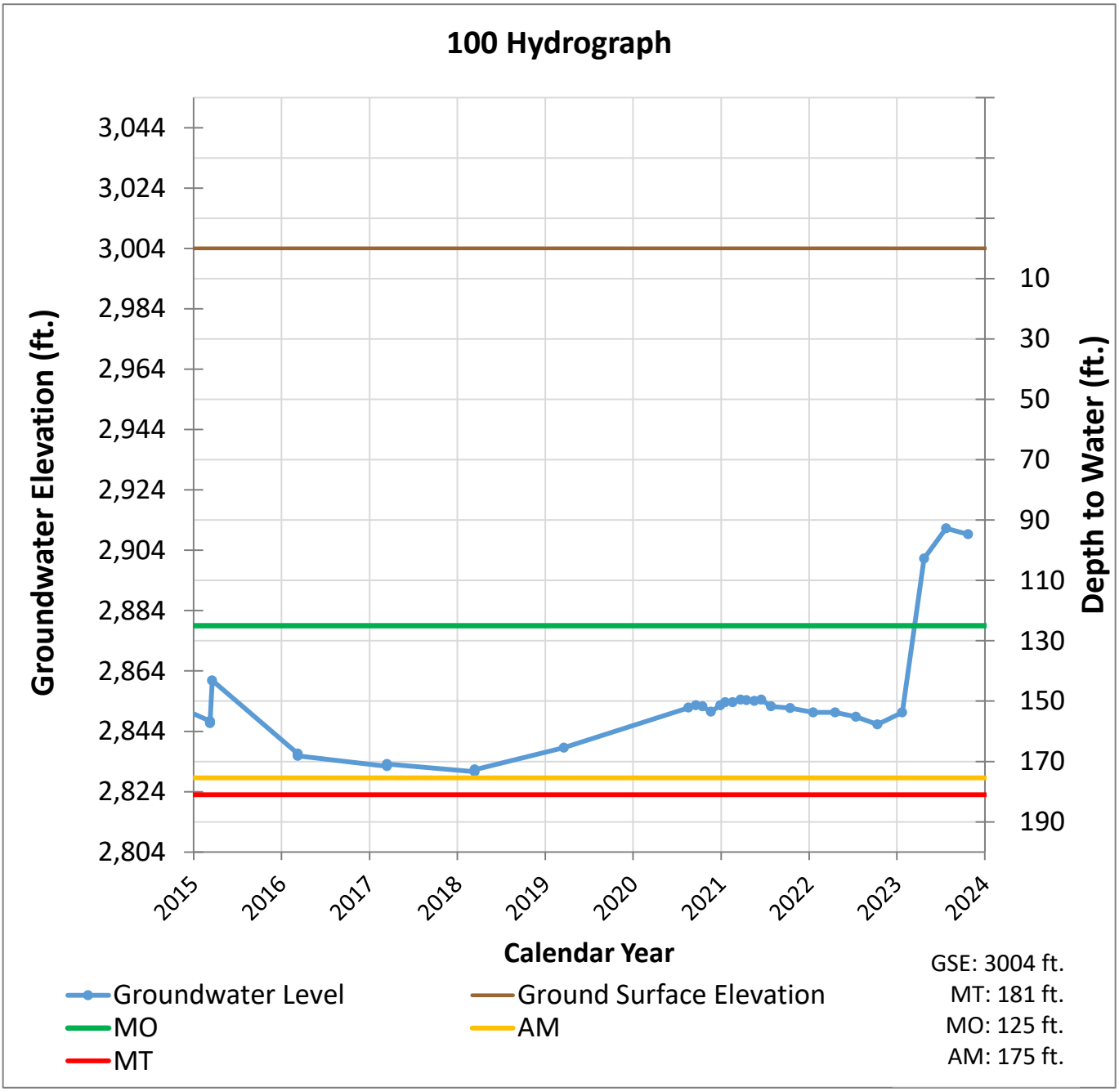

91 Hydrograph
Groundwater Elevation (ft.)
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
Depth to Water (ft.)
50
150
250
350
450
550
650
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 625 ft.
MO: 576 ft.
AM: 620 ft.

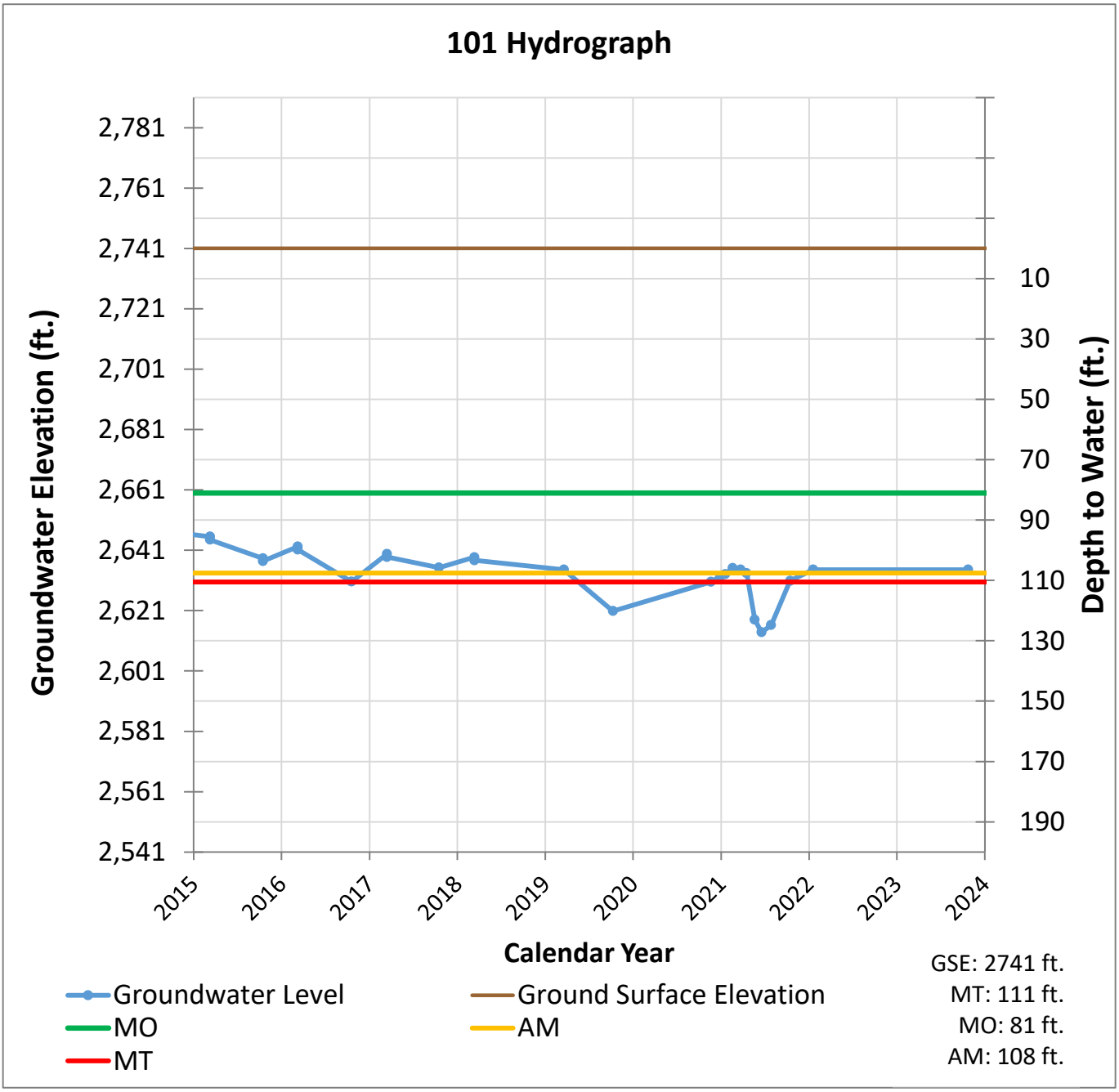

95 Hydrograph
Groundwater Elevation (ft.)
2,449
2,349
2,249
2,149
2,049
1,949
1,849
1,749
Depth to Water (ft.)
50
150
250
350
450
550
650
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2449 ft.
MT: 573 ft.
MO: 538 ft.
AM: 570 ft.

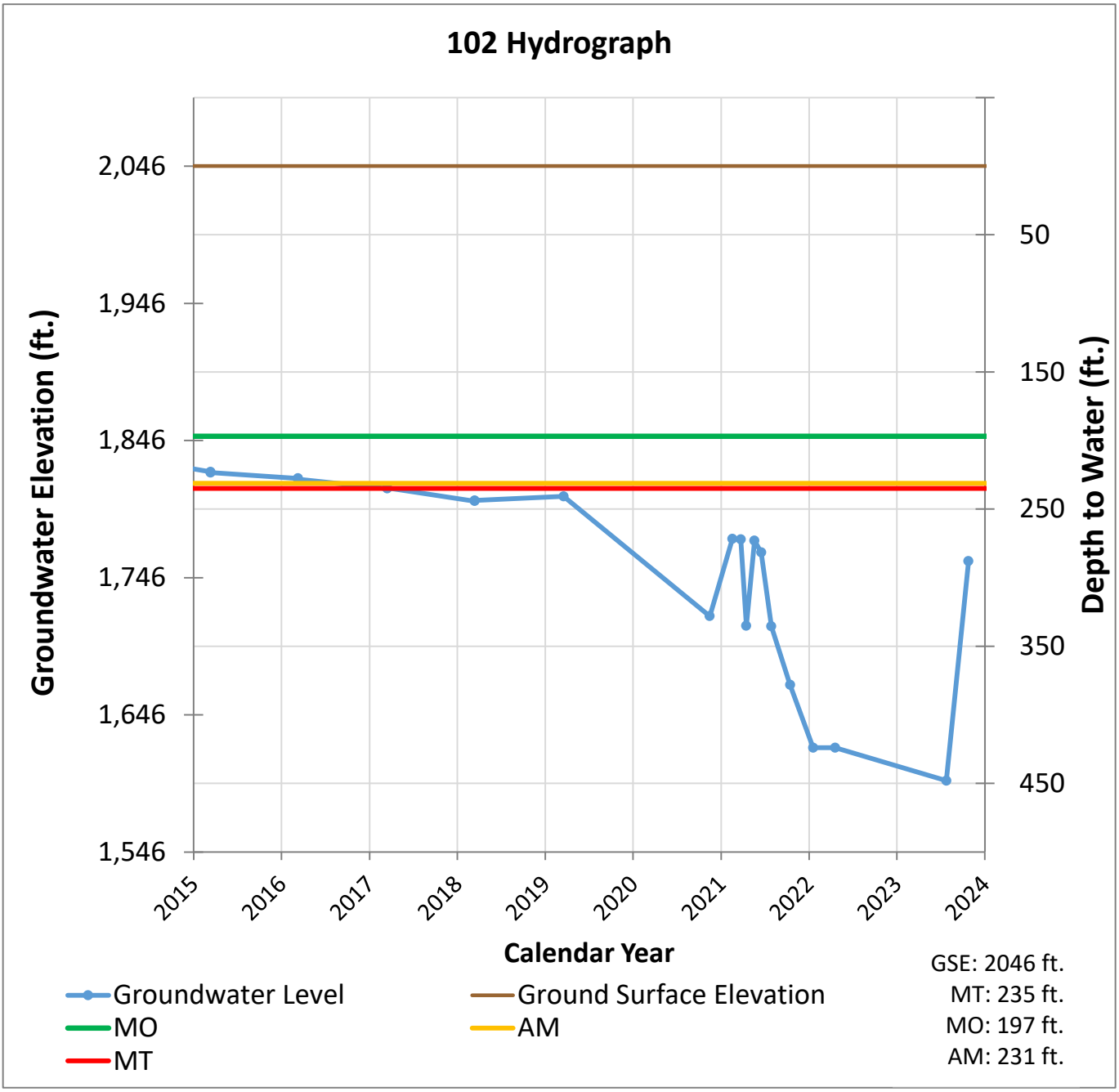

96 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,656
2,606
2,556
2,506
2,456
2,406
2,356
2,306
2,256
2,206
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2606 ft.
MT: 333 ft.
MO: 325 ft.
AM: 332 ft.

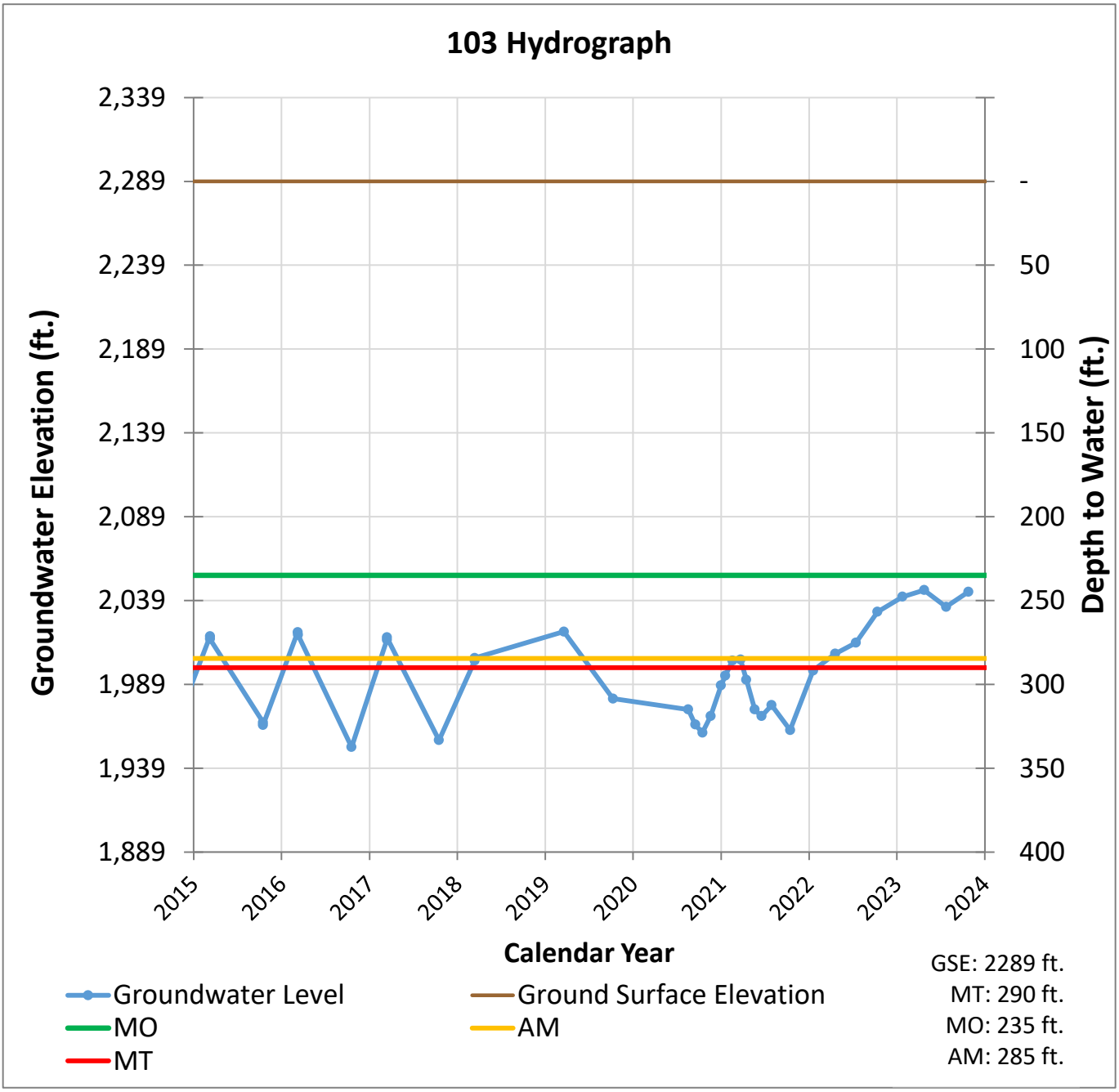

98 Hydrograph
Groundwater Elevation (ft.)
2,688
2,588
2,488
2,388
2,288
2,188
Depth to Water (ft.)
50
150
250
350
450
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2688 ft.
MT: 450 ft.
MO: 439 ft.
AM: 449 ft.

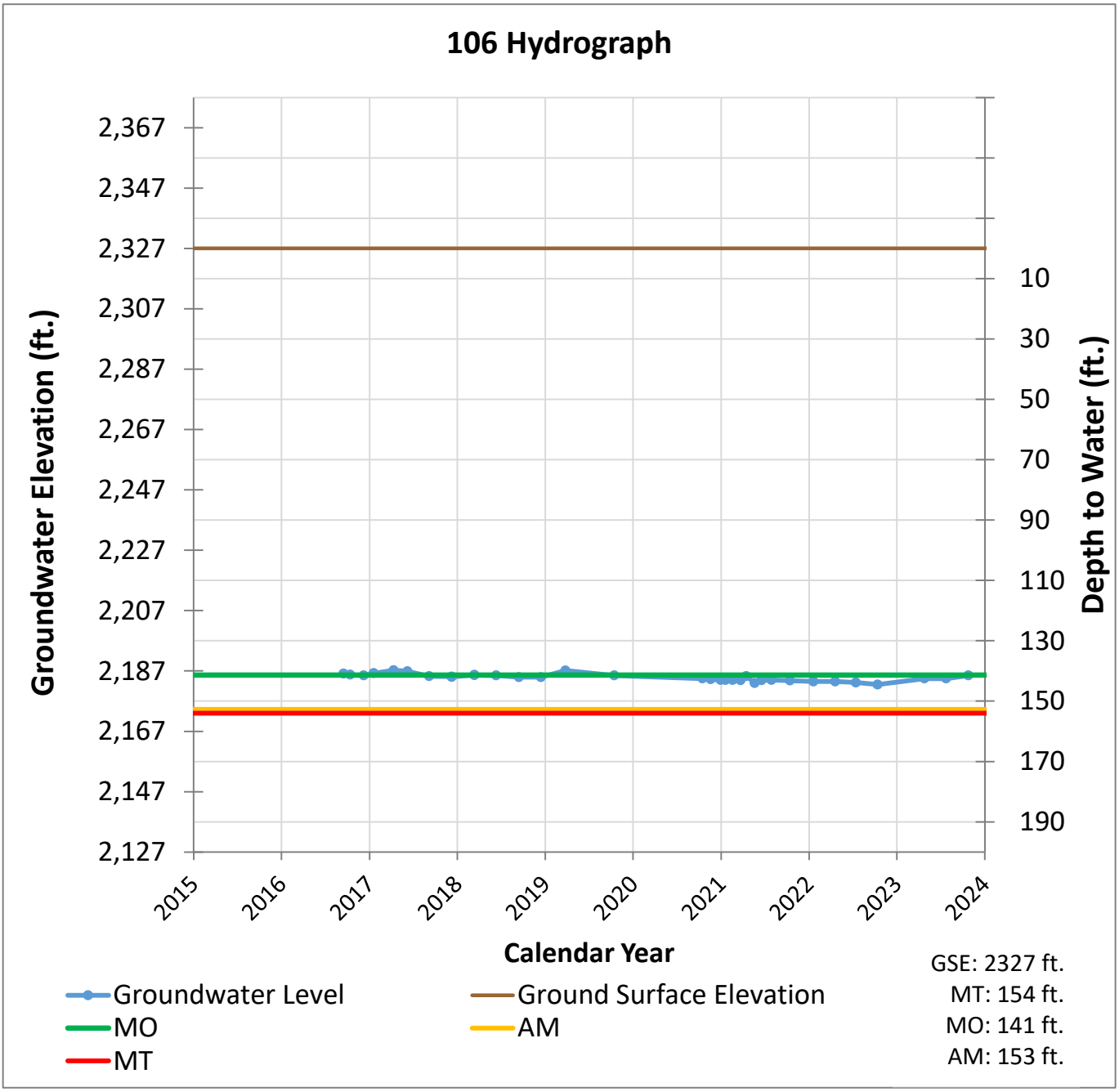

99 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,563
2,513
2,463
2,413
2,363
2,313
2,263
2,213
2,163
2,113
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 311 ft.
MO: 300 ft.
AM: 310 ft.

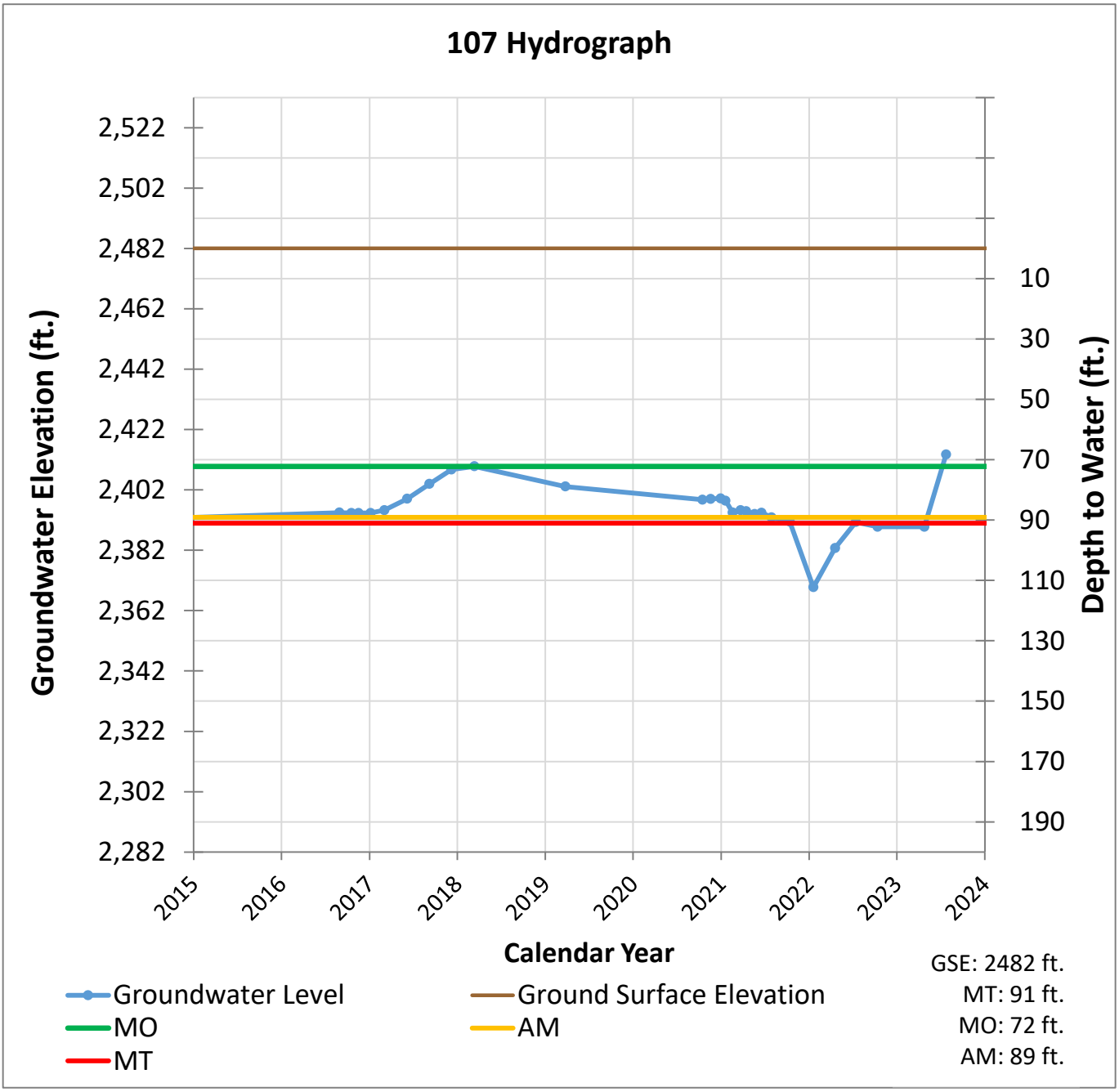

100 Hydrograph
Groundwater Elevation (ft.)
3,044
3,024
3,004
2,984
2,964
2,944
2,924
2,904
2,884
2,864
2,844
2,824
2,804
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3004 ft.
MT: 181 ft.
MO: 125 ft.
AM: 175 ft.

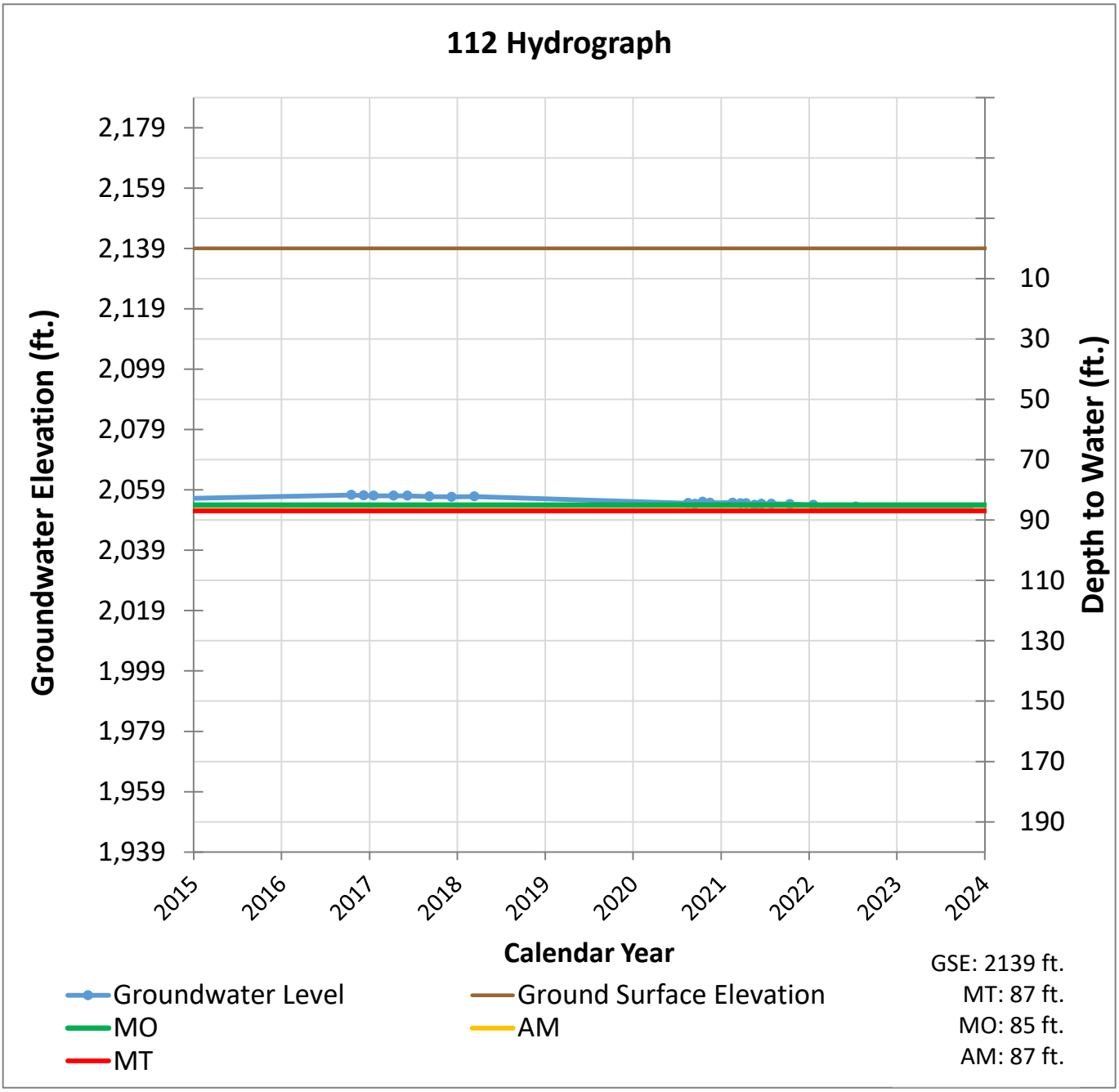

101 Hydrograph
Groundwater Elevation (ft.)
2,781
2,761
2,741
2,721
2,701
2,681
2,661
2,641
2,621
2,601
2,581
2,561
2,541
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2741 ft.
MT: 111 ft.
MO: 81 ft.
AM: 108 ft.

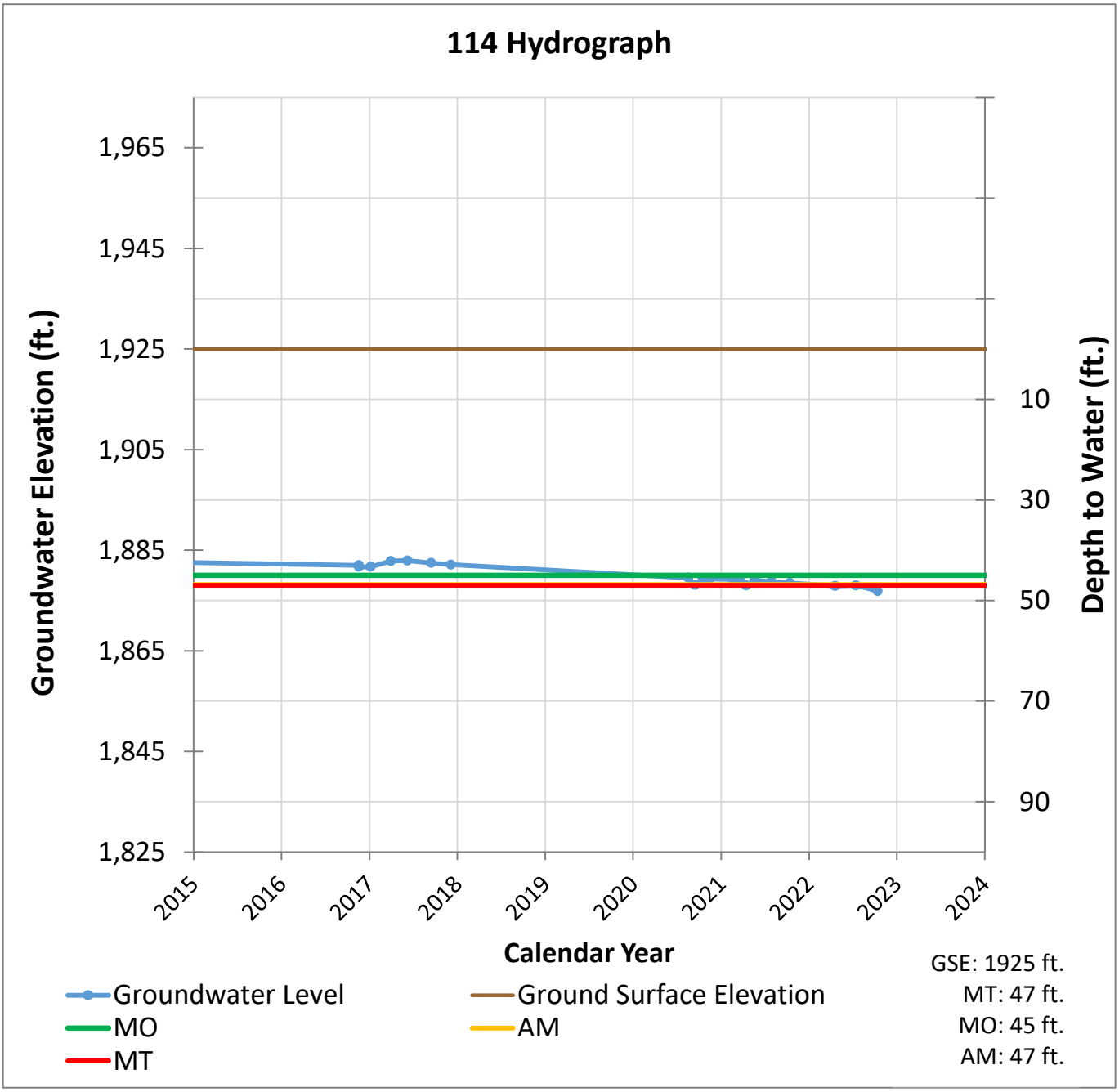

102 Hydrograph
Groundwater Elevation (ft.)
2,046
1,946
1,846
1,746
1,646
1,546
Depth to Water (ft.)
50
150
250
350
450
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2046 ft.
MT: 235 ft.
MO: 197 ft.
AM: 231 ft.

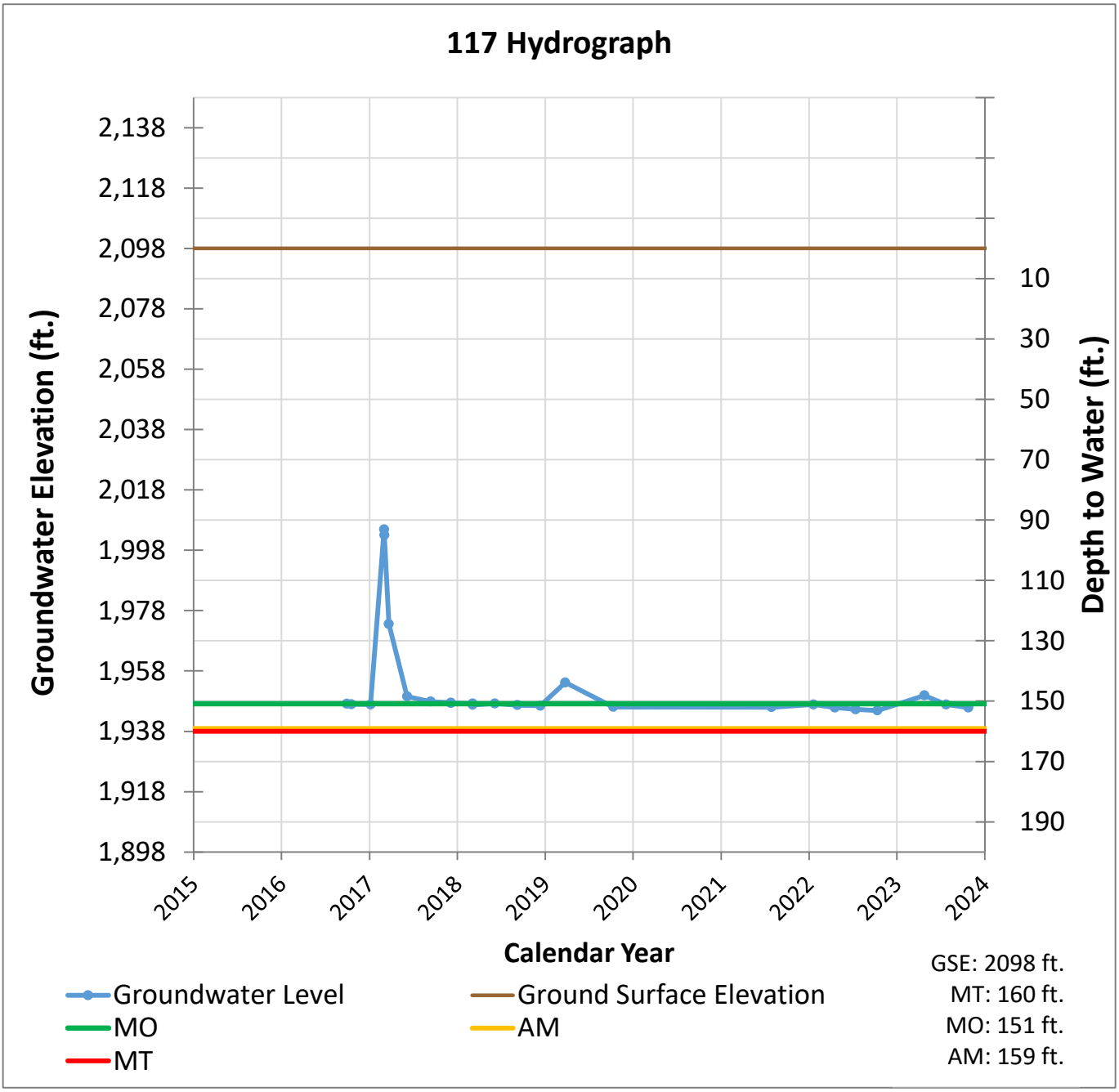

103 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,339
2,289
2,239
2,189
2,139
2,089
2,039
1,989
1,939
1,889
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2289 ft.
MT: 290 ft.
MO: 235 ft.
AM: 285 ft.

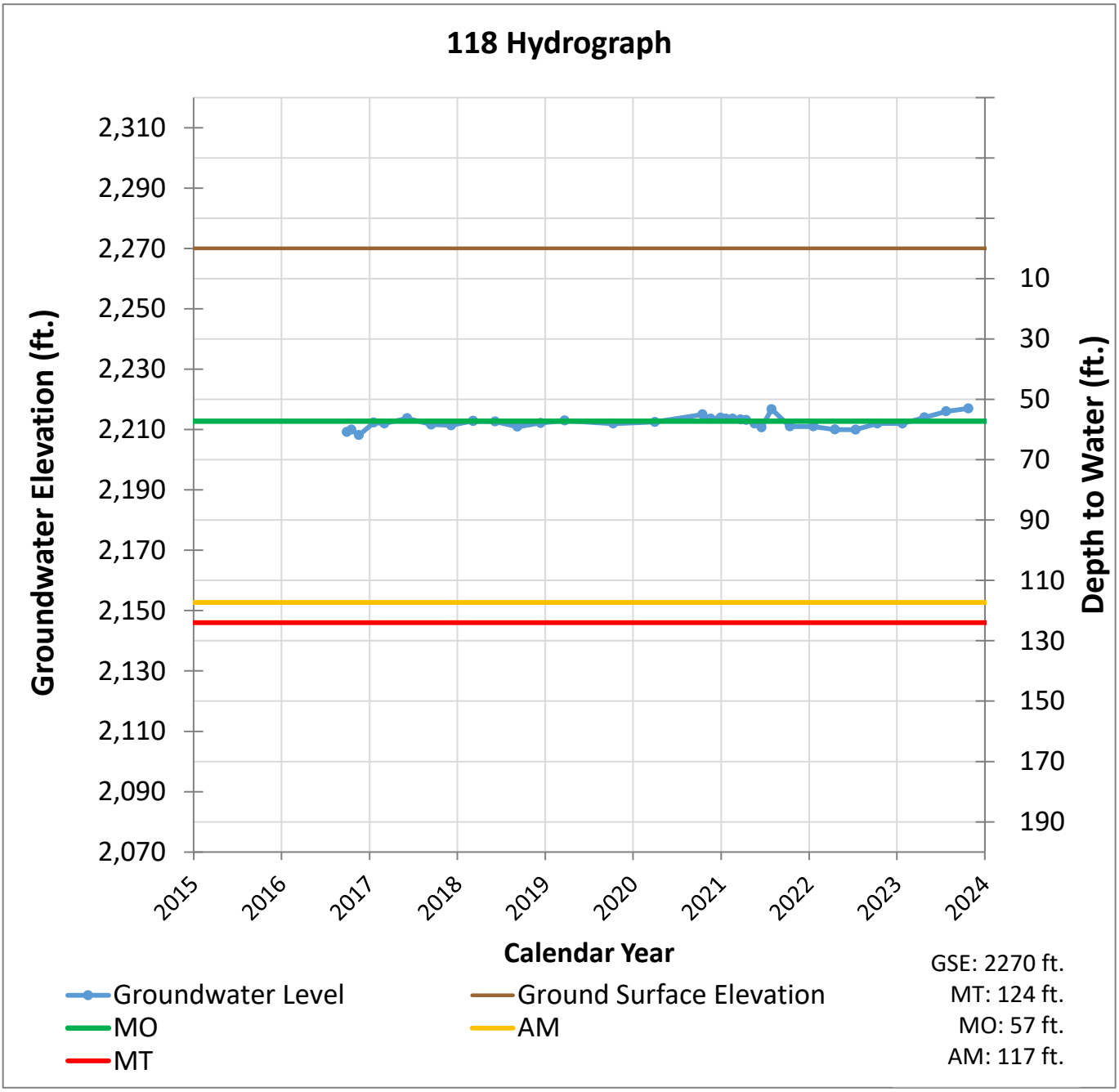

106 Hydrograph
Groundwater Elevation (ft.)
2,367
2,347
2,327
2,307
2,287
2,267
2,247
2,227
2,207
2,187
2,167
2,147
2,127
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2327 ft.
MT: 154 ft.
MO: 141 ft.
AM: 153 ft.

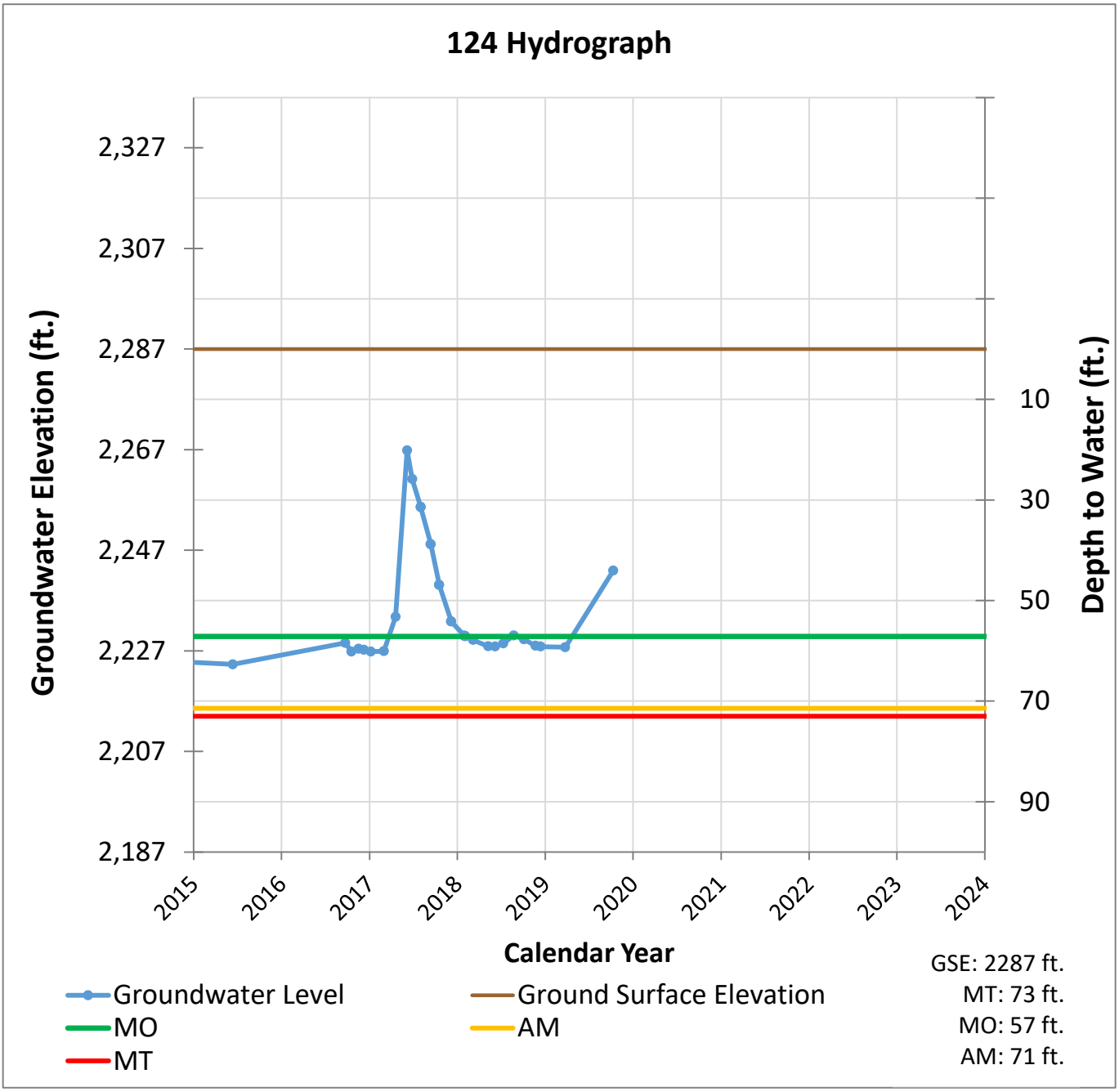

107 Hydrograph
Groundwater Elevation (ft.)
2,522
2,502
2,482
2,462
2,442
2,422
2,402
2,382
2,362
2,342
2,322
2,302
2,282
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2482 ft.
MT: 91 ft.
MO: 72 ft.
AM: 89 ft.

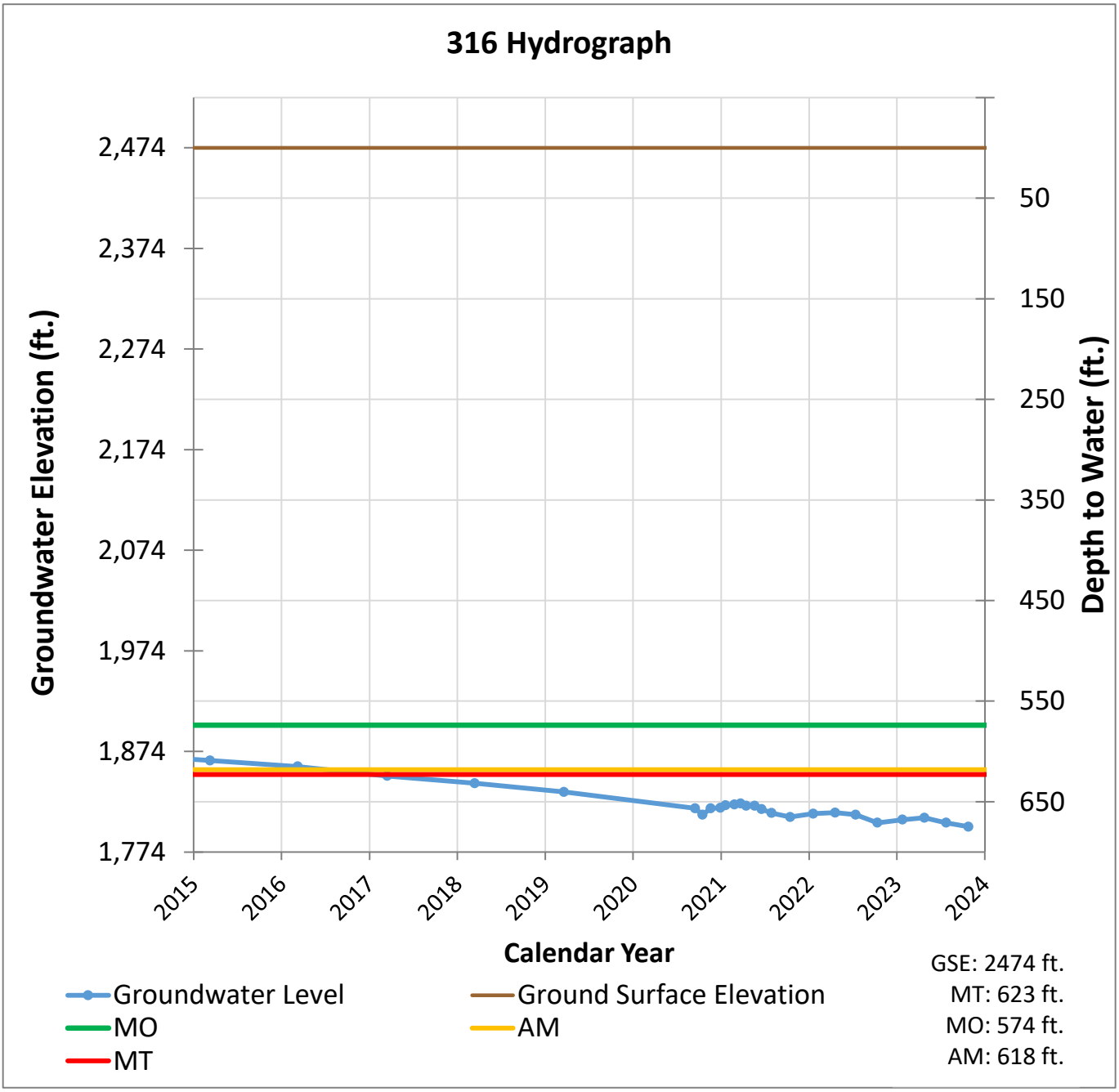

112 Hydrograph
Groundwater Elevation (ft.)
2,179
2,159
2,139
2,119
2,099
2,079
2,059
2,039
2,019
1,999
1,979
1,959
1,939
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2139 ft.
MT: 87 ft.
MO: 85 ft.
AM: 87 ft.

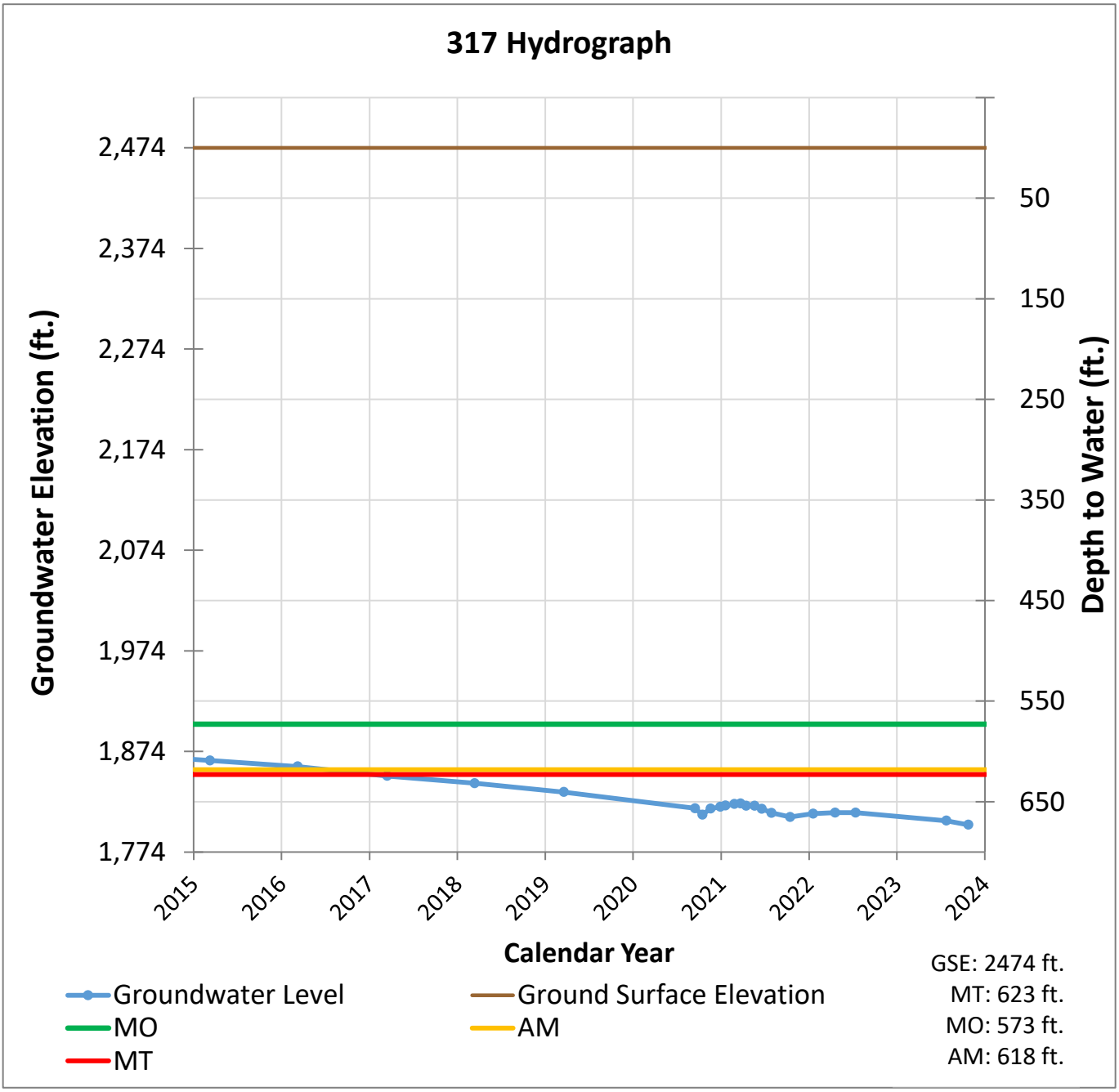

114 Hydrograph
Groundwater Elevation (ft.)
1,965
1,945
1,925
1,905
1,885
1,865
1,845
1,825
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1925 ft.
MT: 47 ft.
MO: 45 ft.
AM: 47 ft.

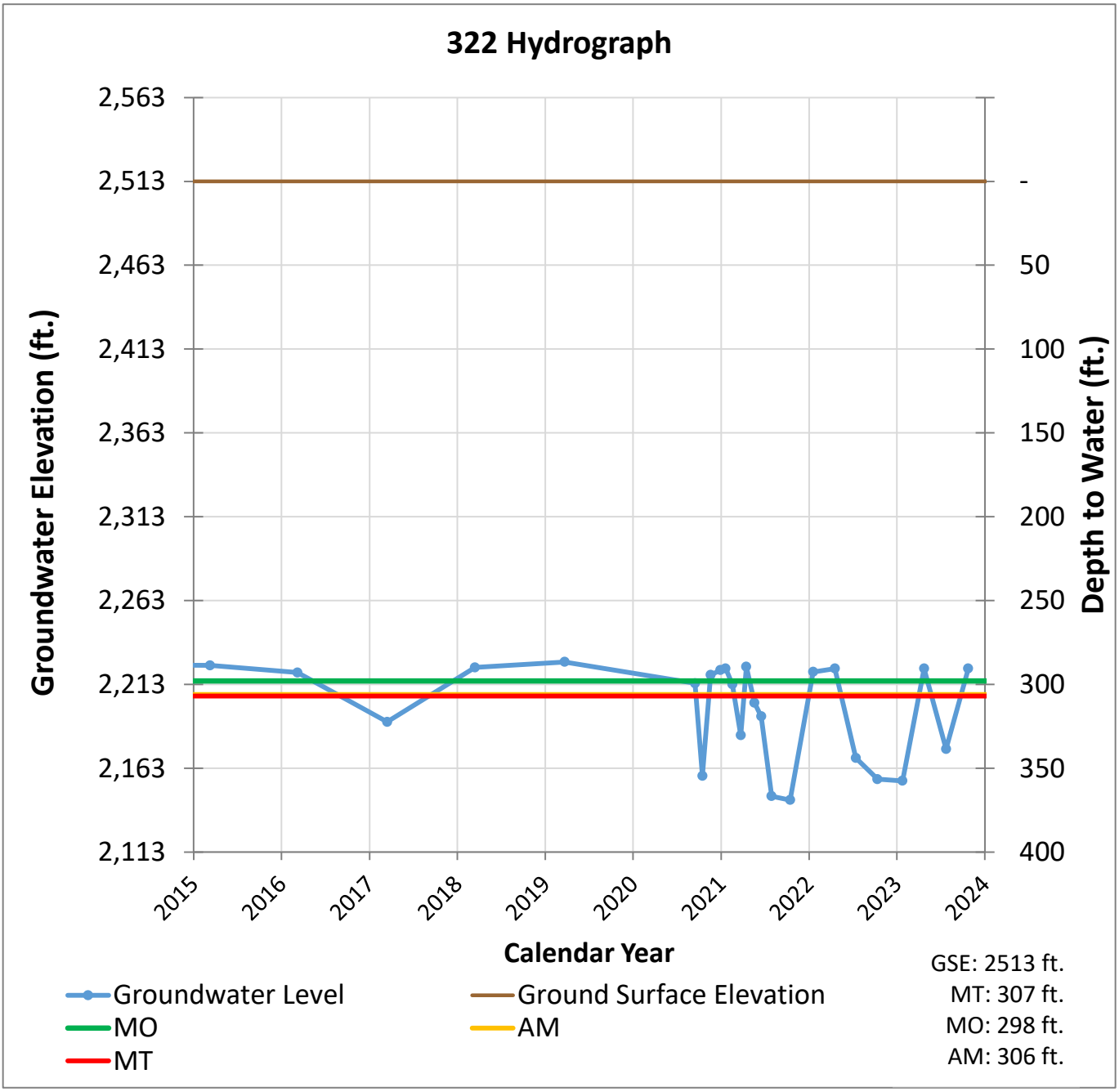

117 Hydrograph
Groundwater Elevation (ft.)
2,138
2,118
2,098
2,078
2,058
2,038
2,018
1,998
1,978
1,958
1,938
1,918
1,898
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2098 ft.
MT: 160 ft.
MO: 151 ft.
AM: 159 ft.

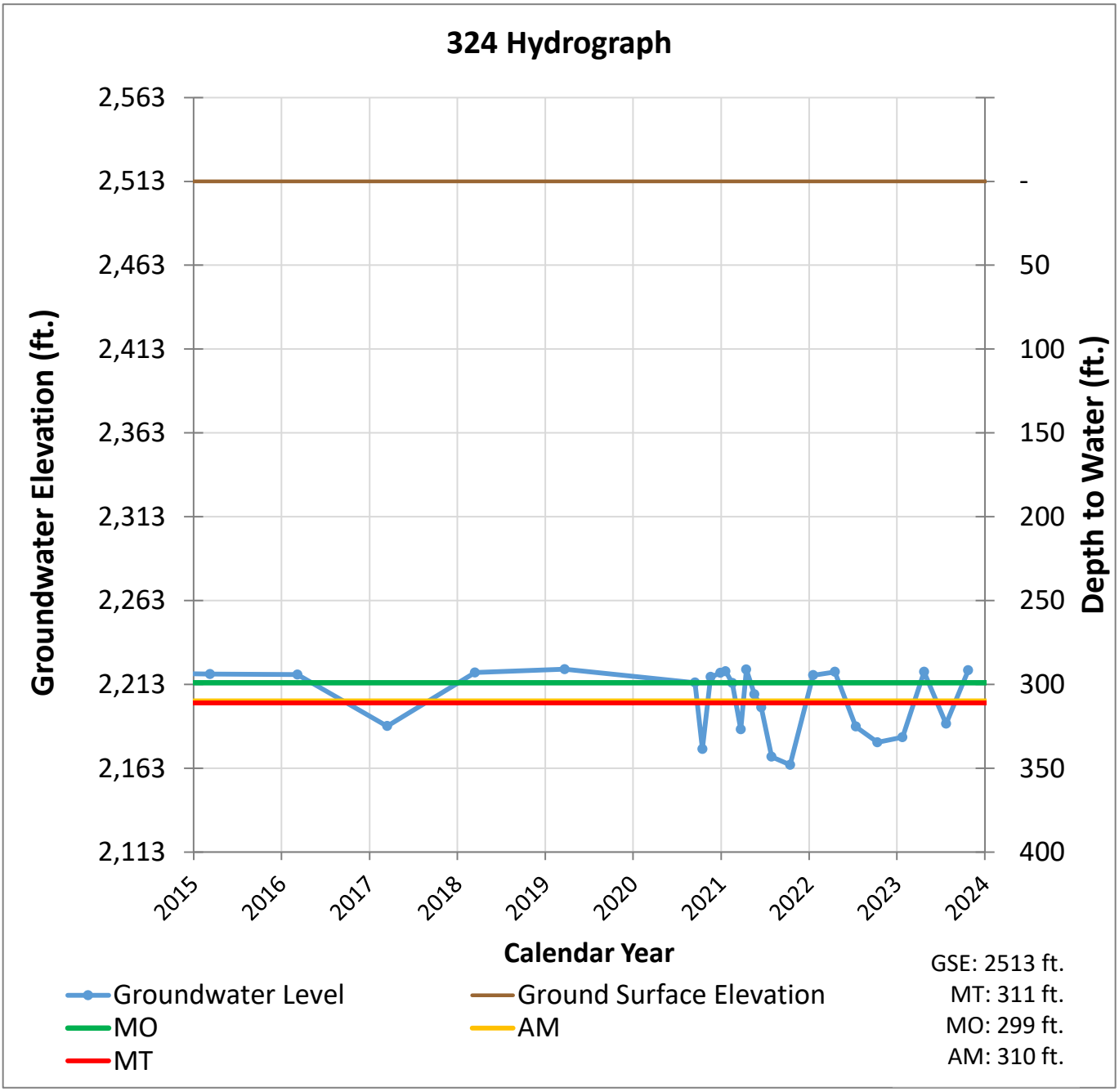

118 Hydrograph
Groundwater Elevation (ft.)
2,310
2,290
2,270
2,250
2,230
2,210
2,190
2,170
2,150
2,130
2,110
2,090
2,070
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2270 ft.
MT: 124 ft.
MO: 57 ft.
AM: 117 ft.

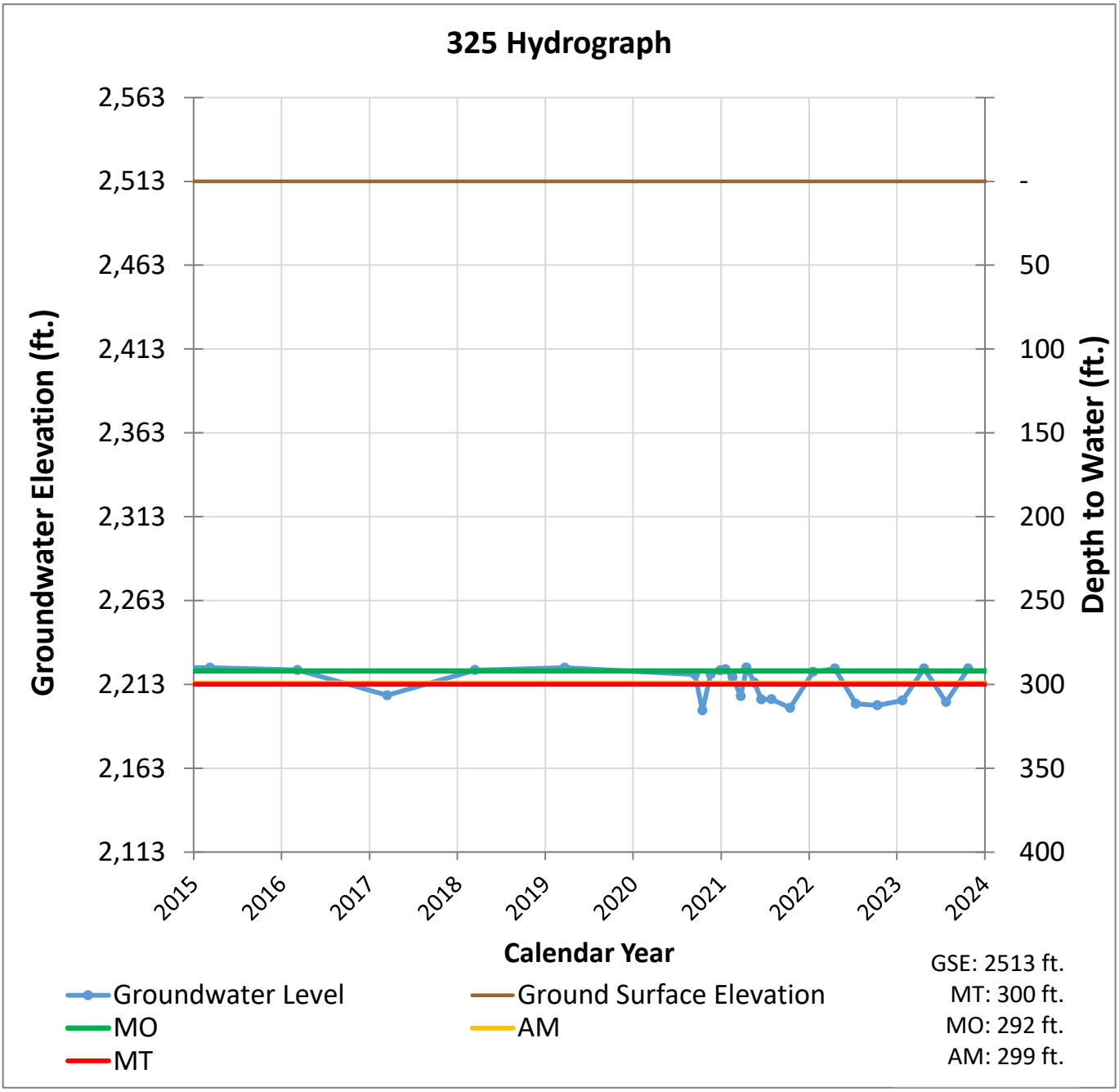

124 Hydrograph
Groundwater Elevation (ft.)
2,327
2,307
2,287
2,267
2,247
2,227
2,207
2,187
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2287 ft.
MT: 73 ft.
MO: 57 ft.
AM: 71 ft.

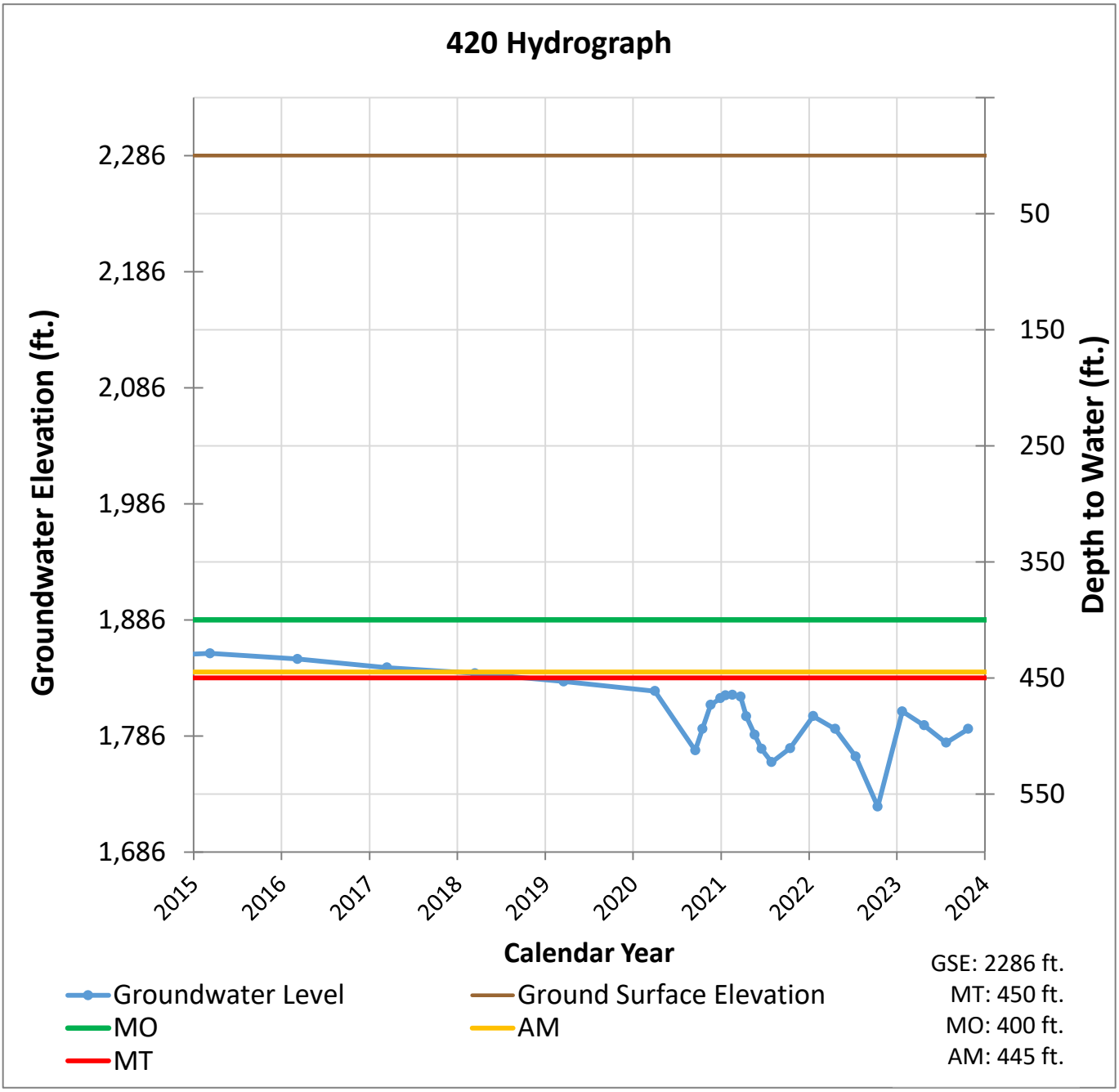

316 Hydrograph
Groundwater Elevation (ft.)
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
Depth to Water (ft.)
50
150
250
350
450
550
650
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 623 ft.
MO: 574 ft.
AM: 618 ft.

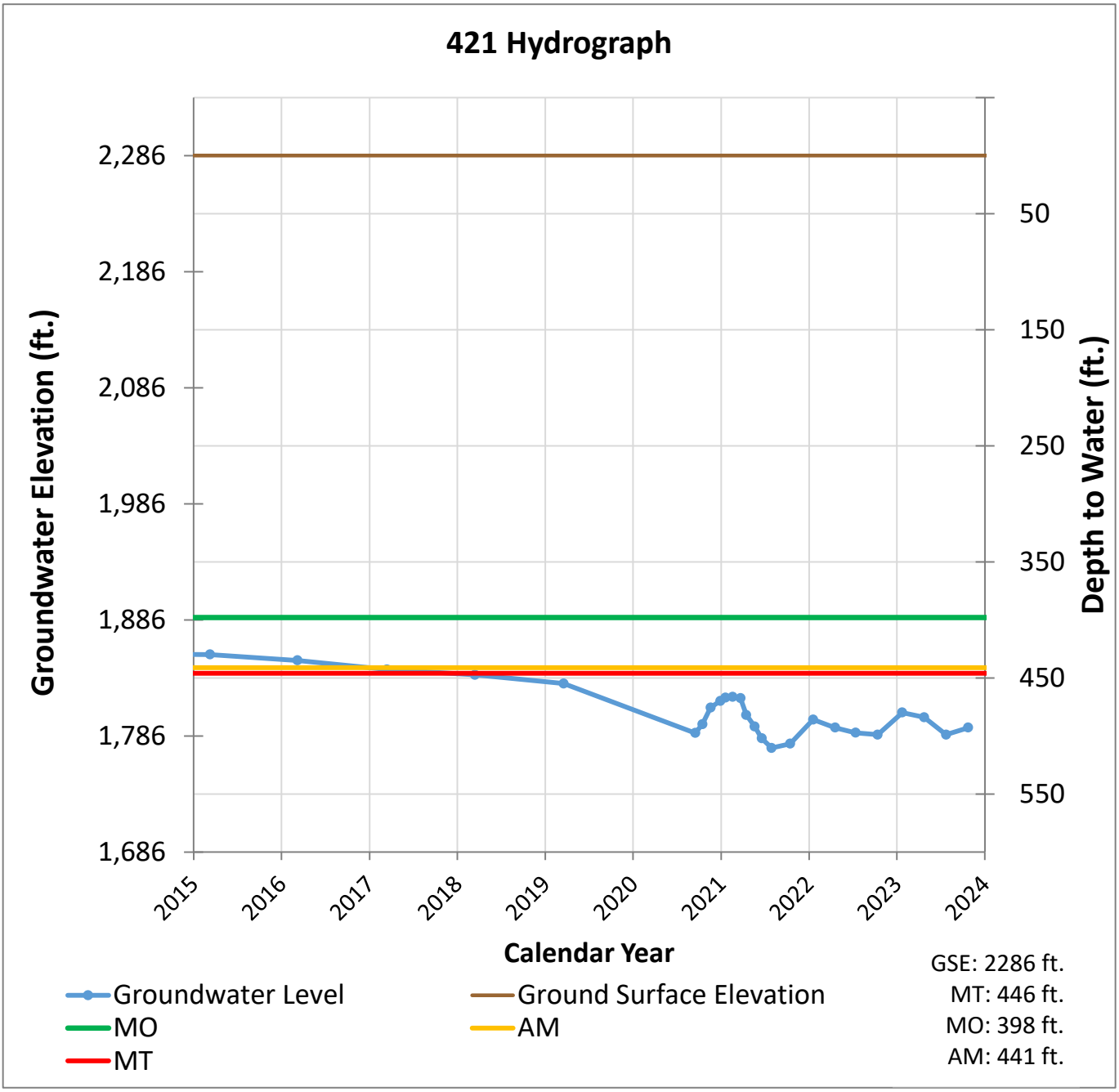

317 Hydrograph
Groundwater Elevation (ft.)
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
Depth to Water (ft.)
50
150
250
350
450
550
650
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 623 ft.
MO: 573 ft.
AM: 618 ft.

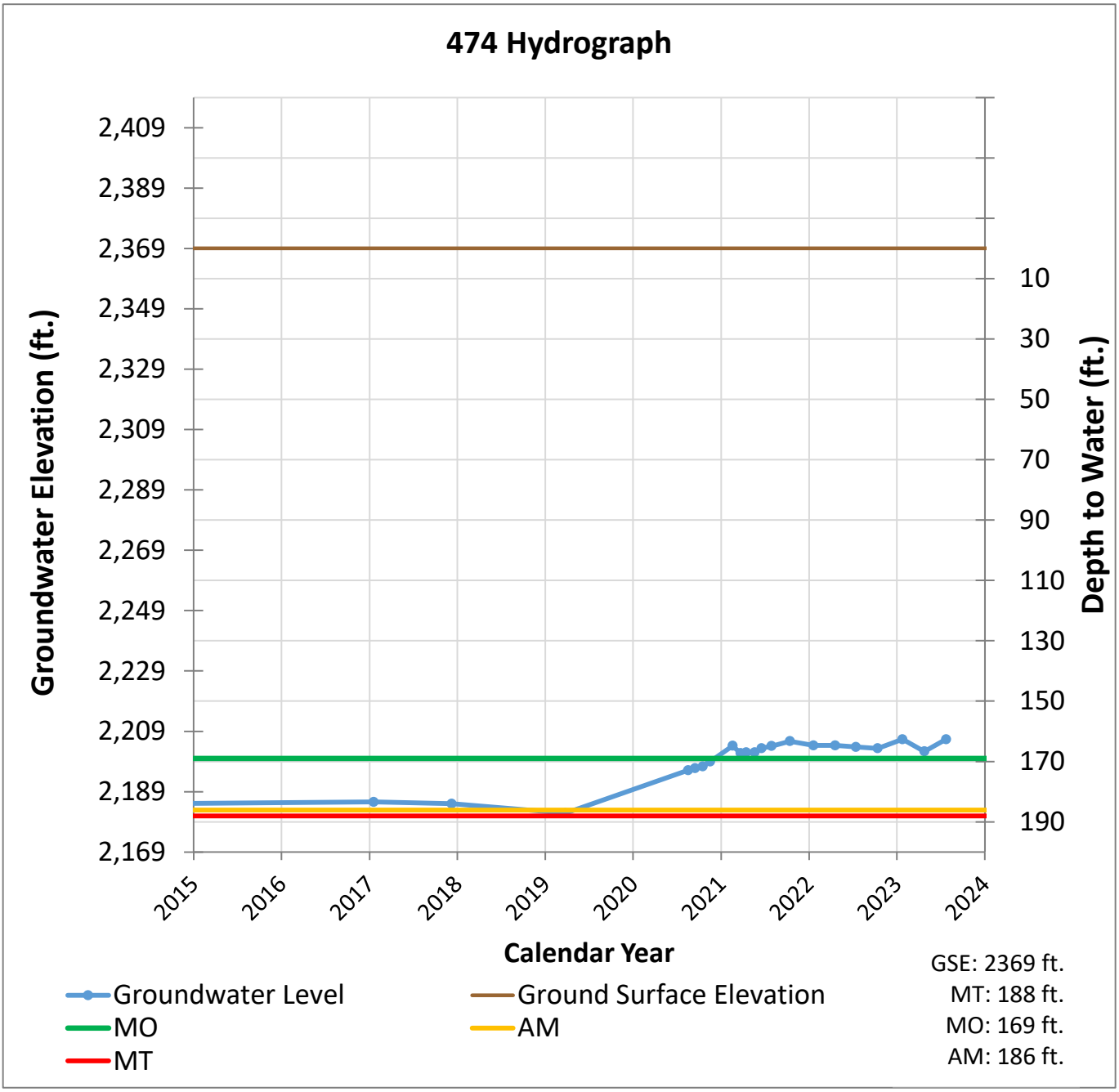

322 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,563
2,513
2,463
2,413
2,363
2,313
2,263
2,213
2,163
2,113
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 307 ft.
MO: 298 ft.
AM: 306 ft.

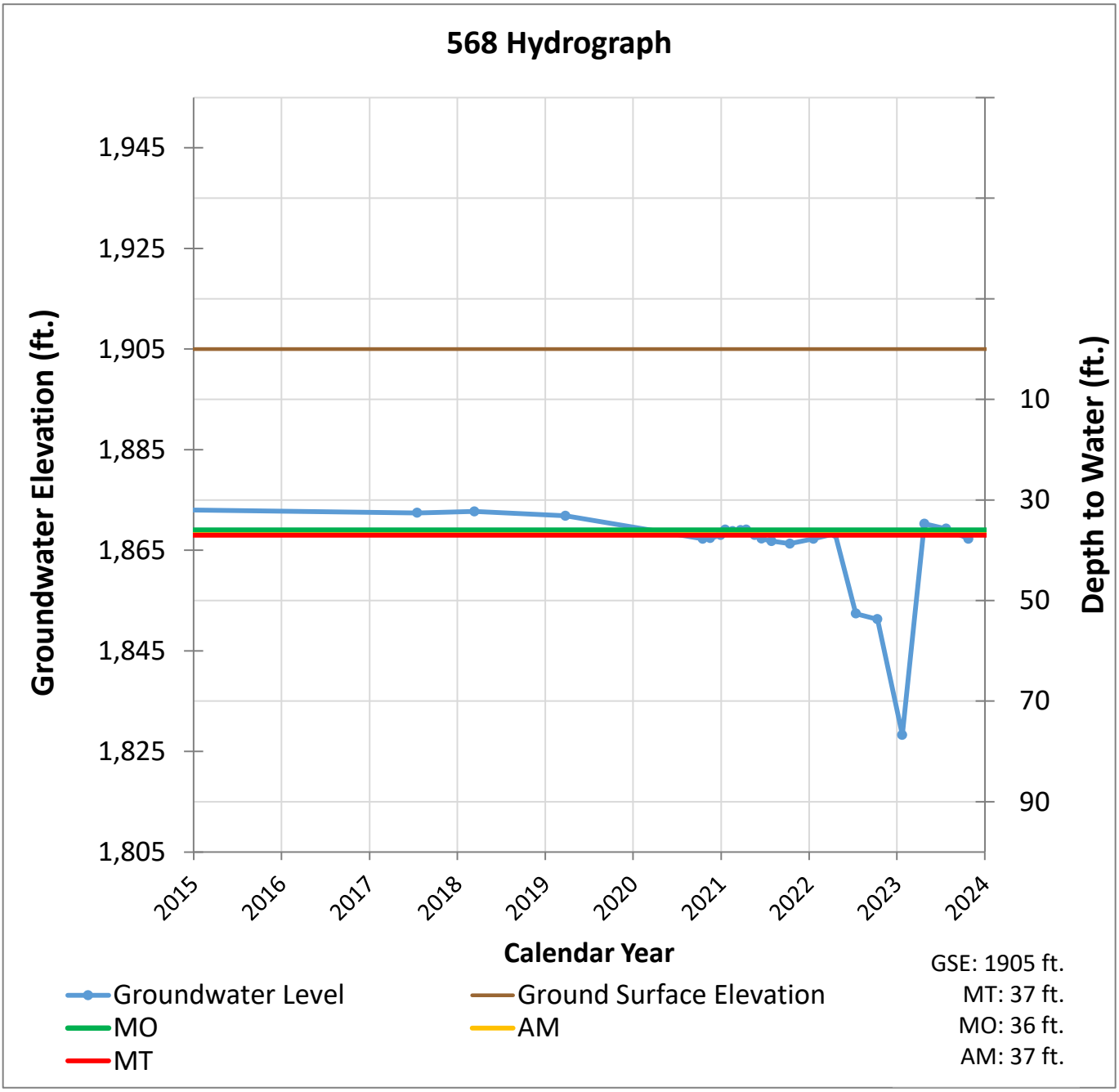

324 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,563
2,513
2,463
2,413
2,363
2,313
2,263
2,213
2,163
2,113
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 311 ft.
MO: 299 ft.
AM: 310 ft.

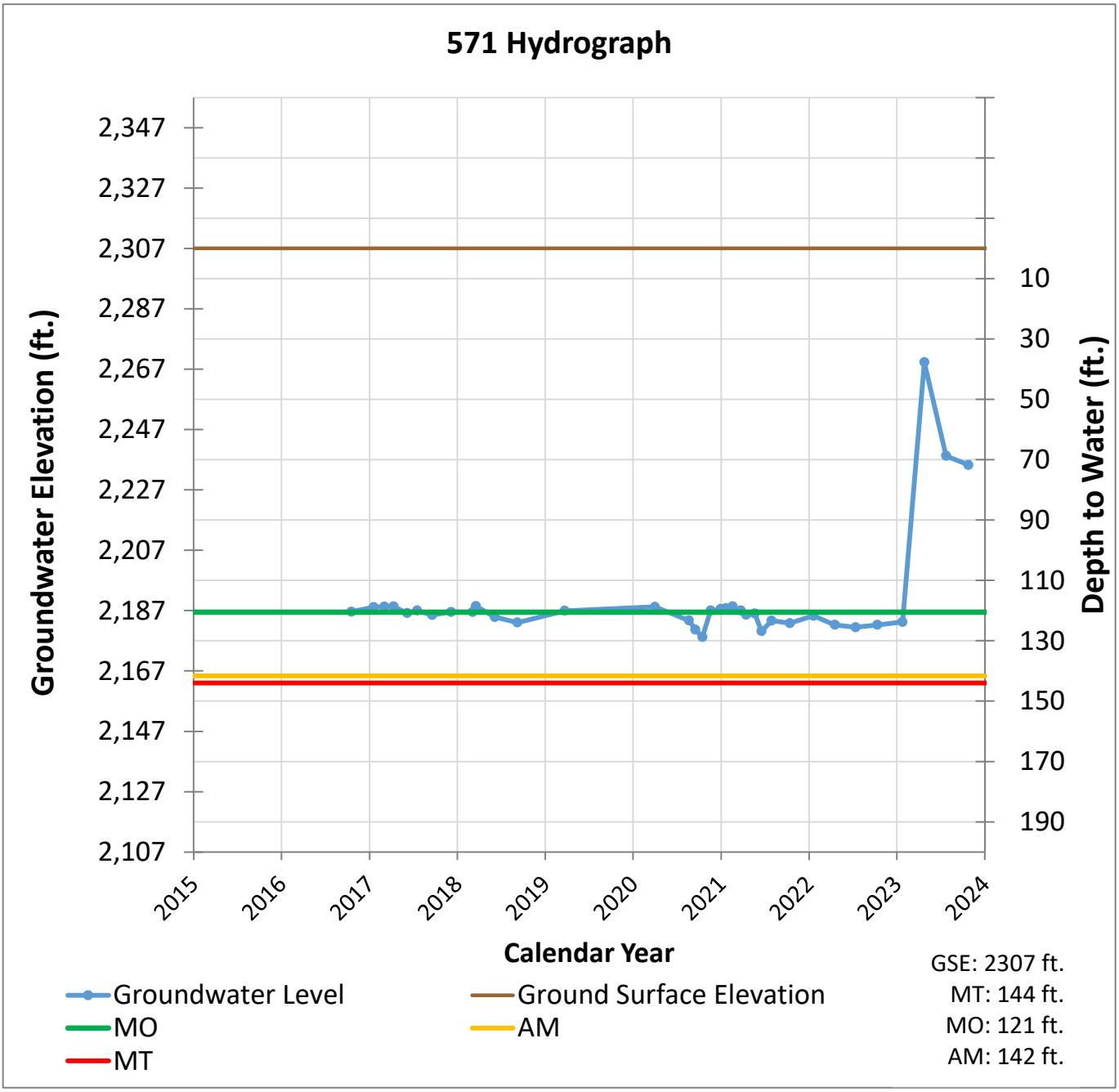

325 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,563
2,513
2,463
2,413
2,363
2,313
2,263
2,213
2,163
2,113
-
50
100
150
200
250
300
350
400
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 300 ft.
MO: 292 ft.
AM: 299 ft.

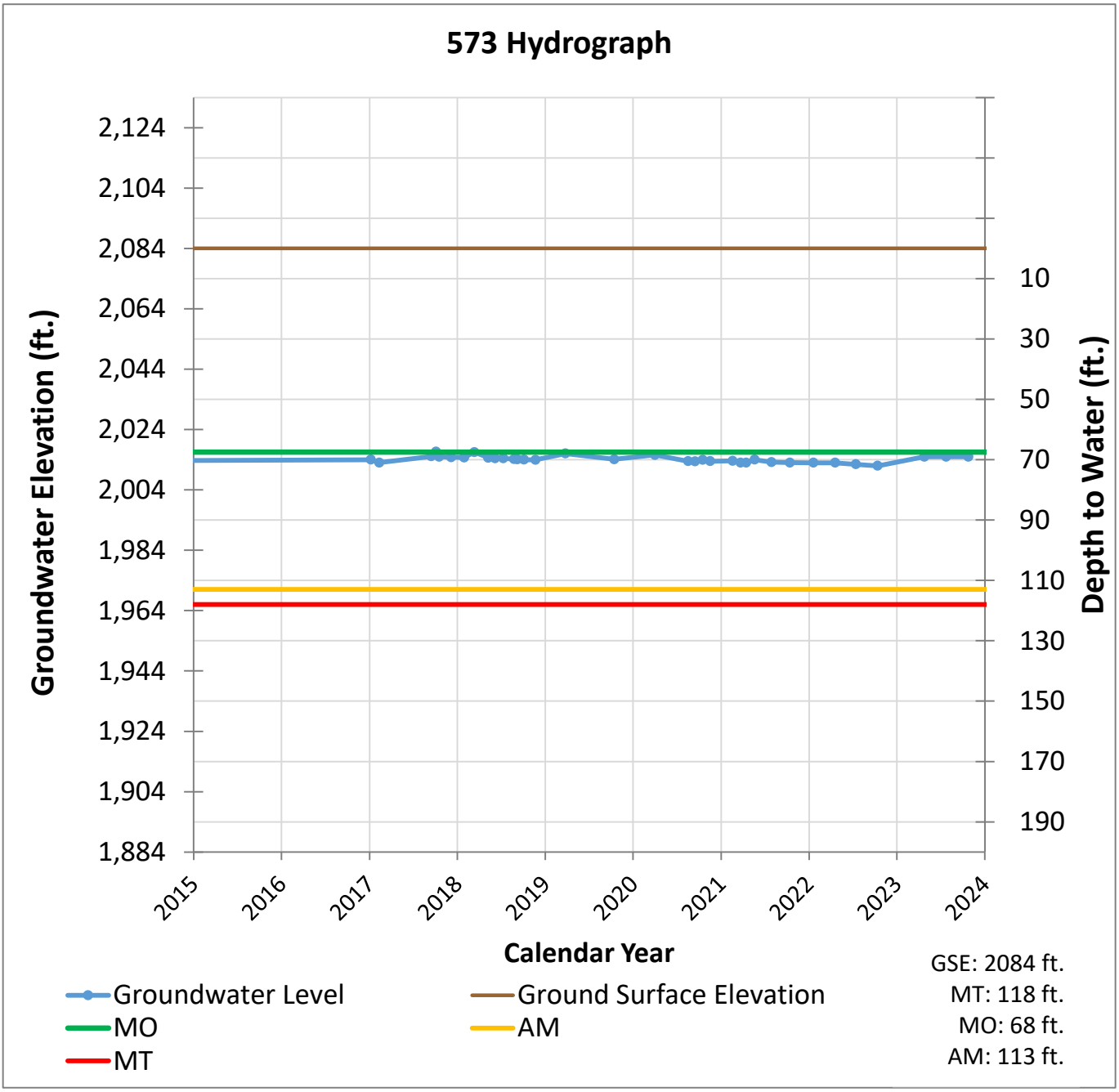

420 Hydrograph
Groundwater Elevation (ft.)
2,286
2,186
2,086
1,986
1,886
1,786
1,686
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 450 ft.
MO: 400 ft.
AM: 445 ft.

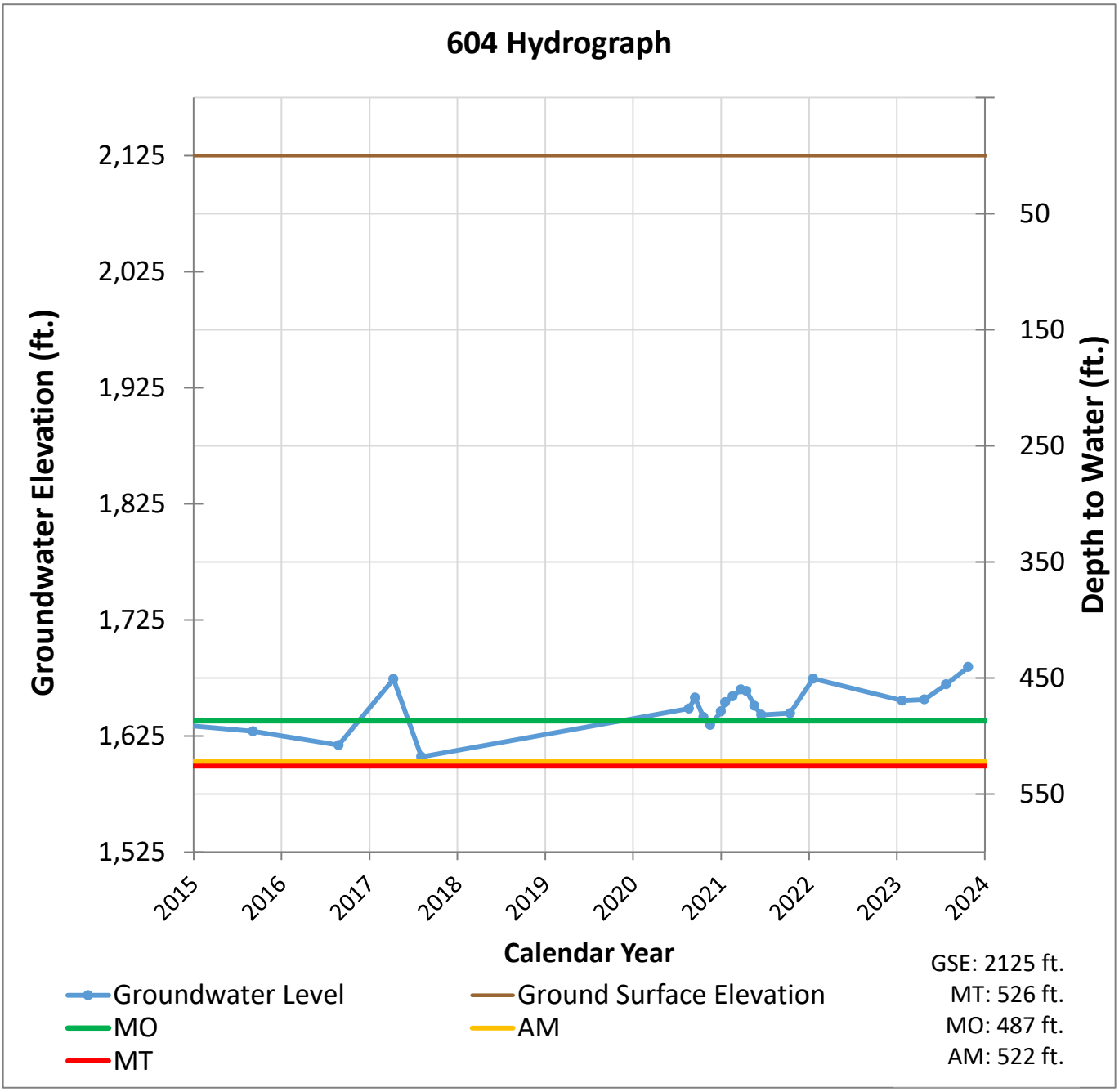

421 Hydrograph
Groundwater Elevation (ft.)
2,286
2,186
2,086
1,986
1,886
1,786
1,686
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 446 ft.
MO: 398 ft.
AM: 441 ft.

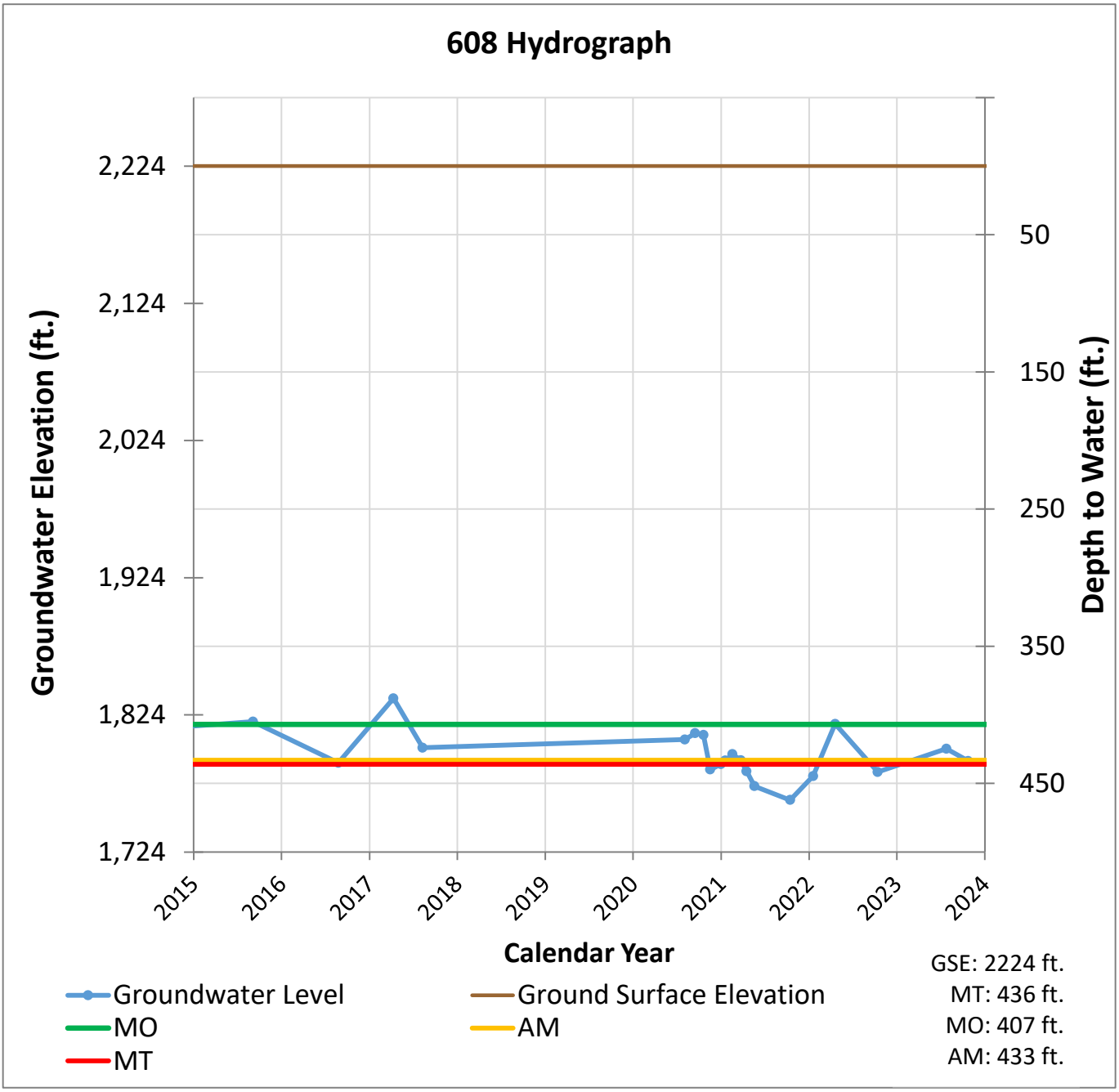

474 Hydrograph
Groundwater Elevation (ft.)
2,409
2,389
2,369
2,349
2,329
2,309
2,289
2,269
2,249
2,229
2,209
2,189
2,169
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2369 ft.
MT: 188 ft.
MO: 169 ft.
AM: 186 ft.

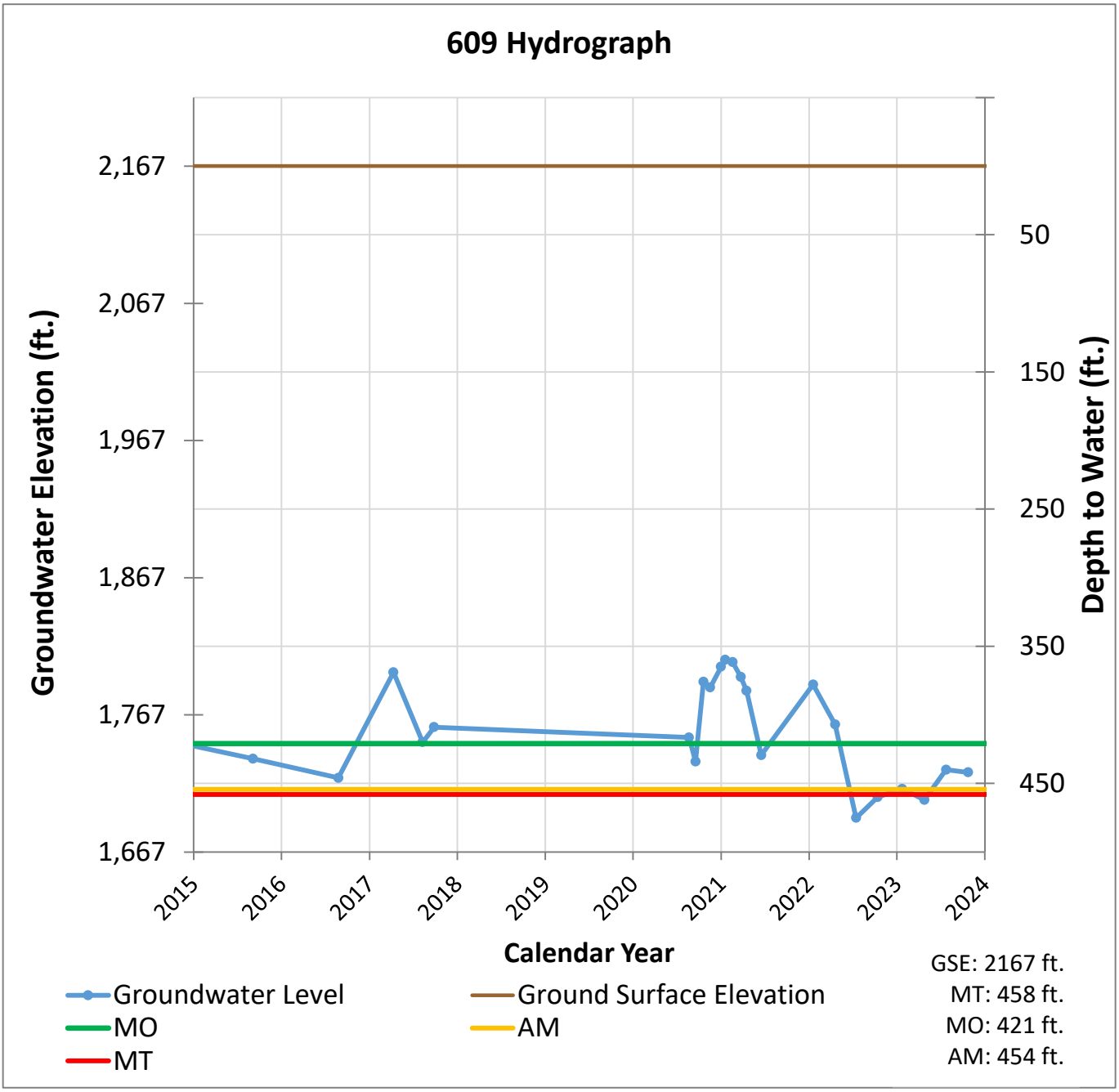

568 Hydrograph
Groundwater Elevation (ft.)
1,945
1,925
1,905
1,885
1,865
1,845
1,825
1,805
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1905 ft.
MT: 37 ft.
MO: 36 ft.
AM: 37 ft.

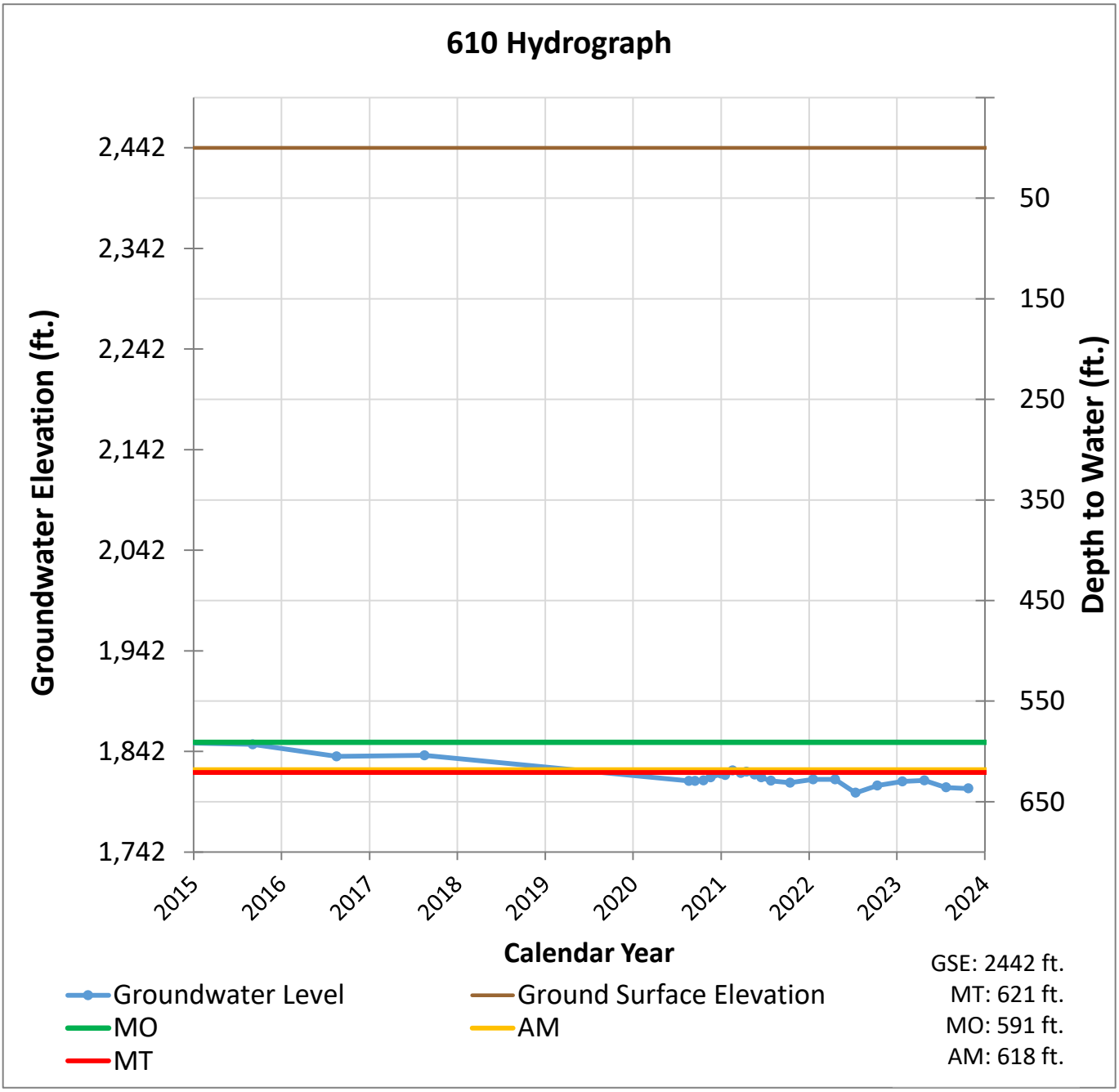

571 Hydrograph
Groundwater Elevation (ft.)
2,347
2,327
2,307
2,287
2,267
2,247
2,227
2,207
2,187
2,167
2,147
2,127
2,107
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2307 ft.
MT: 144 ft.
MO: 121 ft.
AM: 142 ft.

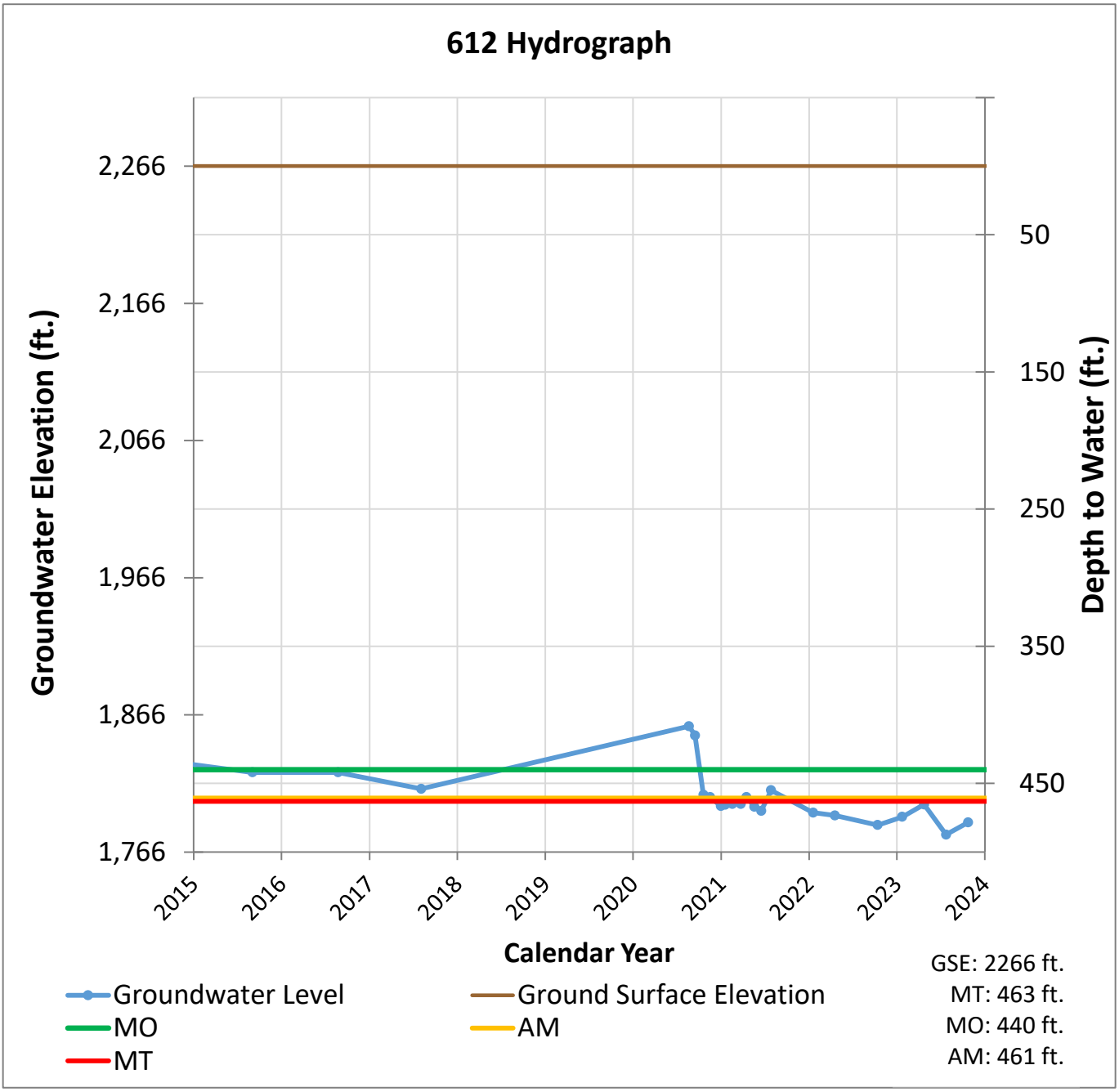

573 Hydrograph
Groundwater Elevation (ft.)
2,124
2,104
2,084
2,064
2,044
2,024
2,004
1,984
1,964
1,944
1,924
1,904
1,884
Depth to Water (ft.)
10
30
50
70
90
110
130
150
170
190
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2084 ft.
MT: 118 ft.
MO: 68 ft.
AM: 113 ft.

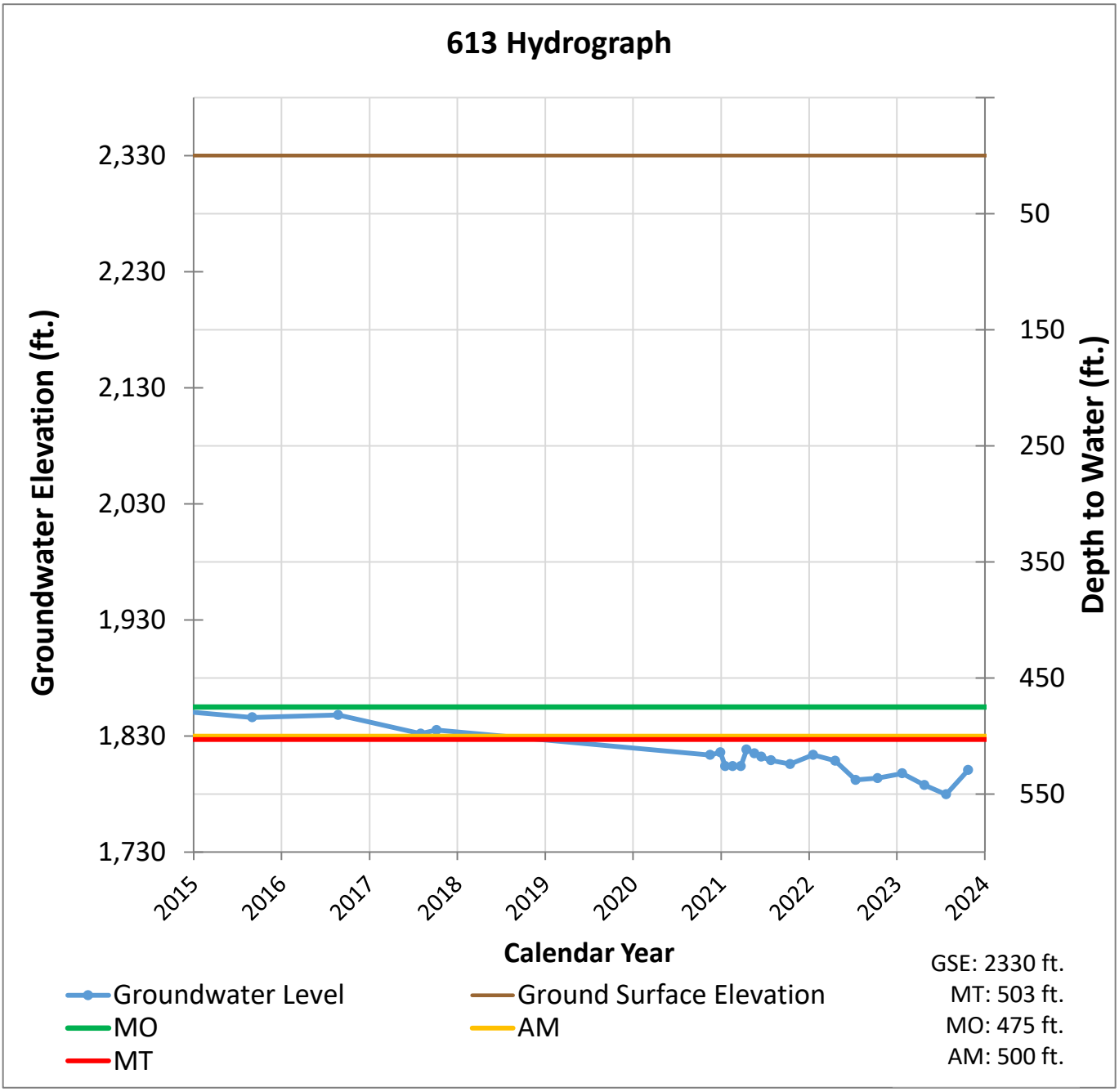

604 Hydrograph
Groundwater Elevation (ft.)
2,125
2,025
1,925
1,825
1,725
1,625
1,525
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2125 ft.
MT: 526 ft.
MO: 487 ft.
AM: 522 ft.

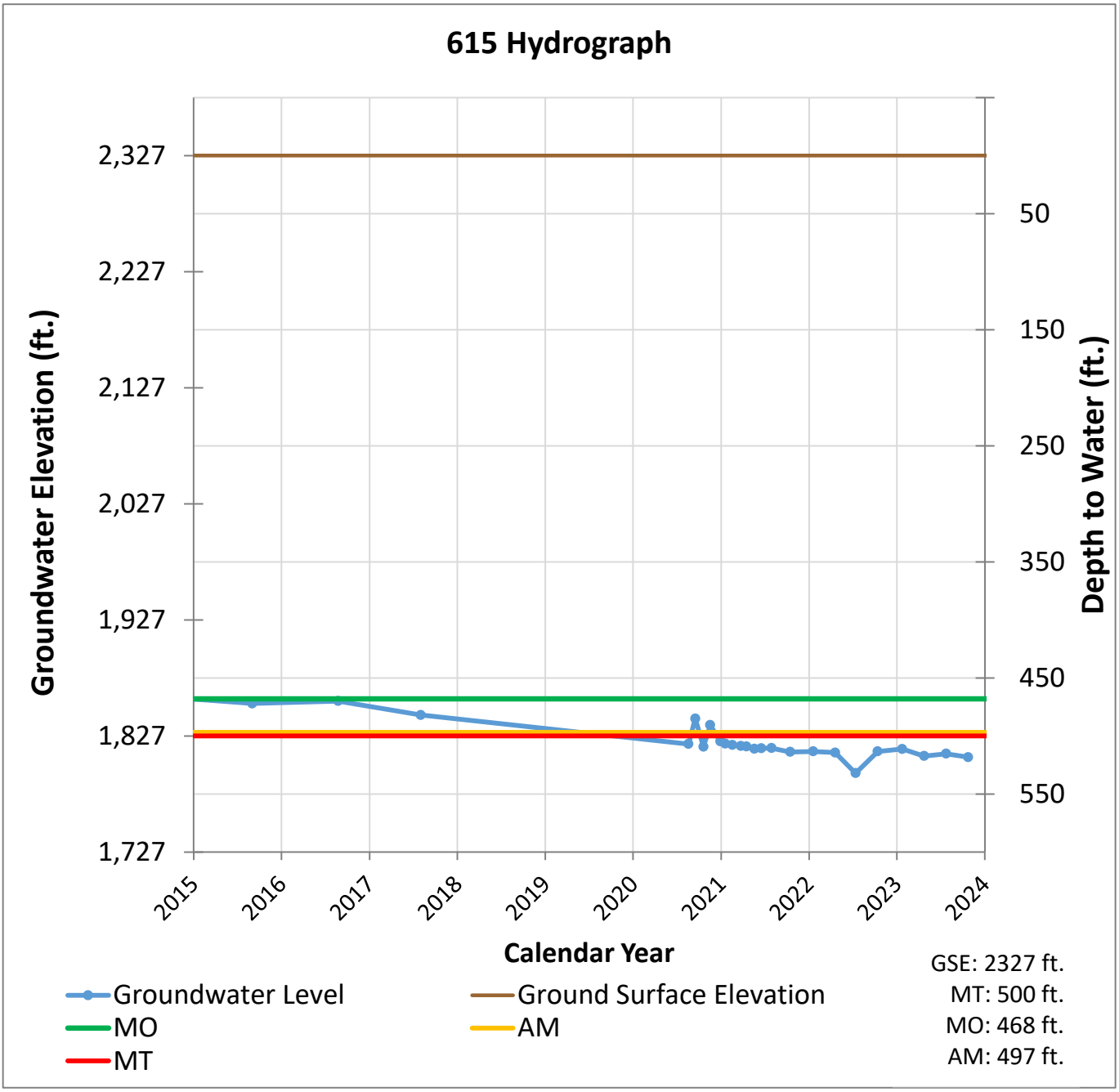

608 Hydrograph
Groundwater Elevation (ft.)
2,224
2,124
2,024
1,924
1,824
1,724
Depth to Water (ft.)
50
150
250
350
450
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2224 ft.
MT: 436 ft.
MO: 407 ft.
AM: 433 ft.

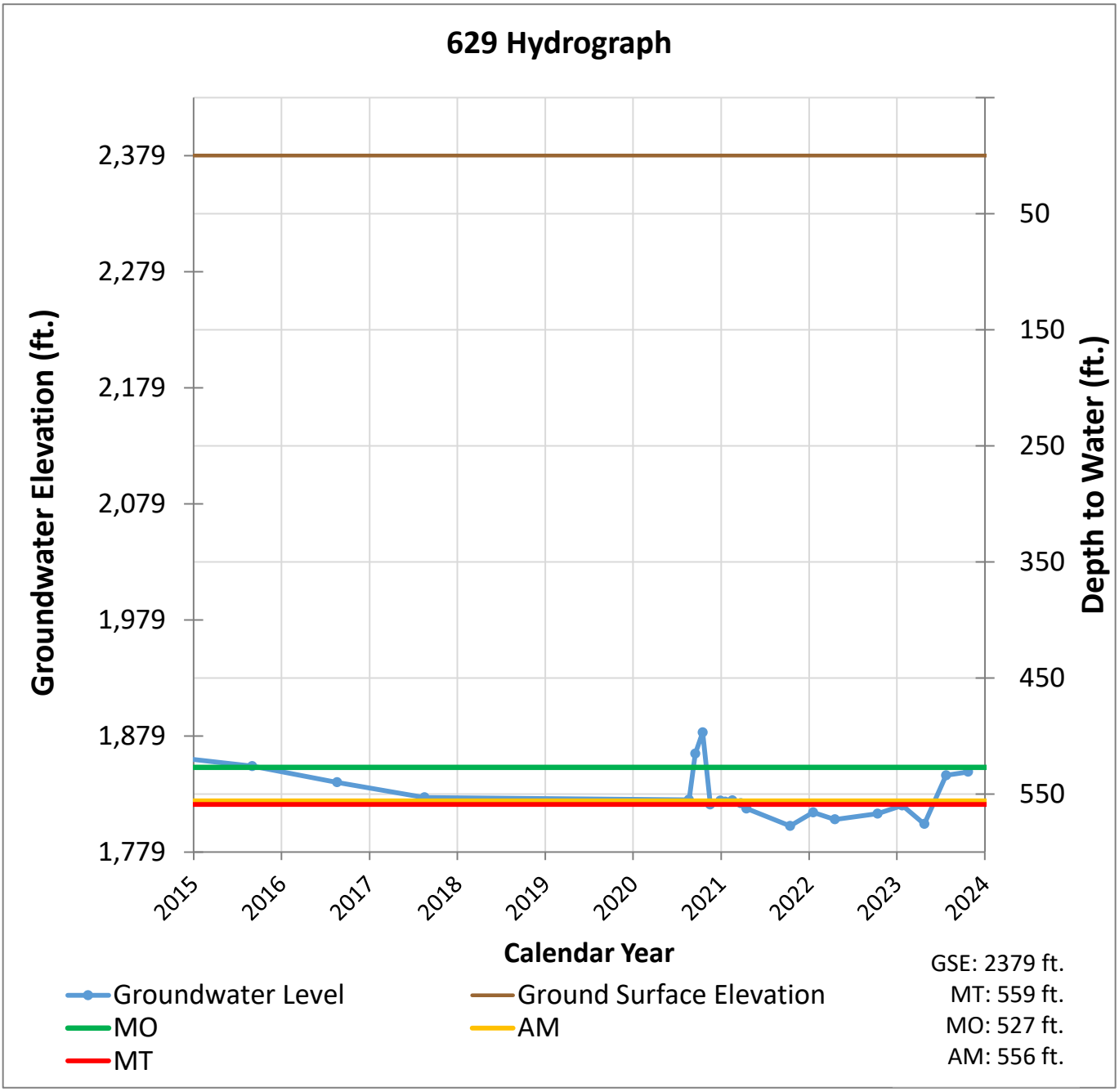

609 Hydrograph
Groundwater Elevation (ft.)
2,167
2,067
1,967
1,867
1,767
1,667
Depth to Water (ft.)
50
150
250
350
450
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2167 ft.
MT: 458 ft.
MO: 421 ft.
AM: 454 ft.

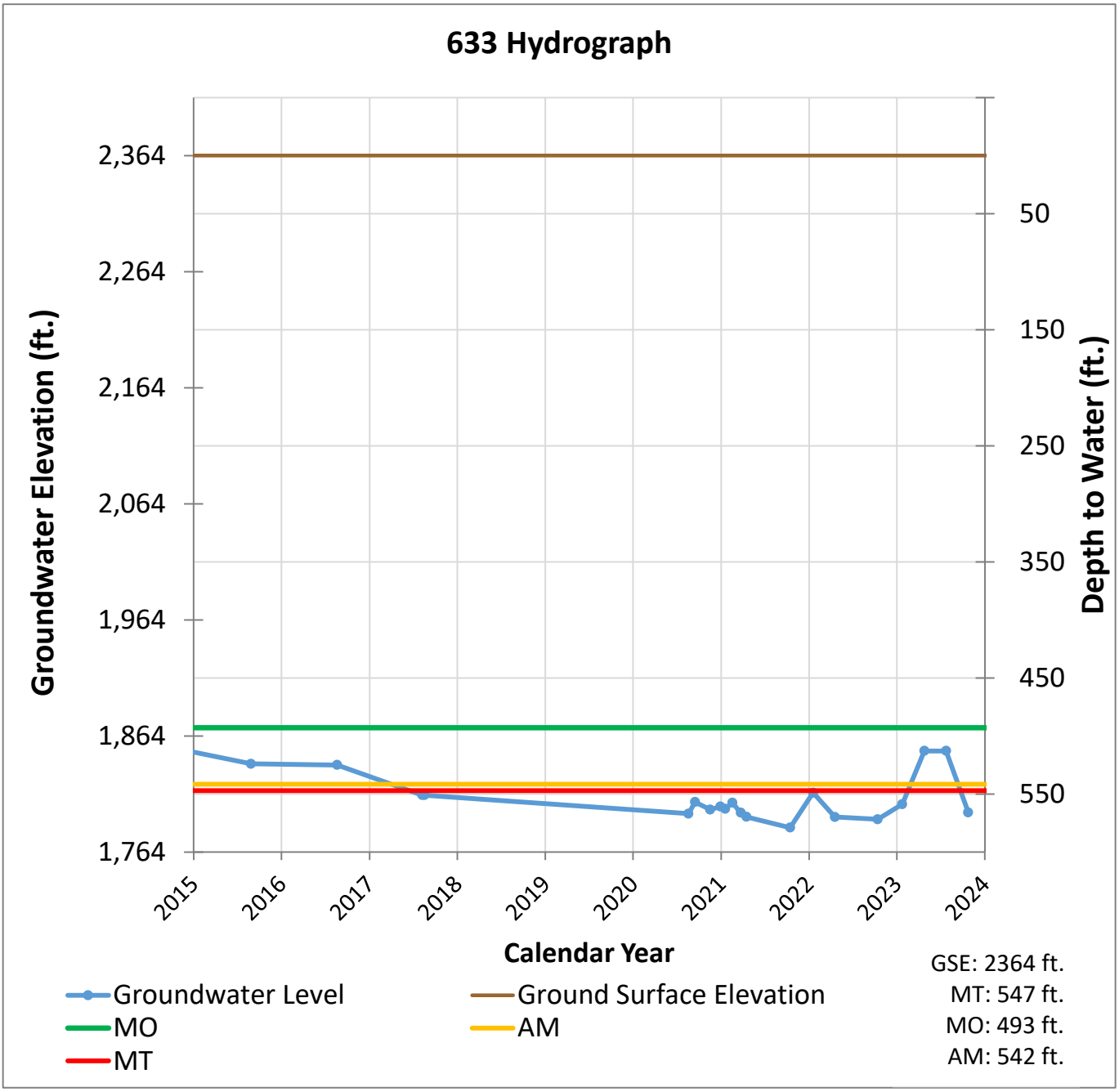

610 Hydrograph
Groundwater Elevation (ft.)
2,442
2,342
2,242
2,142
2,042
1,942
1,842
1,742
Depth to Water (ft.)
50
150
250
350
450
550
650
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2442 ft.
MT: 621 ft.
MO: 591 ft.
AM: 618 ft.

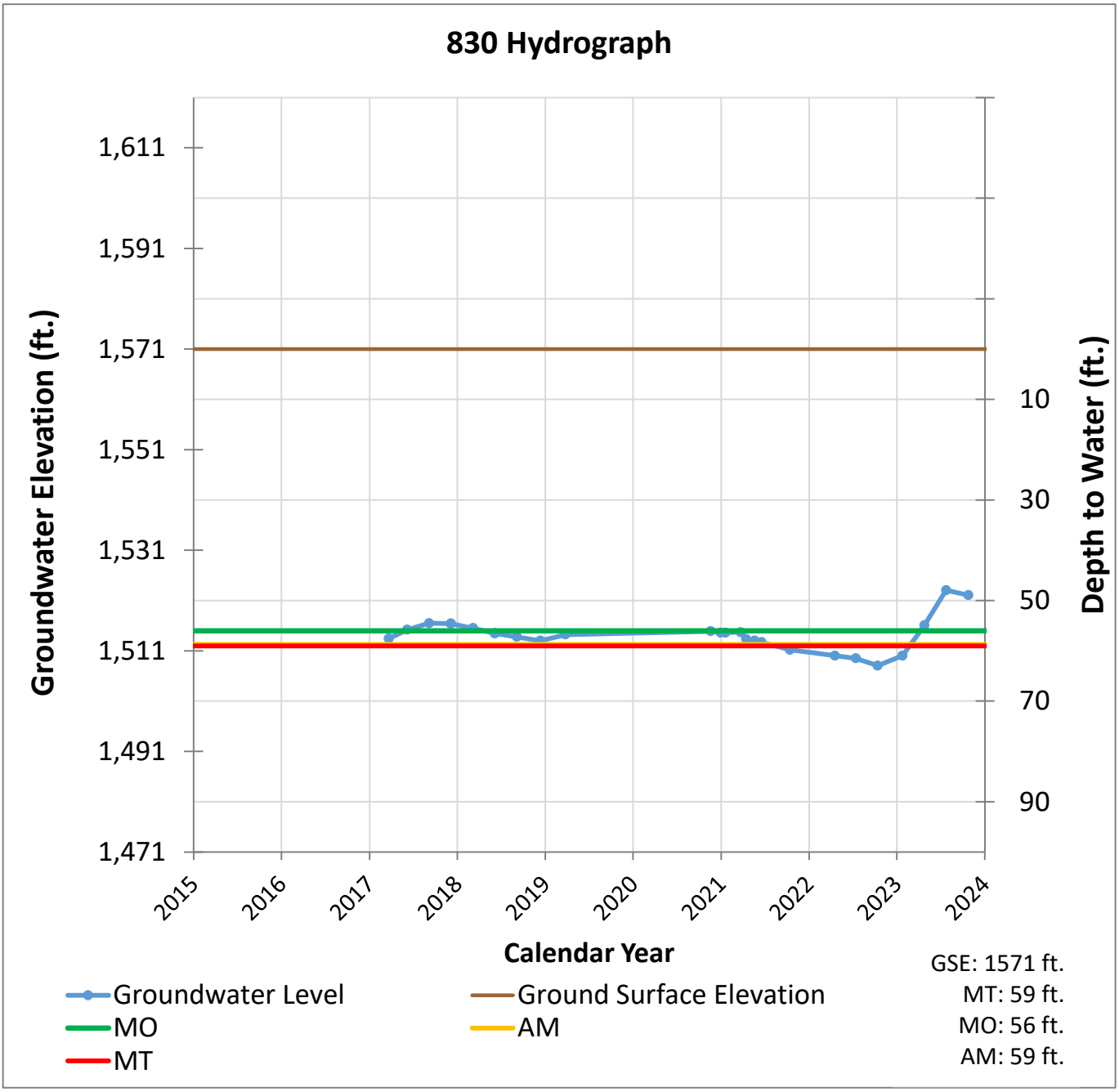

612 Hydrograph
Groundwater Elevation (ft.)
2,266
2,166
2,066
1,966
1,866
1,766
Depth to Water (ft.)
50
150
250
350
450
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2266 ft.
MT: 463 ft.
MO: 440 ft.
AM: 461 ft.

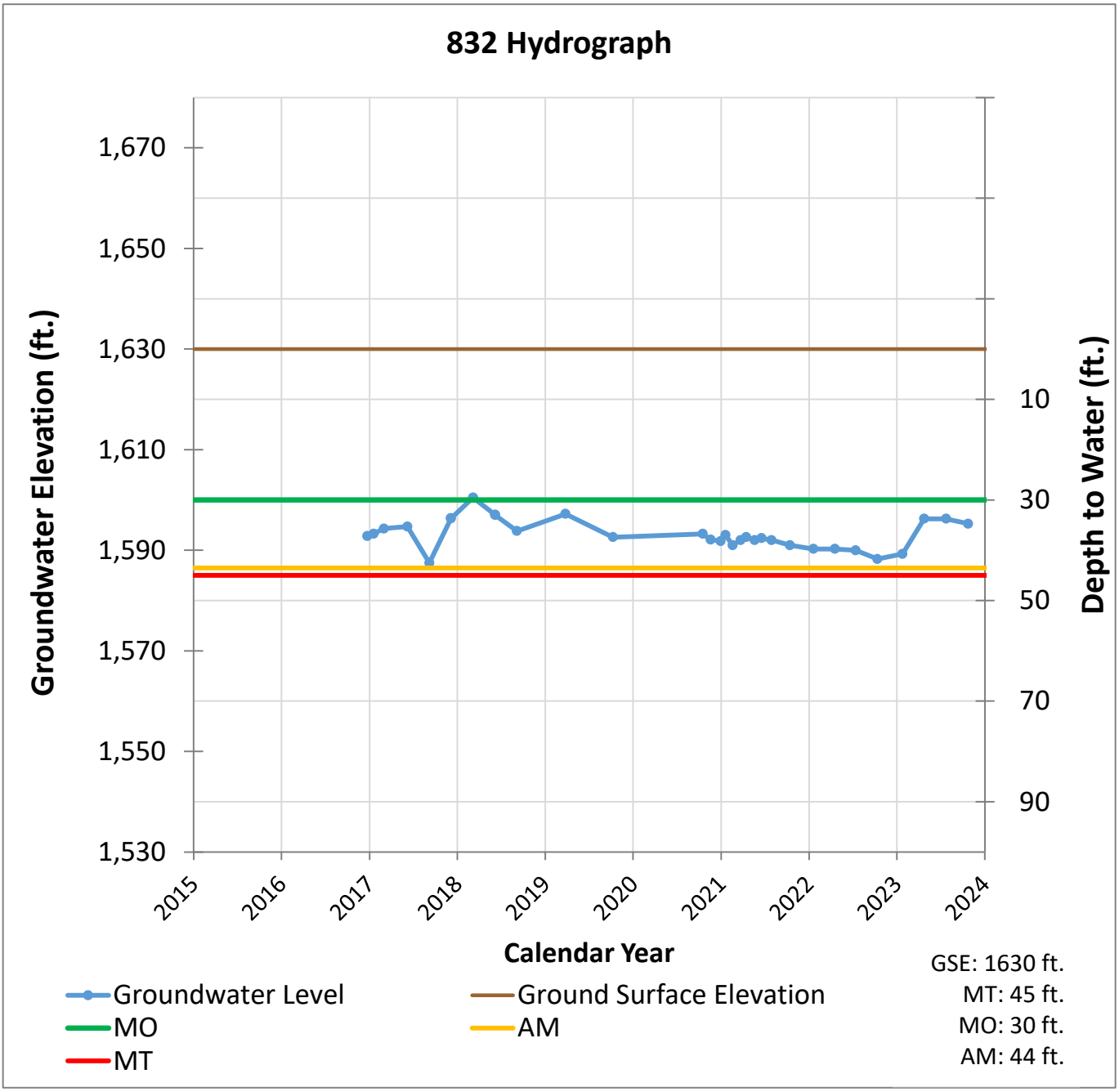

613 Hydrograph
Groundwater Elevation (ft.)
2,330
2,230
2,130
2,030
1,930
1,830
1,730
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2330 ft.
MT: 503 ft.
MO: 475 ft.
AM: 500 ft.

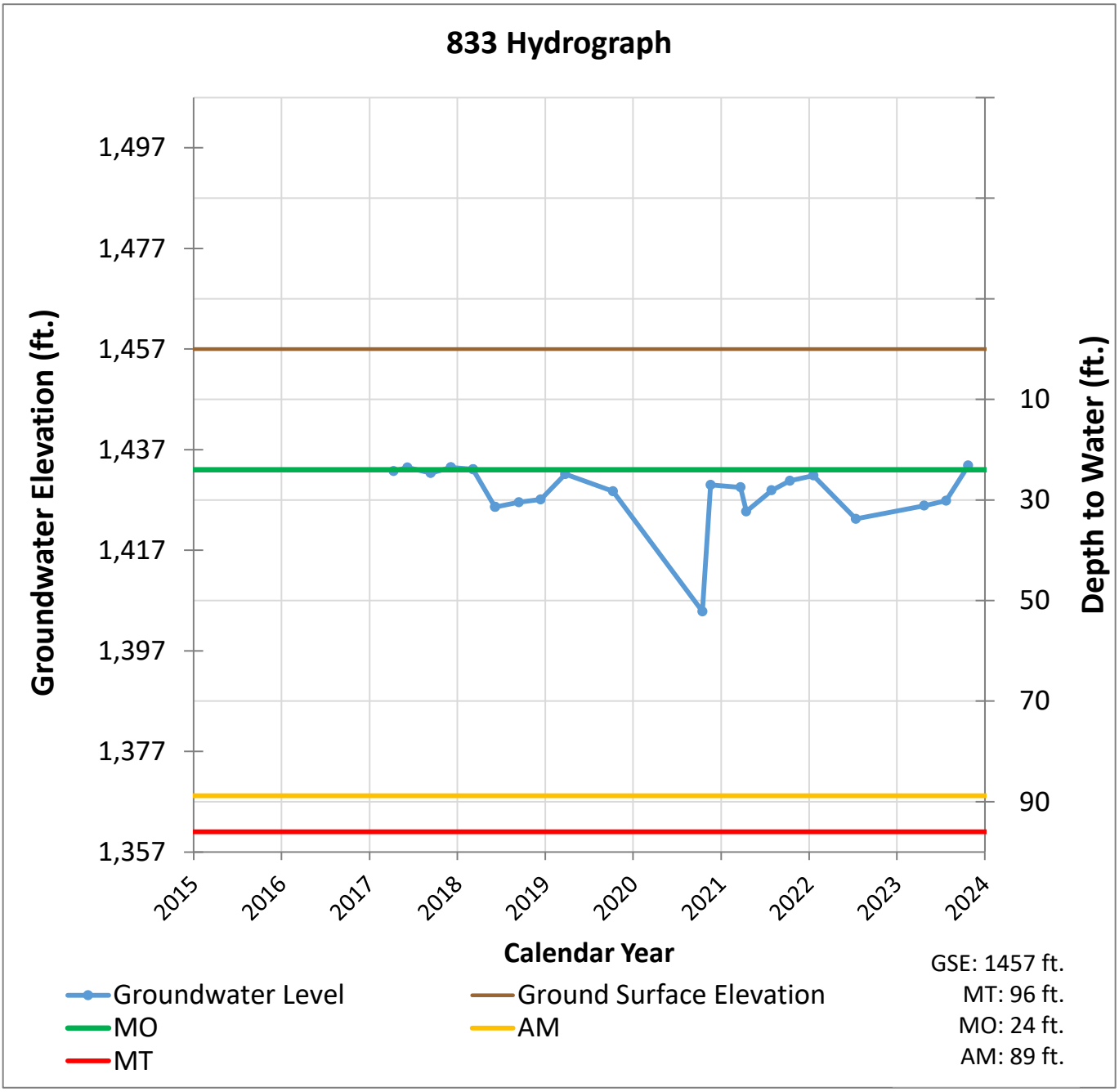

615 Hydrograph
Groundwater Elevation (ft.)
2,327
2,227
2,127
2,027
1,927
1,827
1,727
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2327 ft.
MT: 500 ft.
MO: 468 ft.
AM: 497 ft.

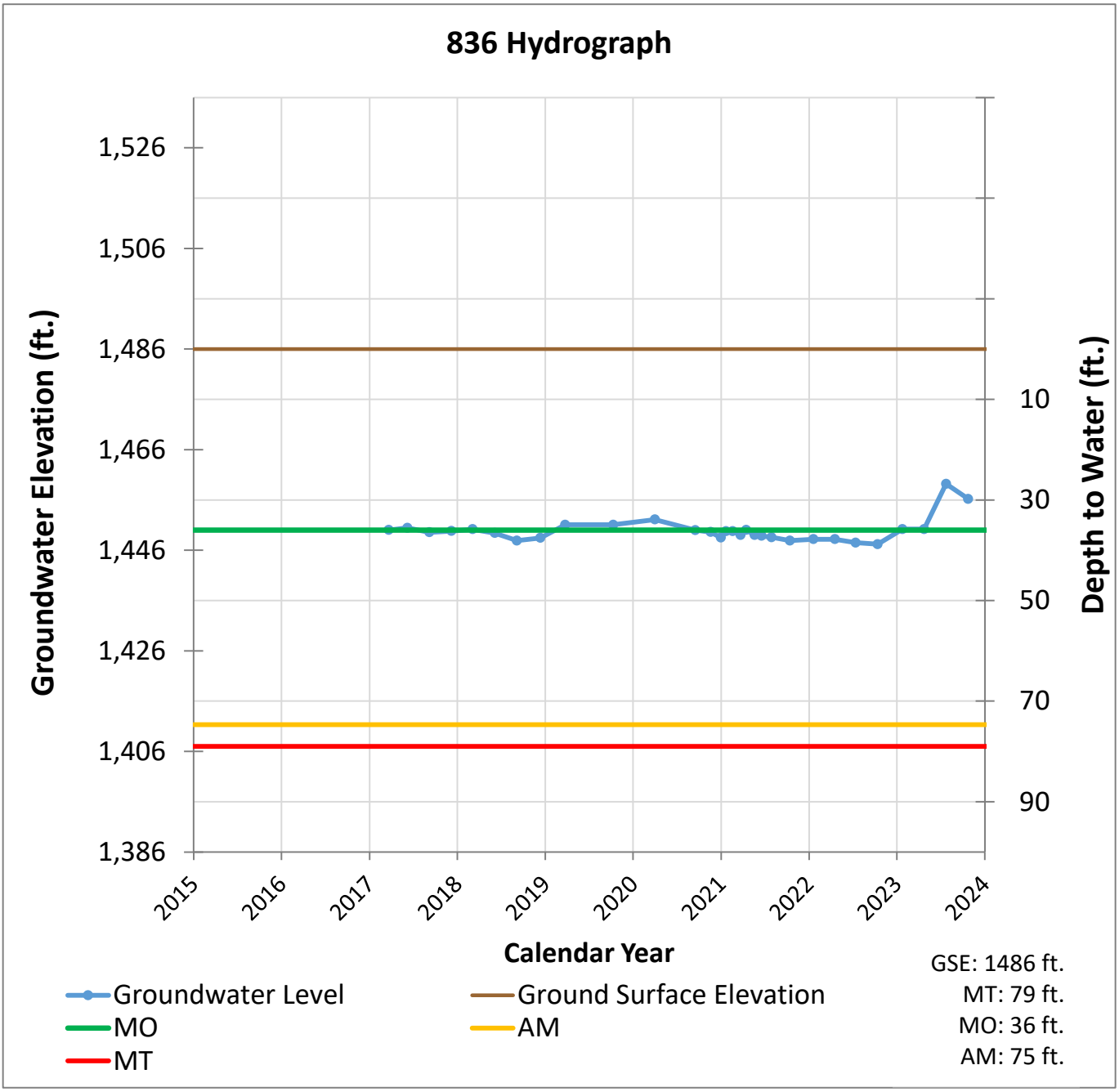

629 Hydrograph
Groundwater Elevation (ft.)
2,379
2,279
2,179
2,079
1,979
1,879
1,779
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2379 ft.
MT: 559 ft.
MO: 527 ft.
AM: 556 ft.

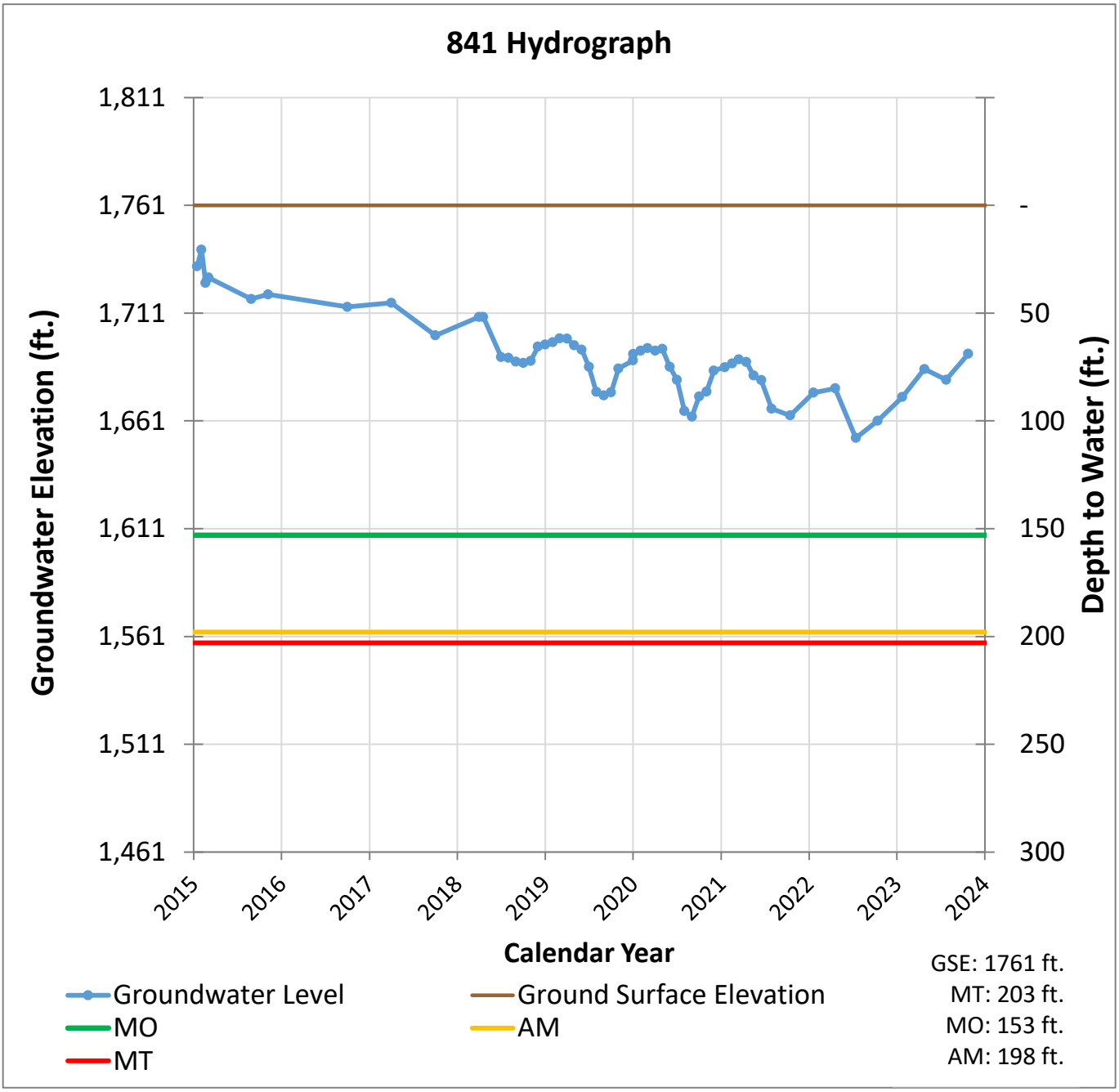

633 Hydrograph
Groundwater Elevation (ft.)
2,364
2,264
2,164
2,064
1,964
1,864
1,764
Depth to Water (ft.)
50
150
250
350
450
550
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2364 ft.
MT: 547 ft.
MO: 493 ft.
AM: 542 ft.

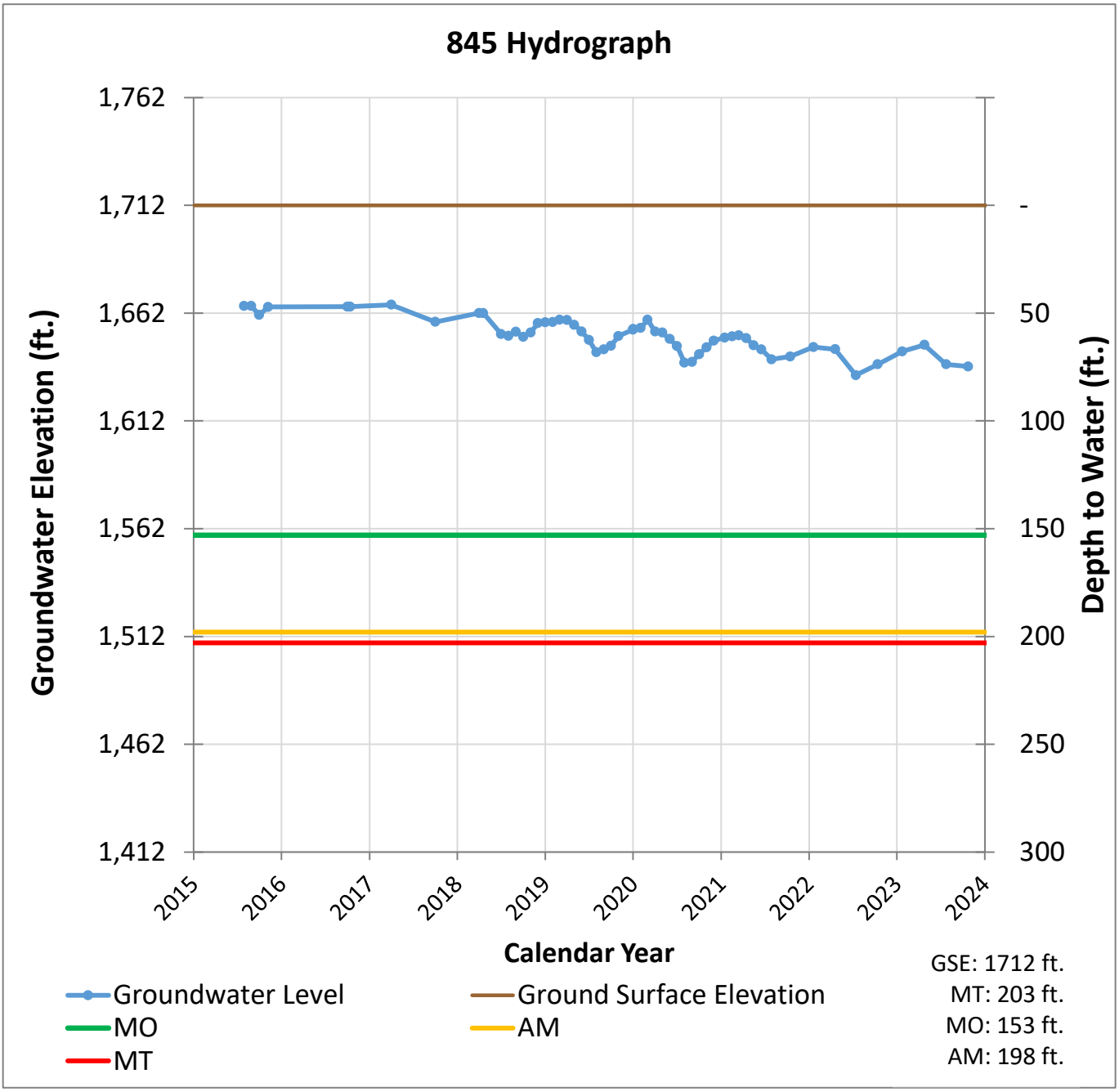

830 Hydrograph
Groundwater Elevation (ft.)
1,611
1,591
1,571
1,551
1,531
1,511
1,491
1,471
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1571 ft.
MT: 59 ft.
MO: 56 ft.
AM: 59 ft.


832 Hydrograph
Groundwater Elevation (ft.)
1,670
1,650
1,630
1,610
1,590
1,570
1,550
1,530
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1630 ft.
MT: 45 ft.
MO: 30 ft.
AM: 44 ft.


833 Hydrograph
Groundwater Elevation (ft.)
1,497
1,477
1,457
1,437
1,417
1,397
1,377
1,357
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1457 ft.
MT: 96 ft.
MO: 24 ft.
AM: 89 ft.


836 Hydrograph
Groundwater Elevation (ft.)
1,526
1,506
1,486
1,466
1,446
1,426
1,406
1,386
Depth to Water (ft.)
10
30
50
70
90
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1486 ft.
MT: 79 ft.
MO: 36 ft.
AM: 75 ft.


841 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
1,811
1,761
1,711
1,661
1,611
1,561
1,511
1,461
-
50
100
150
200
250
300
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1761 ft.
MT: 203 ft.
MO: 153 ft.
AM: 198 ft.


845 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
1,762
1,712
1,662
1,612
1,562
1,512
1,462
1,412
-
50
100
150
200
250
300
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1712 ft.
MT: 203 ft.
MO: 153 ft.
AM: 198 ft.

TO: Standing Advisory Committee
Agenda Item No. 6b

FROM: Taylor Blakslee / Alex Dominguez

DATE: February 29, 2024

SUBJECT: Discuss and Take Appropriate Action on 2023 Central Management Area Allocation Use

Recommended Motion
Approve the 2023 Central Management Area Allocation report.

Discussion
The 2023 Central Management Area Allocation Report is provided as Attachment 1 for consideration of approval.

Cuyama Basin Groundwater Sustainability Agency

6b. Discuss and Take Appropriate Action on 2023 Central Management Area Allocation Use

Taylor Blakslee/Alex Dominguez

February 29, 2024

Background

- On January 11, 2023, the CBGSA approved the CMA administrative policy for managing pumping reductions in the CMA:
  1. Each landowner/operator must submit monthly meter readings for the preceding year by January 31st according to the CBGSA meter reporting instructions
  2. Each landowner must list the APNs the well served and how many acre-feet of water was used on each APN
  3. Staff will develop a water accounting to report at the March Board meeting to confirm annual pumping reduction goals are met for the net water use for landowners/operators
- Staff processed the 2023 water use information, and the 2023 Allocation Report is provided on the following slide
- **Staff is seeking Board approval of the 2023 Allocation Report**

2023 CMA + Farm Unit Allocation Report

Cuyama Basin GSA CMA + Farming Units 2023 Allocation Report

	Reporting Entity	Landowner	Parcel Areas (Acres)	Allocation (AF)	Reported Pumping (AF)
1	**Ann Buck**		**40.00**	**123.55**	**104.40**
2	**CCSH Farms, Doug Slumskie**		**40.00**	**120.21**	**99.40**
3	**Duncan Family Farms, LLC/Aguila G Boys**		**930.88**	**1,365.17**	**119.83**
4	**Grimmway Enterprises, Inc**		**13,474.03**	**18,744.56**	**12,251.87**
		Caliente Ranch Cuyama, LLC	2,115.22	2,222.94	369.83
		Diamond Farming Company	1,995.71	3,402.44	2,983.10
		Lapis Land Company, LLC	2,227.87	5,307.43	2,409.45
		Ruby Land Company, LLC	7,135.23	7,811.75	6,489.49
5	**JHP Global/Joo Capital**		**176.85**	**172.13**	**121.56**
6	**Kern Ridge Growers, LLC**		**510.94**	**905.53**	**436.24**
7	**Sunrise Olive Ranch, LLC**		**934.24**	**2,619.75**	**1,726.11**
		Sunrise Ranch Properties, LLC	927.24	2,591.87	1,726.11
		Carl Reinhard	7.00	27.88	-
8	**Triple H Farming, LLC, Jason, Roy, & Ryan Harrington**		**38.53**	**130.75**	**104.50**
9	**Wm. Bolthouse Farms, Inc.**		**13,495.18**	**23,065.34**	**8,491.00**
		Belden Family Trust ET AL	6,152.12	8,397.19	113.35
		Bolthouse Land Company, LLC	6,482.94	13,267.34	7,809.44
		Lear Real Estate Enterprises, LLC	541.63	849.66	568.21
		Cuyama Solar	318.49	551.15	-
	Subtotal		**29,640.65**	**47,246.98**	**23,454.91**
	Non-Reported Parcels		**1,995.97**	**1,237.02**	-
	Total CMA + Farming Unit		**31,636.62**	**48,484.00**	**23,454.91**

TO: Standing Advisory Committee
Agenda Item No. 6c

FROM: Taylor Blakslee, Hallmark Group

DATE: February 29, 2024

SUBJECT: Discuss and Take Appropriate Action on Land IQ Scope to Identify Unknown Pumpers and Improve the Groundwater Model

Recommended Motion

Approve the grant-funded Land IQ scope in the amount of $17,300.00 to assist in the identification of unknown pumpers and improve the groundwater model.

Discussion

An update on the unknown and un-reported pumpers and associated Land IQ scope of work is provided as Attachment 1 and 2, respectively.

Cuyama Basin Groundwater Sustainability Agency

6c. Discuss and Take Appropriate Action on Land IQ Scope to Identify Unknown Pumpers and Improve the Groundwater Model

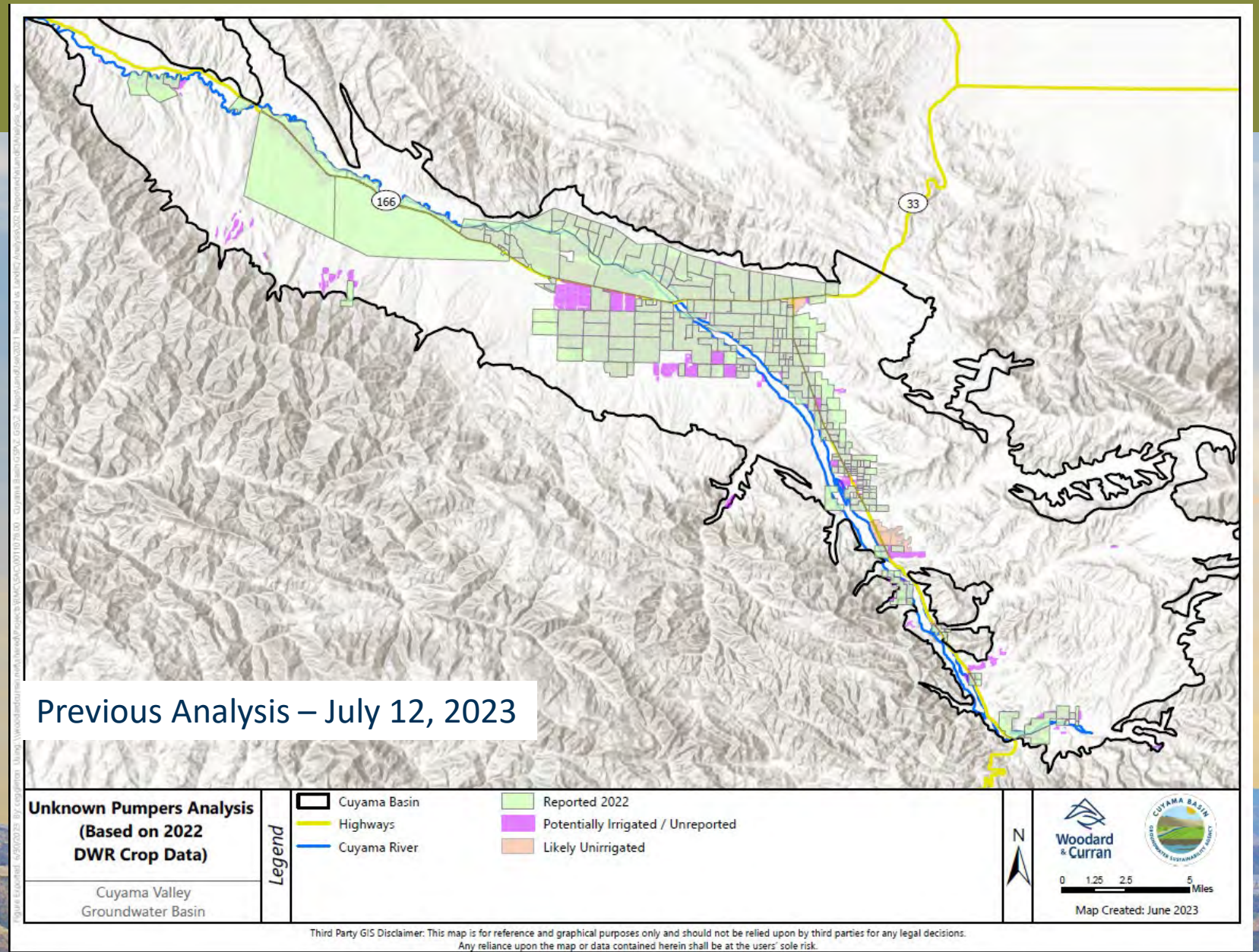
Taylor Blakslee

February 29, 2024

Background

- On March 29, 2023, the GSA Board directed staff to consider enforcement options for potentially non-reporting pumpers in the FY 23-24 budget
- On May 3, 2023, the Board adopted the FY 23-24 budget that included enforcement options for non-reporting pumpers
- Staff has sent 2 rounds of letters to potentially un-reporting landowners, but was largely unsuccessful
- Staff has been using reported pumping and existing cropping data to identify potential un-reporting pumpers, but some of these cropped areas are not currently irrigated when reviewing satellite imagery

Update on Non-Reporting Pumpers



Non-Reporting Pumper Compliance Process

Current Step

- Step 1 - Identify/confirm un-reported pumpers
  - Refine existing analysis with 1) Land IQ 2022 water use data and 2) reported 2022 water use – Completed
  - Land IQ to assist in QA/QC of potential un-reported (“purple”) areas
  - Mail potential out of compliance letters to identified landowners
  - Attempt to contact landowners via phone (if known; work with ad hoc/stakeholders)
  - Perform in-field visits to interface with landowner/drop off letter at gate, etc.
- Step 2 – Enforcement
  - Staff to develop plan for out of compliance landowner to be current
  - Coordinate with ad hoc and communication with landowner
  - Hold hearing with landowner at Board meeting
  - Place outstanding fees owed on tax roll
  - Legal involvement for un-cooperating/un-responsive landowners
- Step 3 – Progress on identifying landowners

Land IQ Proposal

- At staff's request, Land IQ provided a proposal to augment previously developed cropping maps to identify irrigation status on each field for each year where land use was provided between 1996 and 2024 (total of 14 years)
- These maps will allow the GSA to focus its compliance efforts on the likely un-reported pumpers for the fee period 2019-2024
- The maps for all historical years will assist in updating the groundwater model
- The Land IQ scope of work is provided as Attachment 2 for a cost of $17,300 and is within the FY 23-24 budgeted amount for this activity *and covered by the grant*
- **Staff is seeking Board approval for the Land IQ scope of work and authorize staff to contact potentially un-reported pumpers via phone and field visits**

SCOPE OF WORK

CUYAMA SUBBASIN – CROP MAPPING

PREPARED FOR:	Taylor Blakslee/Hallmark Group Brian Van Lienden/Woodard Curran
PREPARED BY:	Joel Kimmelshue/Land IQ Adriana Joosep/Land IQ Casey Gudel/Land IQ
DATE:	February 22, 2024

INTRODUCTION

This scope of work proposal was developed at the request of the Cuyama Subbasin/GSA for the purpose of tracking the irrigated footprint of agricultural areas in the Cuyama Subbasin. These data will assist the GSA in the identification of water users and uses in the basin.

STAFFING RESOURCES & PROJECT COOPERATORS

Staff expected to work on this project from Land IQ have been involved in various aspects of agricultural crop mapping for up to the last 26 years and are listed below. Other appropriately qualified staff may also participate to facilitate completion of any tasks approved by Cuyama Subbasin/GSA as a part of this proposed scope of work.

- Principal In Charge and Principal Agricultural Scientist – Joel Kimmelshue, PhD
- Project Manager/Client Relations – Casey Gudel, MS
- Agricultural and Irrigation Scientist – Adriana Delucchi, BS
- Remote Sensing Analyst – Diya Chowdhury, MS
- Agricultural Scientist – Chris Stall, MS
- GIS Analyst – Justin Sitton, BS
- Support Staff – Various as needed

TASKS

Two tasks are included in this scope of work:

1. **Task 1: 2019 – 2024 Calendar Year Irrigated Footprint Mapping**
2. **Task 2: Previous Mapping Year Irrigated Footprint**

Scope Confidentiality: *It should be noted that this scope of work is considered confidential in nature, and is intended for review and consideration only by the addressees in the "Prepared For" line.*

TASK 1: 2019 - 2024 CALENDAR YEAR IRRIGATED FOOTPRINT MAPPING

Utilizing remote sensing technologies, statistical and temporal analysis methods, image analysis, and agronomic knowledge, Land IQ will provide a spatial database of the irrigated agriculture footprint on a calendar year basis for 2019 through 2024. This mapping effort represents a refinement of previous deliverables in which crop type mapping was performed on a field basis, but did not indicate an irrigation status on fields, except for "Mixed Pasture" classifications.

Data specifically developed, enhanced, or used by Land IQ for the mapping project will include:

- Integration of agronomic/crop production knowledge
- Detailed ground truth information
- Analysis of multiple image resources for the entirety of the Cuyama Basin for the years of interest

The established remotely sensed crop mapping methodology utilized for this project will involve analysis of multiple image sources that encompass a range of spectral characteristics, spatial resolutions, and temporal representation of the crops of interest. These methods will be derived from and guided by our understanding of agricultural systems, landscape processes, production systems, and crop phenology. The result will be a spatial file with boundaries representing irrigated area for any given calendar year. These boundaries will be identical to those delivered for crop type mapping efforts but may include additional field boundaries indicating irrigation as appropriate.

TASK 2: PREVIOUS MAPPING YEAR IRRIGATED FOOTPRINT MAPPING

Utilizing remote sensing technologies, statistical and temporal analysis methods, image analysis, and agronomic knowledge, Land IQ will provide a spatial database of the irrigated agriculture footprint on a calendar year basis for the previous mapping years including 1996, 2000, 2003, 2006, 2009, 2012, 2014, 2016, and 2018.

Data specifically developed, enhanced, or used by Land IQ for the mapping project will include:

- Integration of agronomic/crop production knowledge
- Analysis of available image resources for the entirety of the Cuyama Basin for the years of interest

The methodology for 2018 irrigation status will be identical to that used in Task 1 because of work previously preformed on start and end dates for 2018 through 2023. However, the years 1996 through 2016 do not have start and end dates associated with them due to a change in crop mapping methodology as a result of the reduced temporal resolution of satellite imagery resources. Thus, irrigation status determination for these years will require more of a manual approach with a greater degree of uncertainty.

ASSUMPTIONS

- The irrigated mapping footprint is limited to agricultural land use and does not include urban land use such as schools and recreation. This effort is also limited to crop irrigation and does not include mapping of stockwater use, storage reservoirs, de minimis domestic use, or dust control (e.g., corrals and dairy barns).
- This mapping does not determine the water source used for irrigation. Local knowledge regarding water sources may be included in the dataset as provided by the GSA, such as spring water use when the data are available.

DELIVERABLES

Deliverables for this task include a footprint of irrigated area for each calendar year in GIS format.

SCHEDULE

- Calendar years 2019 through 2023 can be completed in 2 months, following a notice to proceed.
- Calendar year 2024 will be delivered in tandem with the 2024 Calendar year crop mapping.
- Calendar years 1996, 2000, 2003, 2006, 2009, 2012, 2014, 2016, and 2018 can be completed in 4 months, following notice to proceed.

COST

The cost of Task 1 is $1,100 per year, covering 6 years in total. For Task 2, the calendar year 2018 will be $1,100 and the remaining 8 years from 1996 to 2016 will be $1,200 each to account for the increased manual effort associated with those timeframes.

The following cost table is provided for the two tasks included in this scope of work.

Task	Description	Cost
1	2019-2024 Calendar Year Irrigated Footprint Mapping	$6,600
2	Previous Mapping Year Irrigated Footprint Mapping	$10,700

All payments shall be made within 30 days of receipt of invoices from Land IQ.

ANNUAL LICENSING

All deliverables will be licensed for use by the Cuyama Subbasin GSA only. A license agreement will be executed by both parties (and its consultants) at notice to proceed.

TO: Standing Advisory Committee
Agenda Item No. 7a

FROM: Taylor Blakslee / Brian Van Lienden

DATE: February 29, 2024

SUBJECT: Update on GSP Components Schedule

Recommended Motion
None – information only.

Discussion
On July 12, 2023, the Cuyama Basin Groundwater Sustainability Agency Board of Directors reviewed and approved a schedule for updating the Groundwater Sustainability Plan (GSP) ahead of the January 2025 deadline and that schedule is provided as Attachment 1 for reference.

Cuyama Basin Groundwater Sustainability Agency

7a. Update on GSP Component Schedule

Taylor Blakslee/Brian Van Lienden

February 29, 2024

GSP Update and Board Policy Discussions Schedule

	1	2	3	4	5	6	7	8	9	10
	2023					2024				2025
	July	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan
Board Direction:	**Finalize:** Feedback on engagement strategy	Basin-wide pumping restrictions/Central Management Area (CMA) boundary **Finalize:** Groundwater (GW) **levels & storage** monitoring networks GW levels & storage sustainable management criteria (SMC) and undesirable results (UR) criteria options Allocation methodology	**Finalize: Subsidence, Interconnected surface water (ISW), and water quality (WQ)** monitoring networks GW subsidence ISW, and WQ SMC and UR options Glidepath methodology	**Finalize:** GW levels, storage, subsidence, ISW, WQ SMC and UR	Project and Management Action (PMA) options Sustainable yield (SY) methodology Issue 90-Day Notice	**Finalize:** • Basin-wide Pumping Restrictions/MA Boundary (updated model) • Allocation methodology • Glidepath methodology • PMA options • SY approach		Review Public draft	**Public Hearing to adopt Amended GSP	
GSP Chapter Review:				**Ch 1.** Agency Info/Plan Area **Ch 4.** Monitoring Network		**Ch 2.** Basin Setting **Ch 3.** URs **Ch 5.** SMCs	**Ch 6.** DMS **Ch 7.** PMAs	**Ch 8.** Plan Implementation Executive Summary		
Public Workshop		✓			✓			✓		

TO: Standing Advisory Committee
Agenda Item No. 7b

FROM: Brian Van Lienden / Taylor Blakslee

DATE: February 29, 2024

SUBJECT: Discuss and Take Appropriate Action on Project and Management Action Options

Recommended Motion
Standing Advisory Committee feedback requested.

Discussion
Groundwater Sustainability Plan Project and Management options are provided as Attachment 1. The California Department of Water Resources guidance document entitled: *Considerations for Identifying and Addressing Drinking Water Well Impacts* is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

7b. Discuss and Take Appropriate Action on Project and Management Action Options

Brian Van Lienden / Taylor Blakslee

February 29, 2024

Projects and Management Action Options

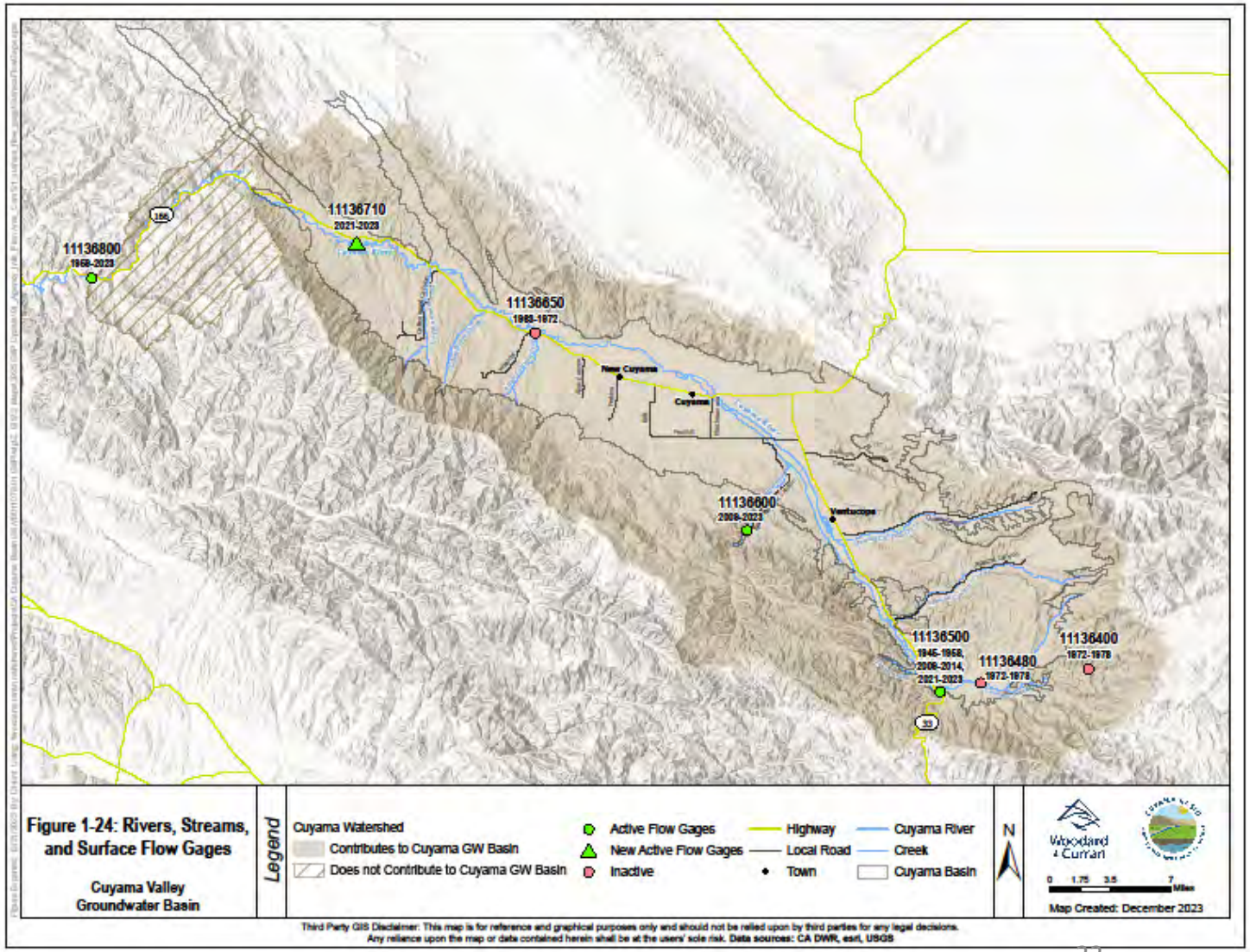
- Projects and Management Actions Included in the GSP
  - Flood and Stormwater Capture
  - Water Supply Transfers/Exchanges
  - Precipitation Enhancement
  - Improve Reliability of Water Supplies for Local Communities
  - Basin-Wide Economic Analysis - completed
  - Pumping Allocations in Central Management Area (covered separately)
  - Adaptive Management
- New Project for Consideration
  - Calibration Program for Flow Meters (Tech Forum suggestion from Jeff Shaw)
  - Others?
- The Board will need to decide which projects to include in the 2025 GSP Update at the July 2024 Board meeting
- **Staff is presenting this information for feedback and to refine final options for Board consideration at the July 2024 Board meeting**

Flood and Stormwater Capture

- **Flood and stormwater capture** was described in **GSP Section 7.4.1**: *Flood and stormwater capture would include infiltration of stormwater and flood waters to the groundwater basin using spreading facilities (recharge ponds or recharge basins) or injection wells.*
- Technical Analysis performed for the GSP:
  - Assumed that there would be sufficient flows for recharge in 3/10 years, with an average of 14,700 AF/year available
  - Estimated benefits: ~4,000 AF/year on average
- A water rights analysis is currently underway to estimate how much water is actually available for recharge

Review of Historical Twitchell Reservoir and USGS Stream Gage Data

- Available data
  - Twitchell Reservoir elevation data available (1962-2022)
  - USGS streamflow gauge data
- An analysis was performed to estimated flow into Twitchell during historical flood release periods



Summary

- Historically, releases have occurred in Twitchell Reservoir in approximately 11% of all years (7/62 years including 2005 and 2023)
- Annual flows into Twitchell Reservoir during historical managed release periods ranged from 6,000 to 92,000 AF, with an average ~42,000 AF
- Based on 2023 data, between 23% and 42% of flows into Twitchell Reservoir are present in the Cuyama Basin during high flow periods
  - This implies that ~10,000-18,000 AF may be available in approximately 1/10 years

Water Supply Transfers/Exchanges

- **Water supply transfers/exchanges** were described in **GSP Section 7.4.3**: *This project would evaluate the feasibility of purchasing transferred water and exchanging it with downstream users (downstream of Lake Twitchell) to allow for additional stormwater and floodwater capture in the Basin to protect water rights of downstream users. Because this action is intended only as a complement to a potential stormwater or floodwater capture project, all potential purchase transfer water would originate outside of the Cuyama River watershed, and* ***this action would not include the transfer or sale of existing Cuyama Basin groundwater out of the watershed****.*
- This project would only be explored if flood and stormwater capture was feasible but greater volumes of recharge were desired

Precipitation Enhancement

- **Precipitation enhancement** was described in **GSP Section 7.4.2**: *A precipitation enhancement project would involve implementation of a cloud seeding program to increase precipitation in the Basin. This project would target cloud seeding in the upper Basin, southeast of Ventucopa, and would include introduction of silver iodide into clouds to increase nucleation (the process by which water in clouds freeze to then precipitate out).*
- Technical analysis performed for the GSP:
  - Assumed cloud seeding would increase precipitation by 10% from November through March each year
  - Estimated benefits: ~1,500 AF/year on average
- An updated cloud seeding study by Desert Research Institute is currently underway, with results expected in July 2024

Improve Reliability of Water Supplies for Local Communities

- **The Improve Reliability of Water Supplies for Local Communities project** was described in **GSP Section 7.4.4**: *This management action would include consideration of opportunities to improve water supply reliability for Ventucopa and within the CCSD service area. Potential projects that would be considered under this management action include a replacement well for CCSD Well 2, which is currently abandoned, and improvements to Ventucopa Water Supply Company's (VWSC's) existing well*
- The GSP also supported a potential project for the town of Cuyama (GSP pg 7-19)
- Since submittal of the GSP, CCSD has received grant funding to install a new well
- **Staff is seeking preliminary feedback on if and how this project should be included in the revised GSP**

Adaptive Management in the Cuyama GSP

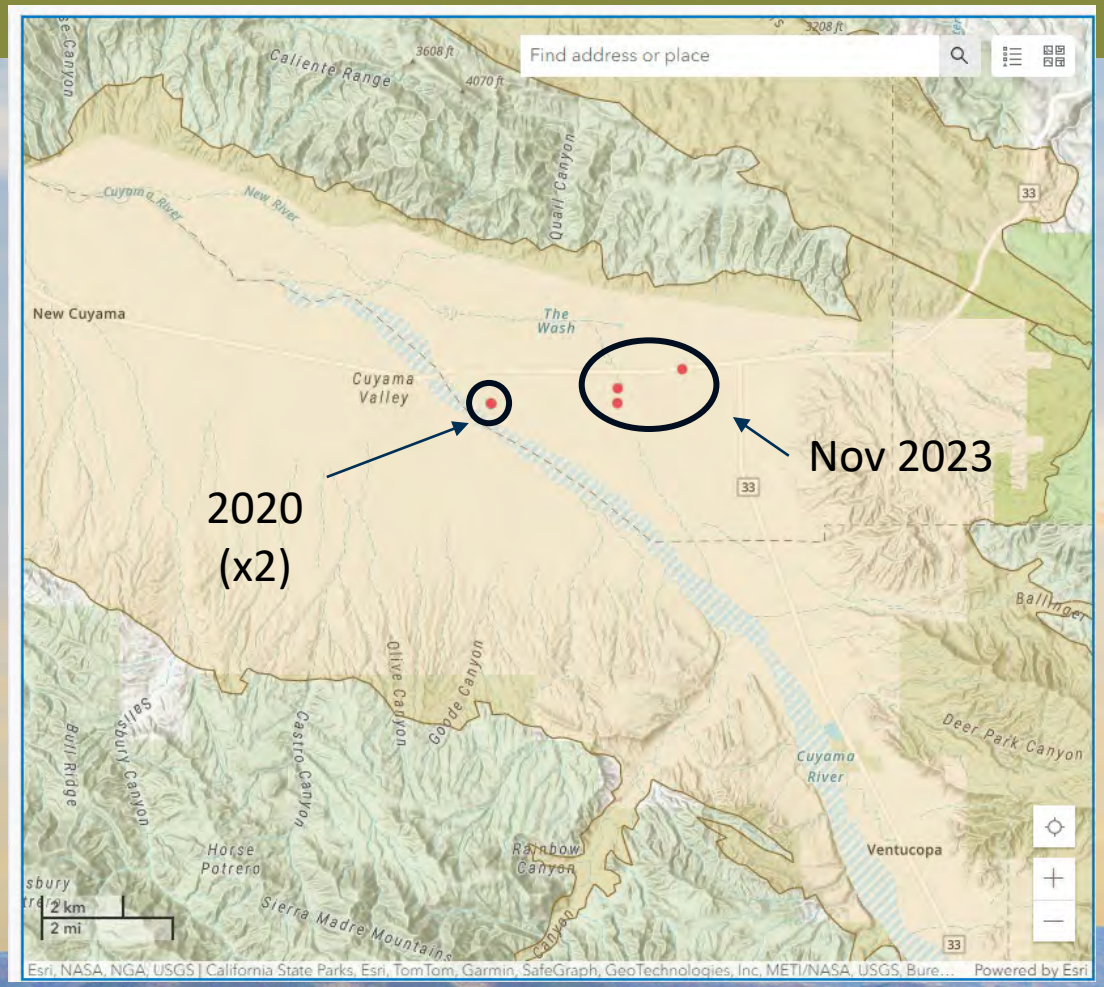
- What does the GSP say?
  - Section 7.6 of the Adopted GSP: "Adaptive management triggers are threshold that, if reached, initiate the process for considering implementation of adaptive management actions or projects."
  - Adaptive Management Triggers
    - **Pumping reductions are more than 5 percent off the glide path identified in the pumping allocation plan:** CBGSA would evaluate why pumping allocation are not being met and implement additional outreach or enforcement, as appropriate.
    - **If the Basin is whin the Margin of Operational Flexibility, but trending toward Undesirable Results, *and* within 10 percent of the Minimum Threshold:** CBGSA will investigate the cause and determine appropriate actions

DWR Guidance

- Cuyama Basin Determination Letter Recommended Corrective Action No. 1a: "*Department staff recommend that the GSA review the Department's April 2023 guidance document titled Considerations for Identifying and Addressing Drinking Water Well Impacts guidance to assist its adaptive management efforts*"
- DWR developed the Drinking Water Well Impacts Guidance document (provided in packet)
- From Section 2.6 – *Develop and Implement Projects and Management Actions:*
  - Question: Are there projects and management actions proposed and being implemented that will avoid or minimize impacts to drinking water well users?
  - Potential projects could consider short- and long-term needs

Reported Dry Wells in Cuyama (DWR)

Year	Number of wells reported dry
2017	0
2018	0
2019	0
2020	2
2021	0
2022	0
2023	3 *(all reported in Nov)*



https://storymaps.arcgis.com/stories/f2b252d15a0d4e49887ba94ac17cc4bb

Example: Eastern San Joaquin

6.4 ADAPTIVE MANAGEMENT STRATEGIES

Although the ESJGWA does not provide direct authority to require GSAs to implement projects, the GWA will be working on GSA-level water budgets and will be requesting annual or biannual reports to evaluate progress. If the projects do not progress, or if monitoring efforts demonstrate that the projects are not effective in achieving stated recharge and/or offset targets, the GWA will convene a working group to evaluate supply-side and demand-side management actions such as the implementation of groundwater pumping curtailments, land fallowing, etc.

Based on comments from DWR in their November 18, 2021 Consultation Initiation Letter (Letter) requesting additional detail on management actions that could be implemented, the ESJGWA has developed descriptions of adaptive management measures to be considered for implementation if projects are demonstrated to not be effective in achieving Subbasin sustainability targets. After implementation of the Category A projects (as described in Chapter 2 of this revised GSP and below), the adaptive management actions identified below could be implemented if additional measures are required to sustainably manage groundwater in the Subbasin. These adaptive management actions are programs that are not currently ready for implementation, are in the early planning stages, and do not have firm schedules for development but rather would be implemented as needed sometime after 2026 following reevaluation of Subbasin sustainability during the 5-Year GSP Update in 2025. The following describes these potential programs as they are currently contemplated; none of these programs are planned for implementation in the Subbasin at this time.

- **Groundwater Extraction Fee with Land Use** Modifications – A groundwater extraction fee or groundwater production charge could be collected from entities that own or operate an agricultural well. Revenue from these fees could then be used to pay for a variety of activities such as the construction of water infrastructure, groundwater conservation initiatives, proper construction and destruction of wells to prevent contamination, groundwater recharge and recovery projects, purchase of imported water or other supplies to replenish the groundwater basin through direct or in-lieu recharge, and/or purchasing and permanent fallowing of marginally-productive agricultural lands dependent on groundwater. Several agencies in California have already implemented such a program and have seen success in utilizing revenue to benefit the local groundwater basin. A similar methodology could be applied within the Eastern San Joaquin Subbasin.

- **Rotational Fallowing or Permanent Fallowing of Crop Lands** – Agricultural water use can be temporarily reduced by fallowing crop lands. While this can have economic impacts to a region, the benefits may also include improved water supply reliability, improved groundwater quality, increased groundwater levels, reduced subsidence, and operational flexibility. Rotational fallowing of crop lands reduces the economic impacts to any one area by rotating the areas of fallowing. This management action could be combined with a recharge project through the application of surplus water supplies to the fallowed lands resulting in in-lieu

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

groundwater recharge or the repurposing of the permanently fallowed lands to create wildlife habitat or some other land use benefit that is not reliant on groundwater as a supply. This management action could be implemented, if needed, to help the Subbasin work towards its sustainability goals. However, the rules by which this management action would be implemented would have to be developed by the GSAs within the Subbasin.

- **Conservation Programming for Demand Reduction** – A demand reduction measure serves to reduce water demand, surface water losses, and/or nonessential water uses. Demand reduction measures may include a conservation rate structure or a uniform rate structure with a conservation program that achieves demand reduction. Conservation and demand management programs have been a priority for utility providers across the state for decades. Water conservation programs can by implemented by utilities to help offset the increasing demands being placed on water resources. Actions that may be considered a demand reduction measure include, but are not limited to, the following activities:
  - Conservation rates
  - Water efficient landscaping
  - Smart meters
  - Water efficient fixtures and appliances
  - Water conservation education effort

  Many of the GSAs in the Subbasin are currently implementing conservation programming for demand reduction. Under this management action, additional resources would be directed toward conservation programming for demand reduction such that these programs can be enhanced or expanded.

- **Mandatory Demand Reduction** – To reduce groundwater demand to allow and encourage the recovery of the groundwater aquifer, mandatory demand reduction may be considered by the ESJGWA as needed to meet the sustainability needs of the Subbasin if projects and management actions fall short of reduction and offset targets. Mandatory measures could include establishment of a per-acre groundwater allocation, metering, extraction reporting, land retirement, and other measures to ensure land is not in production. The proposed projects and management actions (PMAs) demonstrate that these mandatory demand reduction programs are not likely to be needed in the Eastern San Joaquin Subbasin and are a low priority. Several GSAs in critically overdrafted subbasins are implementing mandatory demand reductions as part of their sustainability efforts under SGMA.

Additionally, the GWA will conduct regular 'calls for projects' to identify additional potential projects and management actions that may be implemented to support Subbasin sustainability, and will, as part of this process, update information regarding projects already identified herein.

Example: Solano

8.2.3 Other Water Management

Recognizing the GSP data gaps and uncertainties in the basin setting (per 23 CCR §354.44(d)), other groundwater management strategies may be considered and implemented through an adaptive approach informed by continued monitoring of groundwater conditions. These groundwater management strategies include:

- **Use of Recycled Water:** The GSAs may explore opportunities for using recycled water of suitable quality (e.g., treated wastewater) for direct groundwater recharge and for urban and/or agricultural irrigation to decrease groundwater demand. This can be considered in lieu recharge. The GSAs may also consider providing incentives for using recycled water.
- **Conjunctive Management:** The GSAs may promote and incentivize growers to apply on-farm practices that maximize the use of surface water when it is available, providing in-lieu and direct groundwater recharge to support groundwater pumping in years when surface water is unavailable.
- **Inventory of Active Pumping Wells**: The GSAs may consider conducting additional efforts to improve information relating to the locations and characteristics of active pumping wells in the Subbasin to further the understanding of the beneficial uses and users of groundwater in the Subbasin.
- **Changes to Well Regulations**: The counties may consider creating additional guidelines during the well permitting process to reduce competition between nearby wells (i.e., suggestions regarding well pumping capacity, total well depth, depth of well perforations, and location of a new well in relation to existing wells). These efforts should at minimum be designed to protect domestic drinking water wells, and other domestic wells as needed.
- **Other Actions in Cooperation with Cities and Other Stakeholders**: The GSAs may consider implementing any other actions that reduce groundwater demand and/or increase groundwater recharge.

Tech Forum Feedback –2-15-24

Topic	Adaptive management
Comment	Consider basin water level responses and response times prior to implementation adaptive management actions (modeling effort)
Comment by	Jeff Shaw, EKI
Notes	NA

Feedback Requested on Adaptive Management in the Revised GSP

- Should the GSA provide more detail about the adaptive management process in the GSP?
- If yes, staff will develop options for Board consideration

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MARCH 2023

Guidance for Sustainable Groundwater Management Act Implementation:

Considerations for Identifying and Addressing Drinking Water Well Impacts

DEPARTMENT OF WATER RESOURCES
STATE OF CALIFORNIA

Guidance for Sustainable Groundwater Management Act Implementation:

Considerations for Identifying and Addressing Drinking Water Well Impacts

MARCH 2023

Use of this document

The objective of this document is to provide guidance and technical assistance[1] to groundwater sustainability agencies (GSAs) for identifying and addressing drinking water well impacts while implementing and updating their groundwater sustainability plans (GSPs or Plans) under the Sustainable Groundwater Management Act (SGMA). The technical assistance provided in this document may be used by GSAs to guide their consideration of drinking water well users during SGMA implementation and when updating, assessing, or amending their GSPs. This document does not prescribe specific methods that GSAs must use, but it provides technical information and guidance on strategies to consider that may be protective of drinking water well users as GSAs move forward with SGMA implementation. GSAs are encouraged to consider this guidance and its applicability to their basins; however, conformance with specific approaches in this document will not automatically guarantee approval of a GSP by the Department of Water Resources (DWR or Department). Conversely, while the Department believes the approaches presented here likely have broad and general value when implementing SGMA in basins, a GSA need not conform or limit its approach to those contained in this document in order to gain Plan approval. Depending on circumstances in basins, other approaches may also be appropriate. To further assist GSAs, this document also provides links to an online toolkit containing current technical resources and examples of financial assistance to guide GSAs in addressing drinking water well impacts.

CALIFORNIA DEPARTMENT OF
WATER RESOURCES

715 P Street
Sacramento, CA 95814
water.ca.gov

1 CWC § 10729 et seq.

CONTENTS

1. BACKGROUND

Enacted into law in 2014, the Sustainable Groundwater Management Act (SGMA) is the primary means to implement the state policy that "…groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses."[2] Under SGMA, groundwater sustainability agencies (GSAs) must consider all beneficial uses and users in a groundwater basin when developing and implementing their locally-developed groundwater sustainability plans (GSPs or Plans). Drinking water well users, which can include municipal entities, small communities, and individual domestic wells[3], have been identified and are considered beneficial users in all medium and high priority basins and can experience adverse effects such as dry wells, deteriorated water quality, and well damage from land subsidence when excessive groundwater extraction occurs.[4] Each groundwater basin is unique in climate, geology, and land use and therefore the magnitude and scope of potential effects from groundwater extractions and the approach to groundwater management are also unique.

Longstanding state law and policy, codified since at least 1943, states that the use of water for domestic purposes is the highest use of water.[5] In 2013, the state enacted a related policy that "… every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes."[6] SGMA was passed, in part, to protect communities (i.e., domestic users (de minimis), drinking water systems) from adverse effects of unmanaged groundwater extractions on their drinking water wells and supplies.[7] When administering and implementing SGMA, the Department of Water Resources (DWR or Department) considers these policies[8], which emphasize the importance of drinking water beneficial uses and users.

SGMA authorizes and encourages the Department to provide technical assistance to GSAs and entities that extract or use groundwater.[9] DWR is providing this guidance and technical assistance based on its review of GSPs, primarily for the critically overdrafted basins in 2020 and the various approaches that GSAs have employed to address impacts to drinking water well users. The goal of this document is to support and assist GSAs as they implement and prepare for periodic updates of their GSPs to fully consider how to appropriately address impacts to drinking water well users as part of SGMA implementation. The objectives of this document are:

1. Clarify how interests of drinking water well users are identified and may be addressed consistent with SGMA and the GSP Regulations.
2. Identify tools and resources that can be used by GSAs to enhance implementation of their GSPs and updates to their GSPs related to drinking water well users.
3. Identify and facilitate opportunities for coordination on drinking water well issues among local agencies and county departments with water management responsibilities in a basin and identify state programs to support and facilitate GSAs and local agencies in their coordination efforts.

2 CWC § 113.
3 Drinking water users may broadly refer, as applicable, to the well (property) owners, renters, residents, or tribes that rely on groundwater for household purposes.
4 Stats. 2014, c. 347 (AB 1739) § 1 (a)(3).
5 CWC § 106.
6 CWC § 106.3.
7 AB1739 § 1 (a)(4).
8 23 CCR § 350.4 (g).
9 CWC § 10729 et seq.

1.1 Online Toolkit Accompanying This Document

Since SGMA was enacted, the Department has developed a wide range of technical and planning assistance resources to support GSAs in improving their understanding of their groundwater basin, engaging with interested parties, and identifying financial resources or funding opportunities for implementation of their GSPs. In addition, other state agencies, such as the State Water Resources Control Board (State Water Board), have developed tools that could be useful to GSAs in addressing impacts to drinking water well users. Relevant tools and resources from DWR and other state agencies have been centralized and posted via online "toolkits" which are organized with the same headings and topics as used in this guidance document. The Department will periodically update the toolkits as new resources, information, and funding become available. Links to the relevant toolkits can be found throughout the document wherever the following toolkit icon is found:

Considerations for Identifying and Addressing Drinking Water Well Impacts Toolkits

2. DRINKING WATER UNDER SGMA

One of the founding principles of SGMA is that groundwater resources are most effectively managed at the local or regional level.[10] GSPs are planning documents describing long-term management approaches crafted with both technical and policy considerations. SGMA's preference and design for "local control" gives GSAs the primary authority to debate and establish local policies as they develop and implement their GSPs.

GSP Regulations require GSAs to develop a sustainability goal for their basin that culminates in the absence of undesirable results within 20 years of Plan adoption and implementation.[11] Undesirable results are present when significant and unreasonable effects occur for any of the six sustainability indicators.[12] In defining the undesirable results for the basin, beneficial uses and users of groundwater must be considered, which includes drinking water well users. GSAs are to describe the potential effects based on the technical information presented in the basin setting.[13] Undesirable results are quantified and monitored by using measurements in their established monitoring networks. GSPs must set a minimum threshold value at each representative monitoring site (RMS) which is a "numeric value…that, if exceeded, may [emphasis added] cause undesirable results."[14] An undesirable result is triggered when "…the combination of minimum threshold exceedances … cause significant and unreasonable effects in the basin."[15] Furthermore, the GSP Regulations require the GSP to describe "[h]ow minimum thresholds *may* affect the interests of beneficial uses and users of groundwater or land uses and property interests."[16] Finally, the GSP must define a measurable objective, which is a quantitative goal that reflects the GSA's desired groundwater conditions for the basin. [17] The GSP must present a set of projects and management actions that will assist in achieving the basin's sustainability

10 AB1739 § 1 (a)(8).
11 23 CCR § 354.24.
12 Sustainability indicators under SGMA consist of chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water.
13 23 CCR § 354.26.
14 23 CCR § 354.28 (a).
15 23 CCR § 354.26 (b)(2).
16 23 CCR § 354.28 (b)(4).
17 23 CCR § 351(s).

goal[18] within 20 years of the implementation of the initial Plan submission, as well as maintained through the 50-year planning and implementation horizon. [19]

Based on the above requirements, GSAs are to use the best available science, establish local management policy based on that science, consider impacts to all beneficial uses and users (including drinking water well users), and "…achieve sustainable groundwater management."[20] DWR, when evaluating GSPs for substantial compliance with the GSP Regulations, is required to determine whether Plans identify a reasonable pathway toward achieving sustainability in the required timeframe and whether the interests of beneficial uses and users, including drinking water well users, have been considered.[21]

GSAs have submitted their initial Plans, but they are required to provide annual reports and periodically update their GSPs at least every five years to document and assess progress toward achieving their sustainability goal.[22] The requirements to submit these reports and regular updates acknowledge that groundwater planning and sustainable groundwater management are likely best achieved through an adaptive, iterative process and that GSPs will need to be adjusted as conditions change, new data become available, and the efficacy of projects and management actions are better understood. The figure on the next page shows a conceptual progression of adaptive management under SGMA, a cycle which GSAs may follow multiple times during the planning and implementation horizon. The following subsections describe each component of this adaptive management framework and how GSAs can consider the interests of drinking water well users at each step through implementation of their GSPs and describe the relevant GSP Regulations. Additionally, DWR's GSP determinations provide examples of how DWR evaluates the adequacy and substantial compliance with the GSP Regulations of GSPs based on locally established policies, procedures, variable basin conditions, and available data throughout the state.

2.1 Identify Drinking Water Well Users

Has drinking water been identified as a beneficial use in the basin and is there a thorough understanding of the location and construction details of drinking water supply wells?

The GSP Regulations require GSAs to identify the interests of all beneficial uses and users of water, which includes all drinking water well users, and specifically to map the density of wells per square mile as well as the location and extent of communities dependent on groundwater.[23] Understanding the locations of drinking water wells in a basin is foundational to considering these uses and users. Furthermore, in addition to well location, well depth and construction details, persons or populations served, and other information is likely necessary to effectively evaluate and monitor how changing groundwater elevations or water quality conditions in the principal aquifers may impact these uses and users within specific basins.

CWC § 10723.2

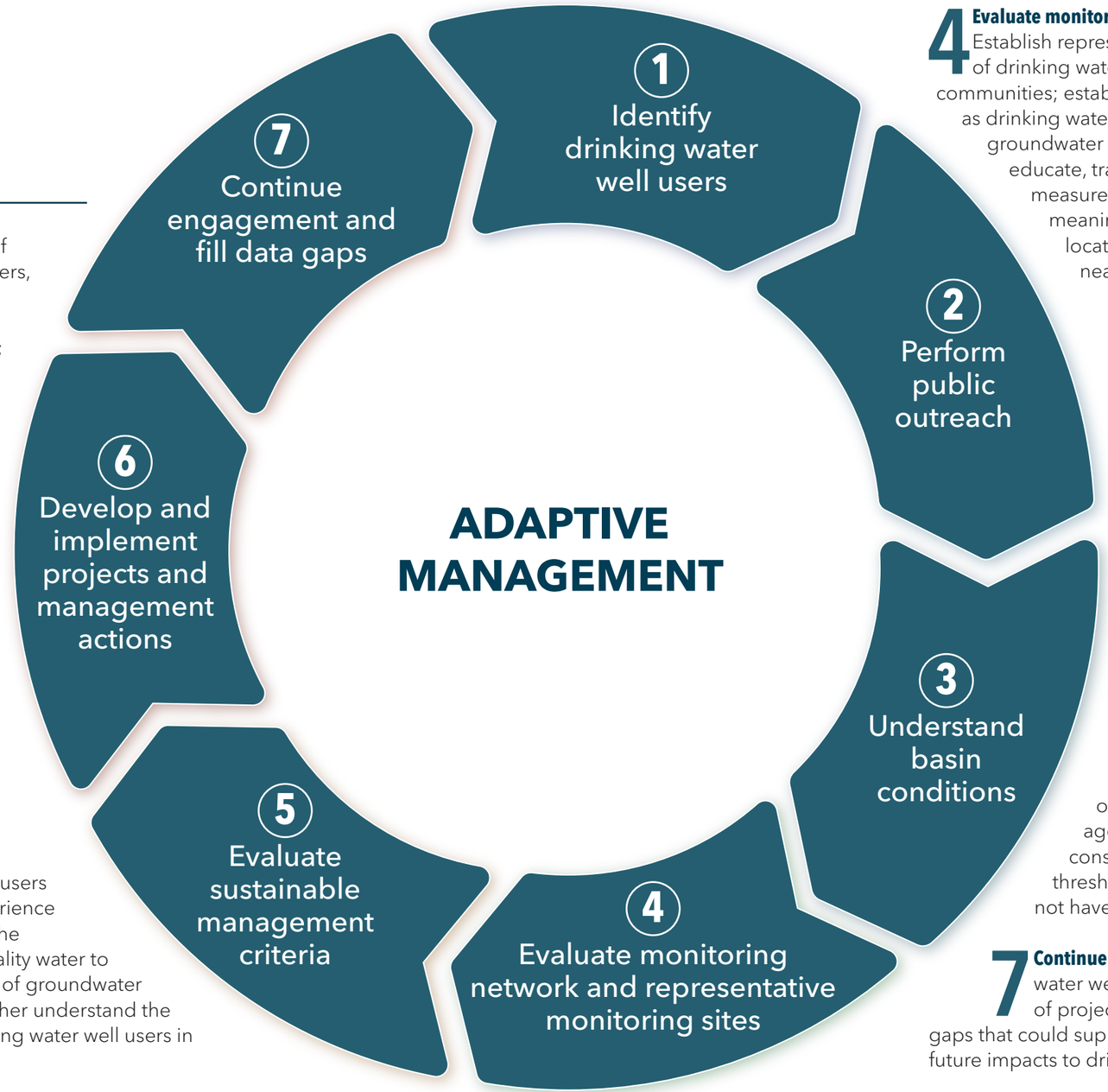
"The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater…"

23 CCR § 354.10

"Each Plan shall include a summary of information relating to notification and communication by the [groundwater sustainability] Agency with other agencies and interested parties, including…" (a) "A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties."

18 23 CCR §§ 354.42 and 354.44.
19 23 CCR § 354.24.
20 23 CCR § 350.4(e).
21 23 CCR § 355.4 (b)(4).
22 23 CCR § 356.4.
23 23 CCR § 354.8 (a)(5).

Considering Drinking Water Users Throughout SGMA Implementation



1 Identify drinking water well users: Identify all types of drinking water well users, including de minimis users, domestic wells, state small water systems, small water systems, public and community water systems, and Tribes that rely on groundwater for drinking water; do not exclude known drinking water well users; establish a thorough understanding of the location and construction details of all drinking water wells.

2 Perform public outreach: Direct outreach to drinking water well users with a meaningful approach for how to engage and involve community members and organizations in decision-making; meet the community in suitable locations and at times when community members are available; communicate in the preferred language of drinking water well users; provide materials so community members can engage and understand technical information for a non-technical audience.

3 Understand basin conditions: Conduct well susceptibility or vulnerability analyses for all drinking water well users; do not exclude subsets of drinking water well users in assessing groundwater conditions; analyze the number of drinking water well users and/or percentage of users in the basin that may experience impacts if future water level conditions were to reach the minimum threshold; analyze the potential for poor quality water to affect drinking water well users in the future as a result of groundwater pumping in association with Plan implementation; further understand the basin conditions of the shallow aquifers used by drinking water well users in relation to the entirety of the basin.

4 Evaluate monitoring network and representative monitoring sites: Establish representative monitoring sites near high densities of drinking water well users, DACs, SDACs, or other rural communities; establish representative wells with similar depths as drinking water wells to be able to monitor and measure groundwater levels and conditions for drinking water well users; educate, train, and empower drinking water well owners to measure water levels, report to GSA, and understand the meaning of groundwater levels and conditions at their well locations, including what the minimum threshold is at or near their well's location.

5 Evaluate sustainable management criteria: Establish and revise sustainable management criteria based on analysis of understanding of basin conditions and considering potential impacts to drinking water well users; if minimum thresholds are set below 2015 groundwater levels, consider projects and management actions to address impacts or carefully justify how unaddressed impacts are consistent with the basin's sustainability goal.

6 Develop and implement projects and management actions: Support drinking water well users to have a long-term, reliable water supply with projects and management actions that address impacts; avoid projects and management actions that exclude certain drinking water well users and ensure that the benefits of projects and management actions are not arbitrary or inequitable; coordinate with local well permitting agencies to ensure new drinking water wells are constructed to provide reliable supply under minimum threshold conditions and that new, large supply wells will not have impacts on nearby drinking water wells.

7 Continue engagement and fill data gaps: Engage drinking water well users during Plan updates and implementation of projects and management actions; continue filling data gaps that could support and improve the understanding of current and future impacts to drinking water well users.

- **Enhance and maintain a thorough drinking water well inventory.** Many previously submitted GSPs relied on readily accessible, statewide tools to understand and identify drinking water wells in their basins. However, these datasets have limitations and GSAs are encouraged to refine their well inventory to fill data gaps for their basin. This can be achieved using local records, surveys, and/or outreach to water systems, communities, and residents to develop a comprehensive understanding of drinking water well locations and construction and service details within their basin.

Relevant data, information, and resources to support GSAs in identifying drinking water well users are available in the Identifying Drinking Water Well Users Section of the Toolkit

2.2 Perform Public Outreach

Are drinking water well users and interests being informed and engaged throughout implementation and when updates are made to the GSPs?

Performing and documenting outreach is a requirement for GSPs, which must describe the parties that represent drinking water well users and detail the nature of consultation between the GSA and those parties.[24] For consideration, drinking water well users may not be represented or organized in consolidated ways that allow for GSAs to consult with and consider their interests in a single meeting or by meeting with one organization. Furthermore, small water systems typically do not have significant resources or staff, and domestic wells are often a one-well per household system. To alleviate these communication challenges, non-governmental organizations (NGOs) and community-based organizations (CBOs) can represent on behalf of these uses and users. Oftentimes, CBOs operate locally at venues such as churches or community facilities like public libraries, but these organizations may not be present in all areas of the state. Other local or municipal agencies (e.g., city, county, or health departments) may also have information or communication pathways to understand and consult with drinking water well users and well owners. Depending on the specific circumstances in their basins, GSAs may need to consider the following additional ways to meet their obligations to communicate and consult with and consider drinking water well users:

- Perform direct outreach to drinking water well users within their basins.
- Leverage existing communication and consultation pathways established by other existing entities such as NGOs, CBOs, or other local or municipal agencies.
- Coordinate Senate Bill (SB) 552 implementation. Counties fulfilling their responsibilities under SB 552 (described in Section 4.2) are also performing outreach to domestic users and small water systems through local drought task forces. Close coordination between GSAs and counties may therefore increase available information and understanding and foster coordinated activities related to emergency response and projects to build long-term resilience for drinking water well users.

Relevant data, information, and resources to support GSAs in performing public outreach are available in the Public Outreach Section of the Toolkit

24 23 CCR § 354.10 (a).

2.3 Understand Basin Conditions

Is there thorough understanding and analysis of historic, current, and future groundwater conditions and identified locations of wells that may go dry, have potential for water quality impairments, or impacts due to seawater intrusion or land subsidence?

GSP Regulations require GSAs to assess potential future impacts to drinking water well users, including how sustainable management criteria and minimum thresholds may affect drinking water uses and users, land uses, and property interests.[25] Understanding the location and nature of potential future impacts is critical to taking proactive measures to avoid or minimize those impacts and achieve sustainable groundwater management. Potential activities to achieve and demonstrate this understanding as part of GSP implementation could include:

- **Perform a shallow well analysis.** Many previously submitted GSPs used a shallow well analysis to establish sustainable management criteria in their basins. These analyses typically included reviewing production well locations in relation to representative monitoring sites, known well construction information such as well screen and total depth, and describing the beneficial use of the identified shallow wells in the vicinity of each representative monitoring site. In this way, a shallow well analysis informs the GSA when establishing sustainable management criteria by providing an evaluation and disclosure of the potential impacts to shallow production wells, including drinking water well users, of potential groundwater management approaches.

- **Project future groundwater conditions and forecast potential impacts to drinking water well users.** Methodologies to complete such analyses may vary, with some basins leveraging their calibrated numerical models and other basins using simpler methods, such as Geographic Information System (GIS) or spreadsheet analyses. The analysis may identify wells at risk of going dry, experiencing a degradation of water quality, experiencing land subsidence, and/or experiencing seawater intrusion. In particular, the analysis should evaluate the potential impacts at minimum thresholds.[26] If a GSA identifies potential impacts to drinking water wells caused by groundwater extractions projected to occur under intended management of the

23 CCR § 354.16

"Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes…"(d) "… [g]roundwater quality issues that may affect the supply and beneficial uses of groundwater…"

23 CCR § 354.18

(e) "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow. If a numerical groundwater and surface water model is not used to quantify and evaluate the projected water budget conditions and the potential impact to beneficial uses and users of groundwater, the Plan shall identify and describe an equally effective method, tool, or analytical model to evaluate projected water budget conditions."

CWC § 10721 (e)

"'De minimis extractor' means a person who extracts, for domestic purposes, two acre-feet or less per year."

25 23 CCR §§ 354.18 (e), 354.26 (b)(3), and 354.28 (b)(4).
26 23 CCR §§ 354.28(b)(4).

basin, including impacts to de minimis users[27] and disadvantaged communities, those impacts should be described in the GSP and periodic updates.[28] At a minimum, GSAs should disclose anticipated conditions and work with counties and other entities to respond, and/or implement projects and management actions to assist the identified users or avoid the adverse conditions.

- **Provide data and support to other local entities.** Well owners, counties, drillers, or other interested parties may need to better understand current and potential projected basin conditions, and GSAs should support them with information about sustainable management criteria, monitoring reports, and other data, customized to a particular well site.

Relevant data, information, and resources to support GSAs in understanding basin conditions are available in the Understanding Basin Conditions Section of the Toolkit

2.4 Evaluate Monitoring Network and Representative Monitoring Sites

Do the monitoring networks for the Plan area contain sites that will monitor impacts to drinking water uses and users?

GSP Regulations require GSAs to develop a monitoring network to monitor groundwater management, including impacts to all beneficial uses and users of groundwater, which includes all categories of drinking water well users.[29] Groundwater level and water quality monitoring is particularly important for drinking water users to observe trends in groundwater conditions and anticipate where and when potential drinking water or well impacts may occur. To effectively monitor impacts to drinking water uses and users in their basins, GSAs may need to consider the following when establishing, refining, or evaluating their monitoring network:

23 CCR § 354.34

(a) "Each Agency shall develop a monitoring network capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends…"
(b) "…The monitoring network objectives shall be implemented to…"
(2) "Monitor impacts to the beneficial uses or users of groundwater."
(f) "The Agency shall determine the density of monitoring sites and frequency of measurements to demonstrate short-term, seasonal, and long-term trends based upon…"
(3) "Impacts to beneficial uses and users of groundwater and land uses and property interests affected by groundwater production…"

23 CCR § 354.36

(a) "Representative monitoring sites may be designated by the Agency as the point at which sustainability indicators are monitored, and for which quantitative values for minimum thresholds, measurable objectives, and interim milestones are defined."
(c) "The designation of a representative monitoring site shall be supported by adequate evidence demonstrating that the site reflects general conditions in the area."

23 CCR § 354.38

(e) "Each Agency shall adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances that include…"
(3) "Adverse impacts to beneficial uses and users of groundwater."

27 De minimis users are defined in CWC § 10721 (e) as domestic users that extract less than 2 acre-feet per year.
28 CWC § 10723.2 and 23 CCR §§ 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), 354.34(f)(3), 354.38(e)(3), 355.4(b)(4).
29 23 CCR § 354.34 (b)(2).

Considerations for Groundwater Level Monitoring Network

- **Establish monitoring network based on local conditions.** The monitoring network should consider the major geologic features that affect groundwater flow in the basin, which include the principal aquifers and aquitards, faults, and folds,[30] and should include monitoring sites that will represent conditions experienced by drinking water well users identified in Section 2.1 above. This monitoring network should be of a sufficient density to collect measurements through depth-discrete perforated intervals to characterize the groundwater table or potentiometric surfaces for each principal aquifer. Monitoring sites and networks should also inform planning by supporting characterization of seasonal low and seasonal high groundwater conditions.

- **Evaluate areas needing more monitoring and enhance networks.** Identify areas in need of additional monitoring sites or increased monitoring frequency, such as areas currently experiencing declining water levels, dry wells, or issues due to land subsidence. Using well location and depth information described in Section 2.1, evaluate if monitoring sites and selected representative monitoring sites are adequately located, in distance and depth, to monitor groundwater conditions affecting drinking water user wells.

Considerations for Groundwater Quality Monitoring Network

- **Utilize existing water quality monitoring.** Understand and utilize existing water quality monitoring programs when appropriate. Use of existing monitoring programs could, among other potential benefits, save resources, allow for more thorough monitoring when used in conjunction with new monitoring sites added by GSA(s), and provide additional data to characterize basin conditions, understand basin interactions, and reveal long-term or historic trends. If leveraging other water quality monitoring programs for compliance with SGMA, GSPs should explain the correlation and how the requirements of the other programs satisfy the requirements of SGMA and the GSP Regulations.[31]

- **Evaluate the adequacy of monitoring.** GSAs should evaluate the established monitoring frequencies for constituents or other water quality criteria to ensure that the monitoring will effectively identify trends and allow timely management actions.

Considerations for Representative Monitoring Sites

- **Evaluate adequacy of representative monitoring sites to observe potential effects to drinking water well users.** Using well location and depth information described in Section 2.1 and from the established monitoring network, evaluate if selected representative monitoring sites adequately reflect general conditions in the area and can sufficiently monitor groundwater conditions that may affect drinking water uses and users and associated wells.

30 23 CCR § 354.14 (b)(4)(C).
31 23 CCR § 354.34 (e), 23 CCR § 354.34 (g)(1), 23 CCR § 354.34 (g)(2).

Relevant data, information, and resources to support GSAs in establishing monitoring networks and representative monitoring sites are available in the Monitoring Network Section of the Toolkit

2.5 Evaluate Sustainable Management Criteria

Do the sustainable management criteria in the GSP seek to avoid or minimize impacts to drinking water well users?

The sustainable management criteria section in a GSP defines conditions within the basin which constitute sustainable groundwater management, which SGMA defines as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results related to the six sustainability indicators.[32] As described in the introduction to Section 2, defining sustainable management criteria consists of four components:

- Sustainability Goal[33]
- Undesirable Results[34]
- Minimum Thresholds[35]
- Measurable Objectives[36]

Four of the six sustainability indicators[37] are potentially applicable to drinking water well users:

- Chronic lowering of groundwater levels
- Seawater intrusion
- Degraded water quality
- Land subsidence

The potential effects of these indicators on drinking water uses and users and how a GSP may structure its criteria for these indicators in consideration of drinking water uses and users are discussed in the subsections below.

Relevant data, information, and resources to support GSAs in evaluating sustainable management criteria are available in the Sustainable Management Criteria Section of the Toolkit

32 Sustainability indicators under SGMA consist of chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water.
33 23 CCR § 354.24.
34 23 CCR § 354.26.
35 23 CCR § 354.28.
36 23 CCR § 354.30.
37 Groundwater storage could potentially affect drinking water users in various ways, including storage lost to aquifer compaction due to subsidence. However, for simplicity this document discusses lowering of groundwater levels and subsidence since they are the root causes of changes in storage.

2.5.1 Chronic Lowering of Groundwater Levels

Domestic and small water system wells are typically drilled shallower than larger agricultural and municipal wells and are often the first to experience the effects of declining water levels, potentially leaving drinking water users and well owners with increased operating or maintenance costs, changes in water quality, or lacking an adequate drinking water supply. While SGMA does not require that all impacts to individual drinking water well users be avoided or mitigated, SGMA and other state laws and policies do require deliberate and careful consideration and a well-supported management approach regarding potential impacts to these users. Attempts to ignore or dismiss such impacts are inconsistent with the intent of SGMA and GSP Regulations. In recognition of the seriousness with which such issues need to be considered and addressed in GSPs, DWR has noted in its determinations how drinking water issues have been addressed in submitted GSPs. DWR's evaluations are on a case-by-case basis using basin-specific circumstances and the management approach of specific Plans. DWR's GSP evaluations[38] elaborate on basin-specific recommendations, and, in conjunction with the guidance in this document, serve as additional insight for how GSAs may address drinking water wells in their basin plans and updates.

The GSP Regulations require GSPs to analyze and disclose the effects of their selected undesirable results and minimum thresholds on beneficial uses and users of groundwater in a basin, which includes drinking water well users.[39] To do so, an adequate understanding of the location and construction details of the drinking water supply wells in the basin is needed, as described in Section 2.1 above. A well impact analysis that uses information on known drinking water supply wells and uses the minimum thresholds at monitoring network sites (which should be located near, and be representative of conditions experienced by, drinking water well users) is encouraged to demonstrate and disclose an adequate understanding of potential impacts to drinking water well users.[40] Results of this analysis should be compared to what is considered significant and unreasonable effects for the basin and convey when undesirable results are encountered.

SGMA does not require that GSPs address undesirable results that occurred prior to and were not corrected by January 1, 2015.[41] Therefore, some GSPs may not contain projects or management actions for previous (prior to 2015) impacts to drinking water wells. However, if minimum thresholds would allow water levels to drop and to potentially cause new undesirable results, and projects and management actions are not proposed that will address the impacts, the GSP should contain a thorough discussion, with supporting facts and rationale, explaining how and why the GSA did not include specific actions to address drinking water impacts from continued groundwater lowering below previous pre-SGMA levels. Such rationale could include, but is not limited to, economic analyses and descriptions of how such lowering is consistent with the GSP's sustainability goal. Conversely, if a GSA maintains that its GSP is not required to address certain impacts to drinking water wells that are considered undesirable results, the GSA should precisely describe those potential impacts and conditions in its basin and explain how it determined they fall within the exclusion provided in CWC § 10727.2(b)(4). Under CWC §10727.2(b)(4), GSAs are not required to address certain previous undesirable results, but they do have discretionary authority to do so if desired.

Based on a well impact analysis, if a portion of drinking water wells are at risk of losing access to adequate drinking water, the GSAs are encouraged to develop and implement projects and management actions to address the potential impacts. Section 2.6 below contains guidance for

38 Available on the SGMA Portal: https://sgma.water.ca.gov/portal/gsp/status.
39 23 CCR §§ 354.26 (b)(3) and 354.28 (b)(4).
40 23 CCR § 354.28 (b)(4).
41 Water Code § 10727.2 (b)(4).

projects and management actions GSAs may want to consider. Furthermore, coordination with counties implementing SB 552, which has requirements related to addressing impacts to drinking water well users, is encouraged as described in Section 4.2 below.

If a GSP proposes a management strategy that relies on a well mitigation program to justify the lowering of groundwater levels that may cause adverse effects to drinking water well users, the GSA must provide enough detail and evidence for DWR to determine whether the mitigation is feasible and likely to prevent undesirable results (e.g, describe the scope of the program, including a timeline for implementation, and how users impacted by continued groundwater level decline will be addressed).[42] With every basin and management approach being unique, the need and scale of such a mitigation program will vary from basin to basin. However, such a program should be reasonably structured so that it does not arbitrarily or inequitably exclude certain drinking water well users and GSAs should be cautious in program requirements that may exclude users based on age of well, location, socioeconomic status, demographics, and other relevant factors.

Relevant data, information, and resources to support GSAs in evaluating their chronic lowering of groundwater levels sustainable management criteria are available in the Chronic Lowering of Groundwater Levels Section of the Toolkit

2.5.2 Seawater Intrusion

Seawater intrusion has the potential to affect drinking water well users in coastal areas. GSP Regulations require that minimum thresholds be based on a chloride concentration isocontour for each principal aquifer and be based on current and projected sea levels.[43] In consideration of drinking water wells that are near an area that may be at risk of experiencing seawater intrusion, GSAs may consider the following guidance:

- **Evaluate if minimum threshold isocontour values are consistent with drinking water uses.** Regulated drinking water systems have a recommended maximum contaminant level for chloride of 250 milligrams per liter[44] and GSAs may consider this an appropriate guideline for drinking water purposes.

- **Establish monitoring wells screened at a similar depth as drinking water wells.** These wells that are used to generate the chloride isocontours should be screened similarly to drinking water wells, since seawater intrusion will vary with depth based on geology and seawater density.

- **Establish sentinel wells.** Monitoring wells on the seaward side of the proposed isocontours should be considered for monitoring. If they are placed strategically, they could allow early detection of intrusion fronts if it is progressing landward.

- **Use electrical conductivity (EC) measurements to better understand seawater intrusion conditions.** EC can serve as a surrogate for seawater intrusion and is a relatively easy and cost-effective measurement to gather in the field. Electrical conductivity transducers can be

42 23 CCR 355.4(b)(5).
43 23 CCR § 354.28 (c)(3).
44 22 CCR § 64449 Table B.

installed in the screen of monitoring wells and record measurements at regular intervals. Frequent measurements can provide valuable insight on how seawater intrusion may change seasonally or based on aquifer stresses.

- **Use geophysics to better understand seawater intrusion conditions.** Geophysical techniques are available that can assist GSAs with understanding and mapping seawater intrusion. Electromagnetic geophysical methods are sensitive to the high electrical conductivity associated with seawater-saturated sediments and are a commonly used method for mapping seawater intrusion. The airborne electromagnetic (AEM) method can be used to map the lateral extent of seawater intrusion in agricultural areas that are not densely populated and provide seawater intrusion interpretations to depths up to 1,000 feet below surface. Towed electromagnetic (t-TEM) methods can be deployed in smaller open spaces and provide seawater intrusion interpretations to depths up to 300 feet. Finally, the electromagnetic tomography (ERT) method can be deployed along coastlines by installing sensors in an array and provides seawater intrusion interpretations to depths that are dependent on the length of the sensor array (typically depths up to 600 feet).

Relevant data, information, and resources to support GSAs in evaluating their seawater intrusion sustainable management criteria are available in the Seawater Intrusion Section of the Toolkit

2.5.3 Degradation of Water Quality

GSP Regulations require that the GSA consider local, state, and federal drinking water quality standards applicable to the basin.[45] Existing water quality standards may include, but are not limited to, those established by the State Water Board's Division of Drinking Water, the Regional Water Quality Control Board's (RWQCB's) basin plan(s), Irrigated Lands Regulatory Program (ILRP), and/or Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).[46] The GSA may rely on water quality programs for monitoring, but should consider additional monitoring in areas where the drinking water wells are screened at different depths from the program's wells or where there is no existing monitoring.

- **Reevaluate constituents of concern (COCs).** The GSP Regulations require that the GSA set minimum thresholds for water quality degradation that impairs water supplies, which includes drinking water supplies.[47] Therefore, the GSA should describe what groundwater conditions are considered suitable for drinking water use and identify a set of COCs that may affect that suitability and need to be monitored.[48] A reasonable starting point is to review constituents regulated by the State Water Board's Division of Drinking Water with a drinking water standard, evaluate previously collected groundwater quality data in the basin, and identify constituents that may have values elevated above screening thresholds[49], increasing trends, and/or values greater than or at drinking water standards. The selected COCs should be supported by the

45 23 CCR § 354.28 (c)(4).
46 23 CCR § 354.28 (c)(4).
47 23 CCR § 354.28 (c)(4).
48 23 CCR § 354.28 (c)(4).
49 See the Degradation of Water Quality Section of the Toolkit

groundwater conditions section of the GSP. Additional constituents that could be reasonably anticipated based on land uses and hydrogeologic conditions in the basin can be considered as potential COCs.

As mentioned above, domestic and small water system wells are often drilled shallower than larger wells and may be more susceptible to poor water quality from land use activities. Water quality degradation can result from non-point sources such as broad application of fertilizer or pesticides on agricultural lands or from point sources such as concentrated animal feeding operations or contaminated sites from spills or leaks. GSP Regulations require that the GSA consider the potential impact of migrating contaminant plumes when identifying COCs and minimum thresholds.[50] Many locations with contaminated groundwater and contamination plumes are actively regulated by local, state, or federal agencies under various authorities. GSAs should coordinate with these agencies to understand how groundwater management in the basin may be impacting ongoing regulatory activities and overall water quality that may affect drinking water well users in the basin. Such water quality issues, either from contamination or from natural sources, emphasize the need for good monitoring that is representative of conditions experienced by drinking water wells and described in Section 2.4 above.

Relevant data, information, and resources to support GSAs in evaluating their degradation of water quality sustainable management criteria are available in the Degradation of Water Quality Section of the Toolkit

2.5.4 Land Subsidence

GSP Regulations require that GSAs present the best available information to document conditions related to land subsidence in the basin.[51] The GSP must set minimum thresholds at a rate and extent that avoids substantial interference with land uses.[52] To support this, many GSAs have identified infrastructure that are sensitive to changes in ground surface elevation such as canals, aqueducts, pipelines, wastewater systems, railways, roads, and bridges. However, wells are also susceptible to damage from subsidence. Subsidence can cause well casing to collapse, above-ground equipment to fail, and damage sanitary seals that can cause a well to fail or contaminants to enter the well. GSAs should consider the following to protect drinking water well users from these effects:

- **Identify wells that may be susceptible to subsidence.** Both the location and depth of wells in a basin should be determined and considered to understand if they are constructed through clay layer(s) where subsidence-causing compaction may occur and potentially damage wells.
- **Consider drinking water wells when revising sustainable management criteria.** As mentioned above, various types of infrastructure may be at risk of damage due to subsidence and drinking water wells should be considered in revising sustainable management criteria.
- **Monitor for subsidence in areas with drinking water wells.** The subsidence monitoring network should not exclude areas with drinking water wells.

50 23 CCR § 354.28 (c)(4).
51 23 CCR § 354.16 (e).
52 23 CCR § 354.28 (c)(5).

Relevant data, information, and resources to support GSAs in evaluating their land subsidence sustainable management criteria are available in the Land Subsidence Section of the Toolkit

2.6 Develop and Implement Projects and Management Actions

Are there projects and management actions proposed and being implemented that will avoid or minimize impacts to drinking water well users?

The GSP Regulations require GSPs to identify projects and management actions that will achieve the sustainability goal for the basin.[53] GSAs, local agencies, and NGOs or CBOs may benefit from coordination and potential partnerships to plan and prioritize projects and management actions in their respective basins. Examples of the benefits of these partnerships could include identification of details on what will be achieved with a project, who will implement the project, and how a project will be managed.

Some projects and management actions may be proposed and implemented to respond to near-term effects, including emergency needs and drought impacts, where drinking water well users may lose access to adequate drinking water supply. Such actions could include bottled water, tanked water, and treatment measures. These responses should be closely coordinated with local and state emergency authorities along with counties implementing their drought planning responsibilities under SB 552. However, GSAs should also focus on measures that will avoid these conditions and promote long-term sustainability.

Examples of the types of projects and management actions that, depending on circumstances in a basin, could achieve reliable, long-term supplies for drinking water well users include:

- **Management actions**
  - Demand reduction surrounding communities reliant on groundwater for drinking water
  - Adjusting the location of demand, such as creating buffer zones for drinking water users
  - Managed aquifer recharge near communities to replenish shallow aquifers, with considerations of potential water quality effects

- **Alternate supply projects**
  - Shifting drinking water well users to surface water supplies
  - Consolidation of drinking water users into existing community and municipal systems
  - Establishing new community water systems
  - Drilling new wells for drinking water users

- **Well modification projects**
  - Lowering pumps in existing drinking water wells
  - Rehabilitating existing drinking water wells
  - Deepening existing drinking water wells

- **Treatment projects**
  - Point of use or point of entry treatment for drinking water users

The list above is not exhaustive and the types of projects and management actions that may be feasible will vary from basin to basin as determined by the GSAs. When developing or implementing

53 23 CCR §§ 354.24 and 354.44 (a).

such actions, GSAs should strive to include all drinking water well users and should carefully consider any requirements so that assistance to drinking water users is not administered arbitrarily or inequitably as elaborated in Section 2.5.1 above.

GSAs may need to prioritize their projects and management actions. Prioritization factors could include:

- Effectiveness
- Number of users benefitted
- Permitting and environmental considerations
- Water rights
- Cost

Based on the established priority, GSPs should describe the circumstances under which the projects and management actions will be implemented as required by GSP Regulations.[54] However, projects and management actions are often best implemented proactively, meaning GSAs should not necessarily wait for triggering events. Similar to other disasters, once the emergency conditions that impair drinking water supplies are present, it may be too late to implement some of the projects and management actions that would have avoided the impacts had they been implemented sooner.

GSAs may want to engage drillers and well permitting agencies to make sure they are able to determine the minimum threshold at a particular well site if the site is within a medium or high priority basin. Knowing the depth of the minimum threshold will allow them to:

- Inform existing well owners of the level of risk that their well could go dry or experience issues associated with water levels declining to the minimum threshold and allow well owners to take proactive measures
- Inform or require owners and drillers of new wells to drill to a depth which would continue to provide an adequate supply at minimum threshold conditions
- Assess whether a new supply well may have impacts on nearby drinking water wells

Relevant data, information, and resources to support GSAs in developing and implementing projects and management actions are available in the Projects and Management Actions Section of the Toolkit

2.6.1 Funding

Funding to support both short-term emergency efforts and long-term solutions that build resilience may be available from many public sources at the local, county, state, and federal levels. Numerous funding programs require that recipients (GSAs) match the requested grant funding, either in dollars or "in-kind" services.

2.6.1.1 Costs of Addressing Drinking Water Impacts

Specific costs for projects, management actions, and assistance to impacted drinking water well users will depend on the nature, type, and scale of a given project. The Framework for a Drinking Water Well Impact Mitigation Program (2022)[55] provides estimates for well activities such as diagnostics,

54 23 CCR § 345.44 (b)(1)(A).
55 Available at: https://www.selfhelpenterprises.org/wp-content/uploads/2022/07/Well-Mitigation-English.pdf

pump lowering, and new well drilling. While these estimates give an approximation of potential costs to well owners, they can vary widely depending on the size and depth of well, material costs, and other market forces.

2.6.1.2 Funding Sources

Most public financial assistance programs change frequently as the sources of funding for these programs have specific requirements on how and when the dollars must be spent. The website toolkit connected with this document serves as a resource for GSAs and parties whose drinking water sources have been impacted. It will be updated regularly to provide the most current and accurate information regarding applicable financial assistance programs.

2.6.1.2.1 State and Federal Grants and Loans

While there are many relevant financial assistance programs, this section highlights some state and federal funding programs that are likely to continue to be available into the future. The federal and state governments maintain websites that serve as clearinghouses for available funding programs, and DWR and the Sustainable Groundwater Management (SGM) Program also maintain funding websites. Each of these websites are listed below and additional funding programs can be found via internet search of the terms "drinking water", "domestic well", "small community water systems", or simply "water" or "groundwater".

- **Federal:** https://www.grants.gov/
- **California Statewide:** https://www.grants.ca.gov/
- **DWR:** https://water.ca.gov/Work-With-Us/Grants-And-Loans
- **SGM Program:** https://water.ca.gov/work-with-us/grants-and-loans/sustainable-groundwater

2.6.1.2.2 GSA Fees and Assessments

SGMA gives GSAs the authority to levy fees and assessments based on usage, acreage, or other criteria.[56] Some GSAs have already implemented such fees and assessments and others may do so as they implement their GSPs. Such revenue sources may be necessary to implement GSPs and projects and management actions because state, federal, and other funding sources typically have requirements of the types of activities that can be funded and often require cost match or repayment of loans. GSAs may need to explore different fee and assessment processes depending on their governance structure and other relevant laws or policies.

Relevant and current information about potential funding approaches and opportunities are available in the Funding Section of the Toolkit

2.7 Continue Engagement and Fill Data Gaps

Are drinking water well users and interests continually being informed and engaged during GSP implementation activities such as projects and management actions, annual reports, and updates to GSPs?

As GSAs move forward with implementation of their GSPs, keeping the public informed of Plan progress, basin conditions, and the status of projects and management actions is critical[57] and may

56 Water Code §§ 10725 et seq. and 10730 et seq.
57 23 CCR § 354.44 (b)(1)(B).

foster greater community understanding and support of GSA efforts. In basins that identify the potential for impacts to drinking water well users, either during the development of the GSP or through evaluation of new monitoring data, refinements of numerical models, or other mechanisms, ongoing public outreach to engage drinking water well users may provide opportunities to receive feedback and identify creative solutions to address these challenges. Ongoing public outreach with drinking water well users is important to inventory wells in the basin, provide educational materials on well infrastructure and maintenance, involve drinking water users so they can understand groundwater planning and management efforts, and inform them how and with whom to communicate if impacts occur to their wells.

GSAs have data gaps identified in their GSPs, and as part of implementation should be working to fill those gaps and any additional gaps that may have been identified after GSP adoption. GSAs should provide information regarding those data gaps that are filled in annual reports and periodic updates of the GSPs. Such data gaps could help address or further identify potential effects on drinking water users and continual engagement with drinking water users on the changes in the GSPs is encouraged.

Relevant data, information, and resources to support GSAs in performing ongoing public outreach and filling data gaps are available in the Public Outreach and Filling Data Gaps Sections of the Toolkit

3. TOOLS AND RESOURCES

The toolkits on the website are organized to support the guidance presented in Section 2 and aligned with the overall outline of this document. The toolkits are intended to be dynamic and will be updated as new information is available.

The toolkits contain links to reference documents, websites, data, and online tools that have been developed under various state programs. The toolkits focus on state resources, but the website also contains a link to the Groundwater Exchange, which is a useful portal for accessing non-state tools and resources related to groundwater management.

Considerations for Identifying and Addressing Drinking Water Well Impacts Toolkits

4. COMPLEMENTARY PROGRAMS AND INITIATIVES

Complementary programs and initiatives exist that can be aligned to help address impacts to drinking water well users. Alignment and coordination with these initiatives can aid GSAs in the understanding and development of processes for determining if groundwater management and extraction is resulting in impacts to drinking water well users. The initiatives that might be most useful to the GSAs when developing and implementing their GSPs and associated reports and updates include the Drinking Water Principles and Strategies document, SB 552 (Drought Planning for Small

Water Suppliers and Rural Communities), local government general plans, well permitting, and other relevant programs within the basin.

Relevant information, about complementary programs and initiatives are available in the Complementary Programs and Initiatives Section of the Toolkit

4.1 Groundwater Management Principles and Strategies

To fulfill an April 2021 Emergency Proclamation by the Governor, DWR, in coordination with the State Water Board, developed Groundwater Management Principles and Strategies to Monitor, Analyze, and Minimize Impacts to Drinking Water Wells: A Framework for State Action to Support Drought Resilient Communities (Groundwater Management Principles and Strategies). The principles and strategies document provides a shared, interagency framework that captures key actions the state will pursue to help address and minimize impacts to drinking water well users. Strategy 6.2 of the Groundwater Management Principles and Strategies, identifies that the state will, "develop guidance for local agencies to collaborate on mitigation strategies and actions to offset impacts of groundwater pumping and management on drinking water well users in partnership with local agencies and NGOs [Non-Governmental Organizations]". Additional strategies outlined in the Groundwater Management Principles and Strategies document are featured as items in the online toolkit associated with this guidance document. The status of other principles and strategies can be found at the program website https://water.ca.gov/Programs/Groundwater-Management/Drinking-Water-Well.

4.2 Senate Bill 552: Drought Planning for Small Water Providers and Rural Communities

In response to drought conditions, the State Legislature passed SB 552 in September 2021, also known as Drought Planning for Small Water Suppliers and Rural Communities. SB 552 requires state and local governments to share the responsibility for preparing and acting in the case of a water shortage event. Specifically, the law requires small water suppliers (15 to 3,000 connections and serving less than 3,000 acre-feet per year) to develop a water shortage contingency plan and requires counties to assemble a standing drought task force to facilitate drought planning, response and management, and to develop drought resilience plans to prepare for water shortage for state small water systems (serving 5 to 14 connections), domestic wells, and other privately supplied homes within the county's jurisdiction. The requirements of SB 552 were also identified in the Groundwater Management Principles and Strategies document described above, as part of the state's actions that will help address drinking water needs. The nexus of the two programs (SGMA and SB 552) and their differences, including that SGMA applies only to groundwater basins and SB 552 is statewide, is documented and illustrated in a fact sheet on alignment and coordination between the two programs.

Prior to planning or implementing activities to address drinking water impacts, GSAs are encouraged to begin coordination with other local entities such as local water systems and counties. Small water suppliers will have water shortage contingency plans for compliance with SB 552[58] as a stand-alone plan and larger suppliers will have a drought contingency plan as part of their urban water management plans. Under SB 552, counties will have a drought resilience plan that addresses domestic wells either as a stand-alone or as part of an existing county plan such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. The drought

58 DWR's SB 552 website: https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552

resilience plan has elements that focus on short-term response as well as long-term strategies, so coordination between GSAs and counties is important.

At a minimum, GSAs should identify who is the county contact for emergency response and/or responsible for drought resilience plans, invite them to be part of the GSP implementation process, and inform them of GSP implementation activities related to drinking water users, and identify opportunities for collaboration on projects and management actions.

4.3 General Plans

Coordination with cities and counties (planning agencies) and their associated general or land use plans can be leveraged to aid GSAs in understanding and avoiding future land use changes that could increase groundwater demand and could result in impacts from groundwater management and extraction practices on drinking water well users. As per California Government Code, "it is vital that there be close coordination and consultation between California's water supply or management agencies and California's land use approval agencies to ensure that proper water supply and management planning occurs to accommodate projects that will result in increased demands on water supplies or impact water resources management."[59]

When a city or county proposes to adopt or substantially amend a general plan, the GSA should receive notification and subsequently provide the planning agency their GSP as well as a report on the anticipated effects of the general plan adoption or amendment on the implementation of the GSP.[60,61] Similarly, a GSP shall "take into account the most recent planning assumptions stated in local general plans of jurisdictions overlying the basin"[62] and "include a description of the consideration given to the applicable county and city general plans and…an assessment of how the groundwater sustainability plan may affect those plans."[63]

Specifically, GSPs shall include description of how the land use elements of general plans, or land use plans, "may change water demands within the basin or affect the ability of the [GSA] to achieve sustainable groundwater management over the planning and implementation horizon, and how the [GSP] addresses those potential effects."[64] . This codified coordination between planning agencies and groundwater management agencies helps to ensure bilateral decision-making regarding existing and future water supplies, demands, and their associated potential impacts on drinking water uses and users.

4.4 Well Permitting

Regulatory authority over well construction, alteration, and destruction typically rests with local jurisdictions, such as the county department of environmental health. However, some cities or water agencies may have gained the well permitting authority for their jurisdictions. GSAs should coordinate closely with these well permitting agencies to ensure that local well ordinances and well permitting processes are consistent with implementation of the GSP and will support sustainability. GSAs should identify the contacts at the well permitting agencies in their basin, invite them to be part of the GSP implementation and modification process, and inform them of GSP implementation activities.

A previous statewide drought emergency executive order required well permitting agencies to obtain written verification from GSAs that a proposed new well or well modification would not "…

59 Government Code § 65352.5(a).
60 Select additional information may be required as per Government Code § 65352.5(d)(2).
61 Government Code § 65352.5(d)(1) and 65352.5(d)(3).
62 Water Code § 10726.9.
63 Water Code § 10727.2(g).
64 23 CCR § 354.8(f)(3).

interfere with the production and functioning of existing nearby wells…", "…cause subsidence…", or "…be inconsistent with any sustainable groundwater management program".[65] As discussed in Section 2.6 above, this type of coordination is intended to help ensure that during drought periods: new wells won't affect nearby drinking water wells, exacerbating drought impacts and potentially leaving them without an adequate drinking water supply. Permitting agencies, drillers, and owners of new wells in high and medium priority groundwater basins should know the depth of the groundwater level minimum threshold at the well site and should construct the well deeper than the minimum threshold, as identified in the GSP.

4.5 Other Relevant Programs

Listed below are a set of other programs that GSAs may want to coordinate with on issues related to impacts to drinking water well users.

- **RWQCBs** – There are nine Regional Water Quality Control Boards throughout the state with each board making decisions for water quality in their region, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions.
- **GAMA** – The Groundwater Ambient Monitoring and Assessment Program under the State Water Board SWRCB is a comprehensive groundwater quality monitoring program and collaborates with the RWQCBs, DWR, the Department of Pesticide Regulations, U.S. Geological Survey, Lawrence Livermore National Laboratory, and cooperates with local water agencies and well owners to collect water quality information and make the data available to the public.
- **DDW** – The Division of Drinking Water is a program of the State Water Board that regulates public drinking water systems.
- **SAFER** – The Safe and Affordable Funding for Equity and Resilience is a State Water Board program under DDW which focuses on short- and long-term drinking water solutions through the identification of "at risk" systems and wells, providing grants and loans, encouraging community engagement, and, when necessary, regulation and enforcement.
- **ILRP** – The Irrigated Lands Regulatory Program is a State Water Board program designed to prevent agricultural runoff from impairing surface waters, and later included the addition of groundwater regulations.
- **CV-SALTS** – The Central Valley Salinity Alternatives for Long-Term Sustainability is a cooperative effort among regulators, permittees, environmental interests, and other parties to create a comprehensive Central Valley Salinity Management Plan.

65 Executive Order N-7-22 Action 9.

TO: Standing Advisory Committee
Agenda Item No. 7c

FROM: Brian Van Lienden / Taylor Blakslee

DATE: February 29, 2024

SUBJECT: Discuss and Take Appropriate Action on Sustainable Yield Methodology

Recommended Motion
Standing Advisory Committee feedback requested.

Discussion
Groundwater Sustainability Plan Sustainable Yield Methodology options are provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

7c. Discuss and Take Appropriate Action on Sustainable Yield Methodology

Brian Van Lienden / Taylor Blakslee

February 29, 2024

Sustainable Yield Methodology

- Sustainable yield methodology is described in Section 2.3 of the GSP: *The sustainable yield simulations were performed … so as to achieve an exact balance between supplies and demands in the Basin-wide groundwater budget on average over the 50-year simulation period.*
- Sustainable yield was reported in the GSP for the full basin; a subtotal was calculated for the Central Management Area + farming units as part of implementation of pumping allocations
- Potential options for sustainable yield methodology:
  - Use the same computational method
  - Could consider reporting sustainable yield for sub-regions within the Basin

TO: Standing Advisory Committee
Agenda Item No. 7d

FROM: Taylor Blakslee / Brian Van Lienden

DATE: February 29, 2024

SUBJECT: Discussion and Take Appropriate Action on Basin-Wide Water Management and Allocation Program Components

Recommended Motion
Standing Advisory Committee feedback requested.

Discussion
Options for basin-wide water management and allocation program components are provided as Attachment 1. Final direction on this topic is expected to occur in July 2024.

Cuyama Basin Groundwater Sustainability Agency

7d. Discuss and Take Appropriate Action on Basin-Wide Water Management and Allocation Program Components (Continued Discussion)

Taylor Blakslee / Brian Van Lienden

February 29, 2024

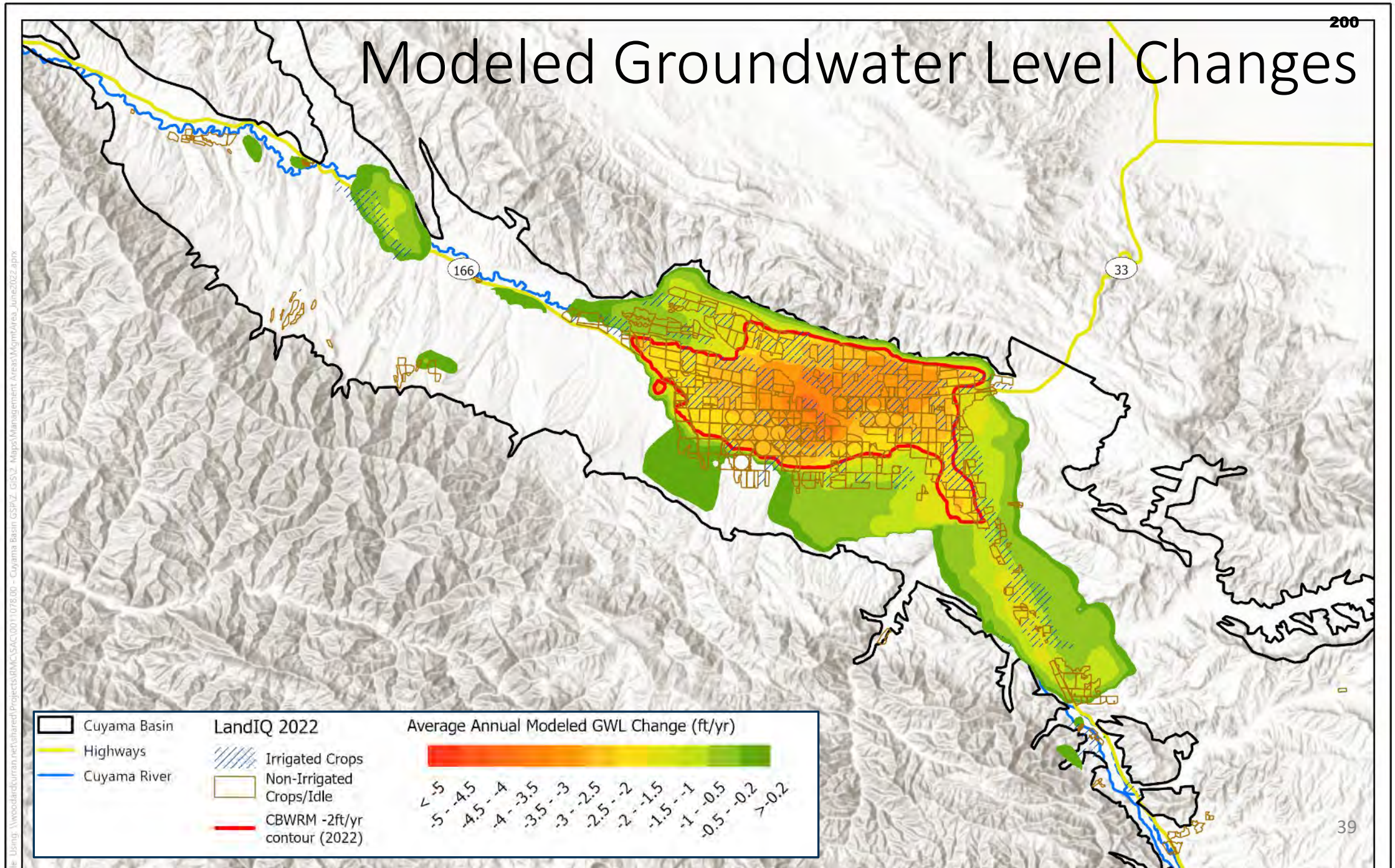
Background

- **September 7, 2022:** Board directed staff to develop a strategy for managing pumping throughout the basin
- **January 18, 2023:** Staff presented draft options and the Board directed staff to refine these options
- **March 29, 2023:** Staff presented refined pumping management options for Board review
- **September 6, 2023:** Staff performed second review of basin-wide management options with the Board and received feedback

What does the GSP say?

- **Executive Summary (p. ES-1)**: "Although current analysis indicates groundwater pumping reductions on the order of 50 to 67 percent may be required Basin-wide to achieve sustainability, additional efforts are required to confirm the amount and location of pumping reductions required to achieve sustainability. These efforts include collecting additional data and a review of the Basin's groundwater model, along with other efforts as outlined in this document."
- Pumping reductions outside the CMA were contemplated but not *mandated* under the current version of the GSP

Modeled Groundwater Level Changes



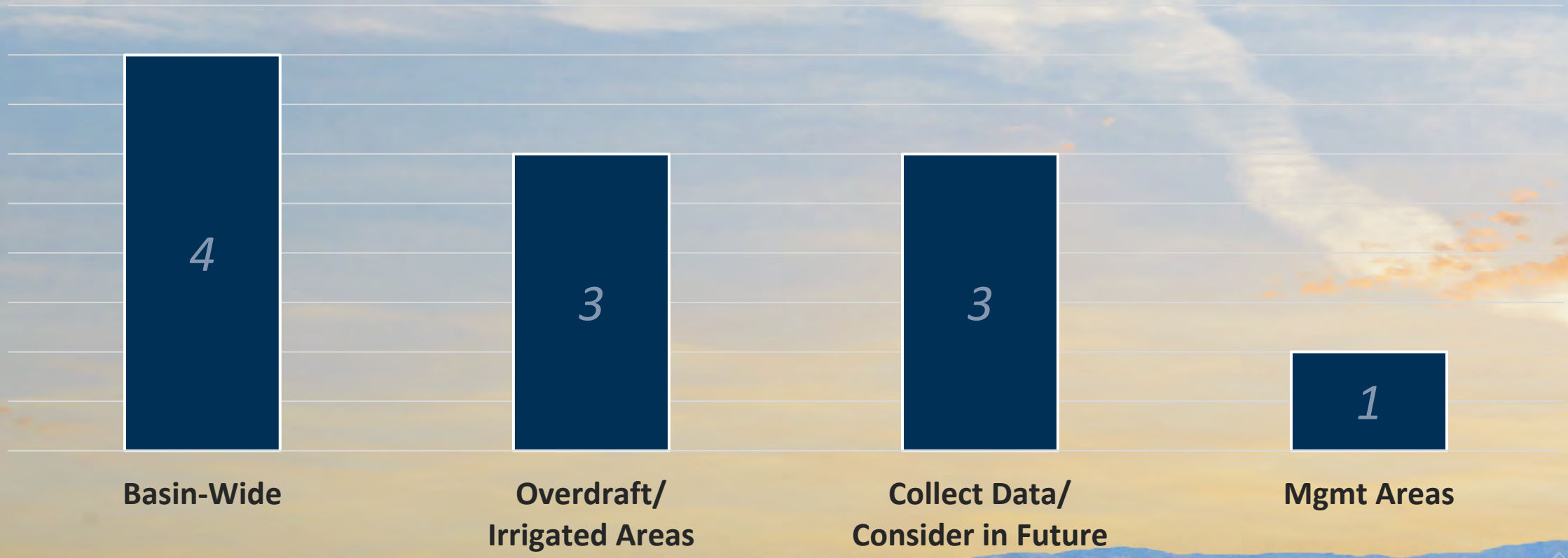
Options to Consider Regarding Pumping Allocations Outside the Central Management Area

	OPTIONS	NOTES	PROS	CONS
1	Do nothing (at this time)	No GSP amendment required	Lower cost, if overdraft is not significant outside the CMA	May not achieve basin-wide sustainability; incentivize development outside the CMA
2	Do something	Now or later?		
a	Create multiple Management Areas	GSP amendment required (new MA criteria to be developed)	Better representation for local conditions	Boundary issues remain; administration of multiple MAs = multiple methodologies
b	Create one (1) new MA that's everything outside the CMA	GSP amendment required (new MA criteria to be developed)	Everyone in an overdrafted portion of the basin is treated similarly	Boundary issues remain; administration of two different MA = two different methodologies
c	Eliminate all MAs and manage basin as a whole	GSP amendment	Consistent with basin boundary and ease of administration (everyone treated the same)	May not reflect local groundwater conditions within the basin

Public Feedback

- **Tech Forum**
  - 8-21-23: Similar hydrologic/geologic areas should be managed together
  - 10-3-23: Support for basin management based on in field empirical data that is then incorporated into the model
- **Public**
  - 9-6-23: Need a basin-wide management approach for the basin
  - 10-12-23: Since the basin is one interconnected watershed, the GSA should consider applying pumping allocations to everyone

Board Feedback



Potential Options

- Potential options for GSA staff to develop once the model is updated in July 2024:
  1. Continue with CMA + farming unit (updated with model v.03)
     a. Could define based on physical features
     b. Could define based on modeling data
  2. Pumping reduction applied basin-wide to
     a. All/gross acres
     b. Irrigated acres:
        i. Currently irrigated
        ii. Historically irrigated
  3. Create additional management areas to cover overdrafted areas outside CMA + farming units ("green zones")
     a. Could define based on physical features
     b. Could define based on modeling data
- **Which options does the Board want staff to develop?**

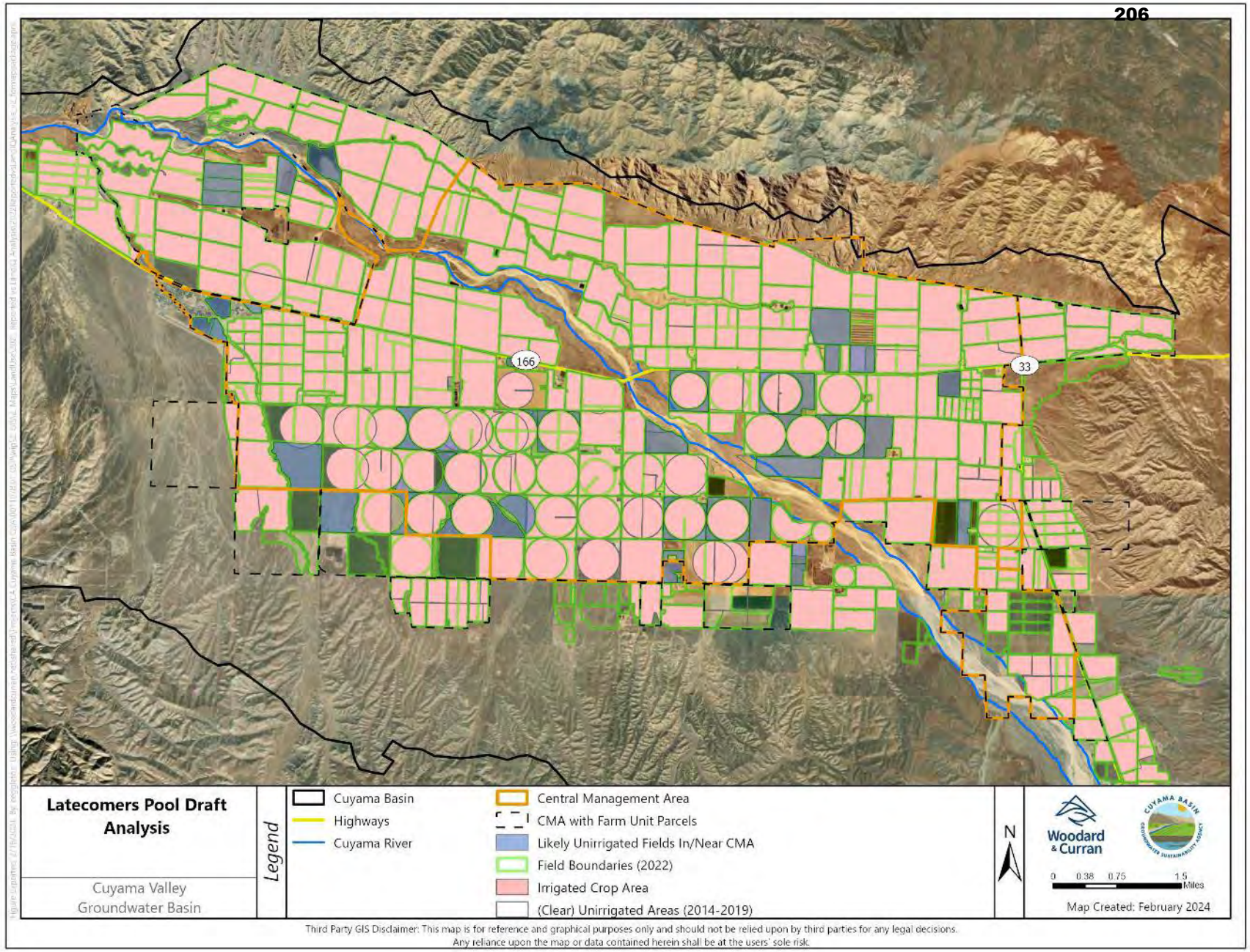
Analysis of Potential Latecomers Pool

- Land use data was analyzed to identify parcels in vicinity of CMA plus farming units that could potential start irrigation in future (see map on next slide)
  - ~3,350 acres were identified
  - ~9,300 acre-feet of estimate use
- Spreadsheet tool was developed to analyze impact in 2023 of a latecomer pool (see right with example 4,000 AF pool)

	Estimated acreage of non-used but reported in CMA	1,674
	Estimated acreage of non-used but reported near CMA	1,674
	Total acreage non-used but reported in/near CMA	**3,349**
	CMA and Farming Units acreage	32,021
	Assumed Average per acre crop use	**2.78**
	Total Acreage of latecomers (automated)	3,349
	Volume of irrigation water if all latercomers come	9,325
	Total AF to reserver for latecomers	**4000**
0	*Approximate Latecomer acreage irrigated*	*1,436.56*

Year	% reserved for latecomer pool	Latecomer Pool by year	Maximum Annual Pumping (af) For original list WITH LATECOMERS pool removed
2023	8.25%	4,000	44,484
2024	8.25%	3,839	42,698
2025	8.25%	3,631	40,376
2026	8.25%	3,422	38,055
2027	8.25%	3,213	35,733
2028	8.25%	3,004	33,411
2029	8.25%	2,796	31,089
2030	8.25%	2,587	28,768
2031	8.25%	2,378	26,446
2032	8.25%	2,169	24,124
2033	8.25%	1,960	21,803
2034	8.25%	1,752	19,481
2035	8.25%	1,543	17,159
2036	8.25%	1,334	14,837
2037	8.25%	1,125	12,516
2038	8.25%	949	10,551
2039	8.25%	949	10,551
2040	8.25%	949	10,551

Map of Un-Irrigated Parcels that Could Potentially be Irrigated



Allocation Program: Carryover

- On January 10, 2024, GSA staff asked the Board if they would staff to develop carryover for unused allocation options and the Board directed staff provide a report of what other GSAs are doing regarding carryover water

- Legal counsel prepared the following review of carryover policies GSAs are or have considered

Cuyama Basin GSA

Allocation Carryover Methodologies

Question Presented

Do other groundwater basins allow landowners to carryover unused groundwater allocations?

If so, to what extent?

Authority

Water Code, § 10726.4 (a)(4)

"A groundwater sustainability agency shall have the following additional authority and may regulate groundwater extraction using that authority . . . to establish accounting rules to allow unused groundwater extraction allocations issued by the agency to be carried over from one year to another and voluntarily transferred, ***if the total quantity of groundwater extracted in any five-year period is consistent with the provisions of the groundwater sustainability plan***."

WHAT ARE OTHER GSAs DOING?

East Kaweah GSA

- EKGSA authorizes carryover of (a) Native Allocation; and (b) Transitional Pumping Allocations (Tier 1 and Tier 2).

- If an Eligible Landowner (an owner of two acres or more of land with EKGSA) uses less than its total combined allocation in a given Allocation Year (October 1 – September 30), the difference between the landowner's total combined allocation and the total amount of groundwater used and/or transferred may be carried over to the next Allocation Year as a Groundwater Credit.

- Groundwater Credits remain in a landowner's account for five years. After five years, the credits are removed from the landowner's account and forfeited for the benefit of the Basin.

Eastern Tule GSA

- ETGSA authorizes carryover of (a) Sustainable Yield Allocation; and (b) Tier 1 Penalty Allocation. ETGSA does not authorize the carryover of Tier 2 Penalty Allocations.

- ETGSA accounts for carryover of Sustainable Yield Allocation and Tier 1 Penalty Allocation separately, but follows the same general formula of EKGSA:

    - If an owner uses less than its allocation in a given year, the difference between the owner's allocation and the total amount of groundwater used and/or transferred may be carried over to the next year as a Groundwater Credit.

- Groundwater Credits remain in an owner's account for five years. After five years, the credits are removed from the owner's account and and forfeited for the benefit of the Basin.

General Formula

Carryover = Total Allocation – Groundwater Used

WHAT ARE ADJUDICATED BASINS DOING?

Las Posas Basin

- If a Water Right Holder uses less groundwater than their Annual Allocation, that Water Right Holder shall accrue Carryover.
- "Carryover" is "any portion of a Water Right Holder's Annual Allocation not Used in the Water Year in which it is allowed, which may be accrued and Used in future Water Years. . ."
- A Water Right Holder may accrue a limit of Carryover up to 150% of the "Allocation Basis" held by that Water Right Holder.
- Carryover must be used within five Water Years (October 1 – September 30) from the Water Year in which it accrued. Any Carryover not Used within five Water Years from the Water Year in which it accrued will be deemed to have been forfeited for the benefit of the Basin.
- In any Water Year in which a Water Right Holder that owns Carryover Uses water from the Basin, that Water Right Holder will be deemed to have first Used the Carryover.

Mojave Basin

- Mojave Basin Judgment provides “Producers” with a “Carry over Right.”
- A “Carry over Right” is “the right of a Producer to delay and accumulate the Production of such Producer’s share of a Subarea Free Production Allowance until and only until the following Year free of any Replacement Water Assessment.”
- “The first water Produced by a Producer during any Year shall be deemed to be an exercise of any Carry Over Right.”

Key Takeaways

- Other groundwater basins – both adjudicated and unadjudicated – allow landowners to carryover unused groundwater allocations.
- Carryover = Total Allocation – Groundwater Used
- Carryover is first type of water to be used in a given year, if held by a landowner.
- Carryover will only roll over for five years, After five years, any unused carryover will be forfeited for the benefit of the basin.

TO: Standing Advisory Committee
Agenda Item No. 7e

FROM: Taylor Blakslee / Brian Van Lienden

DATE: February 29, 2024

SUBJECT: Direction on Remaining Public Workshops

Recommended Motion
Standing Advisory Committee feedback requested.

Discussion
An update on public workshops for the Groundwater Sustainability Plan Amendment process is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

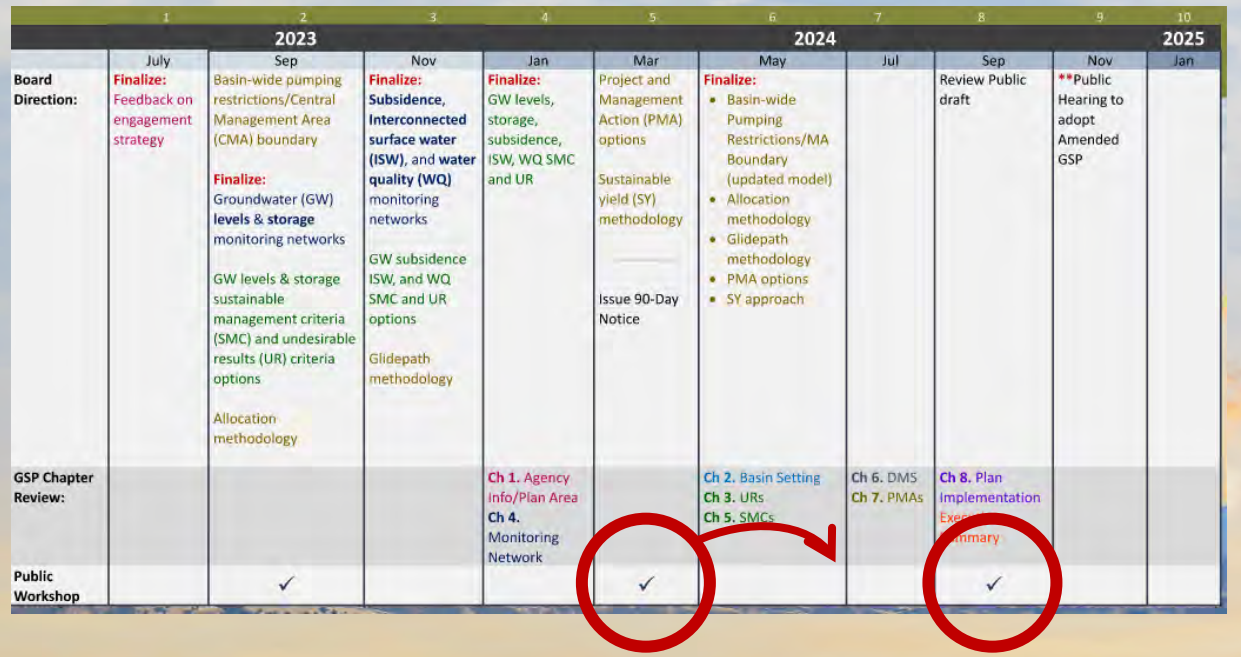
7e. Direction on Remaining Public Workshops

Taylor Blakslee / Brian Van Lienden

February 29, 2024

Feedback Requested on Proposed Workshop Plan

- Two (2) public workshops remain
- Workshop #2 was planned for March, but staff recommends delaying until the model update is complete (June/July)
- Proposed topics for remaining workshops:
  - **Workshop #2** – Public feedback on:
    - Updated model results
    - Projects and management actions
    - Adaptive mgmt.
    - Allocation program
  - **Workshop #3** – Present revised draft GSP ahead of public hearing



	1	2	3	4	5	6	7	8	9	10
	2023					2024				2025
	July	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan
Board Direction:	**Finalize:** Feedback on engagement strategy	Basin-wide pumping restrictions/Central Management Area (CMA) boundary **Finalize:** Groundwater (GW) **levels & storage** monitoring networks GW levels & storage sustainable management criteria (SMC) and undesirable results (UR) criteria options Allocation methodology	**Finalize: Subsidence, Interconnected surface water (ISW),** and **water quality (WQ)** monitoring networks GW subsidence ISW, and WQ SMC and UR options Glidepath methodology	**Finalize:** GW levels, storage, subsidence, ISW, WQ SMC and UR	Project and Management Action (PMA) options Sustainable yield (SY) methodology Issue 90-Day Notice	**Finalize:** • Basin-wide Pumping Restrictions/MA Boundary (updated model) • Allocation methodology • Glidepath methodology • PMA options • SY approach		Review Public draft	**Public Hearing to adopt Amended GSP	
GSP Chapter Review:				**Ch 1.** Agency Info/Plan Area **Ch 4.** Monitoring Network		**Ch 2.** Basin Setting **Ch 3.** URs **Ch 5.** SMCs	Ch 6. DMS Ch 7. PMAs	**Ch 8.** Plan Implementation Exec Summary		
Public Workshop		✓			✓			✓		

- **Doe the Board agree with the workshop date change and proposed workshop topics?**

TO: Standing Advisory Committee
Agenda Item No. 8a

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 29, 2024

SUBJECT: Update on Groundwater Sustainability Plan Activities

Recommended Motion
None – information only.

Discussion
Cuyama Basin Groundwater Sustainability Agency (CBGSA) Groundwater Sustainability Plan (GSP) activities and consultant Woodard & Curran's (W&C) accomplishments are provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

8a. Update on Groundwater Sustainability Plan Activities

Brian Van Lienden

February 29, 2024

HALLMARK GROUP Woodard & Curran

January-February Accomplishments

- ✓ Completed installation of second multi-completion monitoring well
- ✓ Performed geophysical survey at Santa Barbara Canyon Fault
- ✓ Developed options for projects and management actions for Board consideration
- ✓ Analyzed water availability for stormwater capture water rights analysis
- ✓ Performed ongoing updates to Cuyama Basin groundwater model
- ✓ Developed quarterly groundwater conditions report
- ✓ Prepared grant invoice for submittal to DWR

TO: Standing Advisory Committee
Agenda Item No. 8b

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 29, 2024

SUBJECT: Update on Grant-Funded Projects

Recommended Motion
None – information only.

Discussion
An update on Cuyama Basin Groundwater Sustainability Agency (CBGSA) grant-funded projects is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

8b. Update on Grant Funded Projects

Brian Van Lienden

February 29, 2024

HALLMARK GROUP Woodard & Curran

Schedule for Technical Work Required for GSP Amendment and Periodic Evaluation

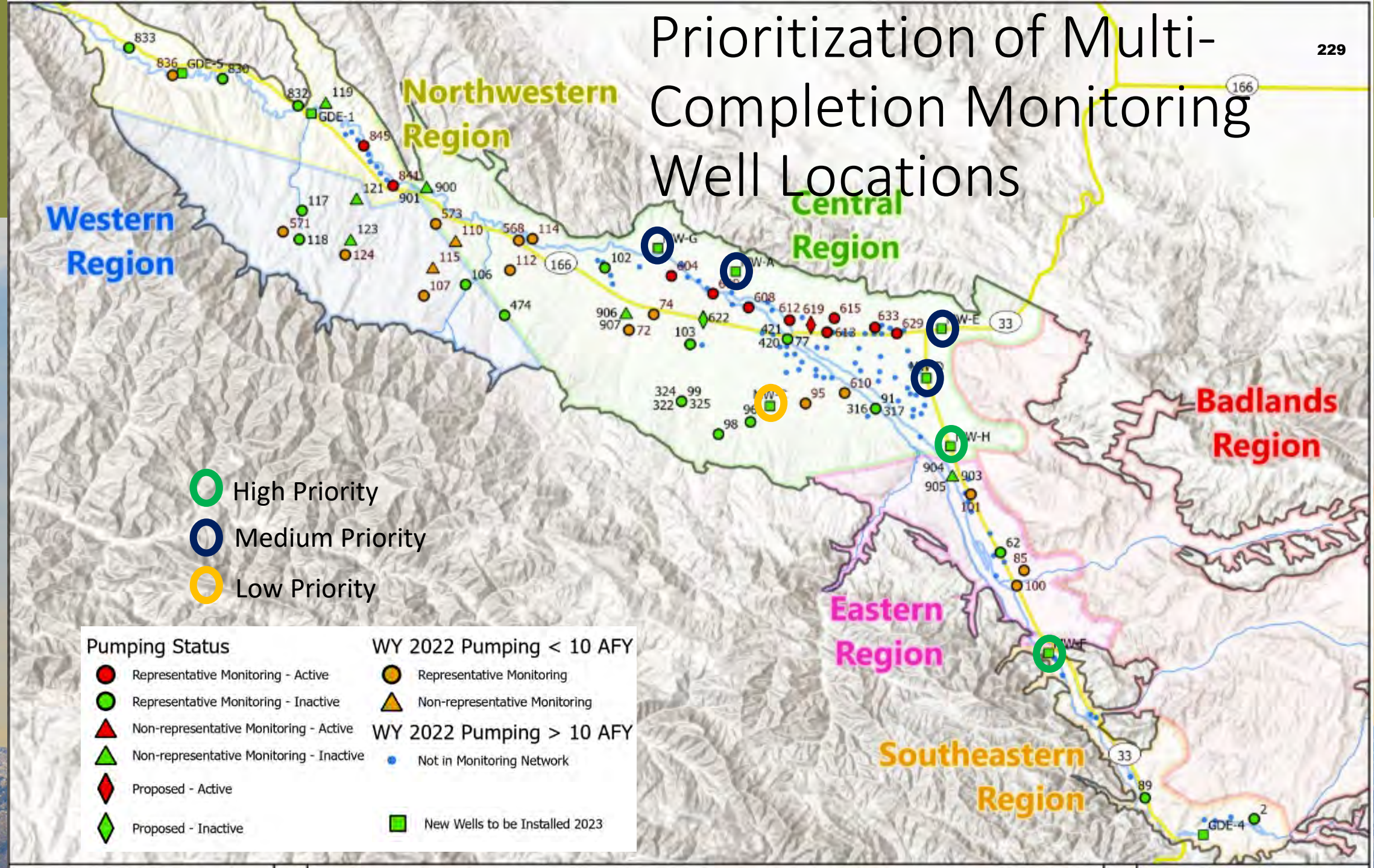
Model Update to Incorporate:

- *AEM*
- *River Channel Survey*
- *Updated pumping well locations*
- *GW lvl, streamflow and precip measurements*
- *Land use (Land IQ)*
- *Measured pumping data*

Status of Monitoring Well and Piezometer Installation

- Piezometer (GDE) Wells:
  - Wells have been constructed at all 3 locations (GDE-1, GDE-4 and GDE-5)
- Multi-Completion Nested Monitoring Wells:
  - Drilling and well construction at MW-F conducted from October 23 to November 30. Well screen intervals are 180-200 feet and 350-370 feet
  - Drilling and well construction at MW-C conducted from January 17 to February 28. Well screen interval is 500-520 feet.
  - Well and encroachment permits obtained for MW-D and MW-H. Drilling will begin at MW-H on February 29
  - Access agreements in place for MW-A, MW-E and MW-G. Well permits in progress

Prioritization of Multi-Completion Monitoring Well Locations



Plan and Prioritization for Multi-Completion Monitoring Wells

- The objective is to install at least 1 well at each of the 7 locations
  - Installation at 7 locations may be achievable within the budget by constructing 1 or 2 nested wells instead of 3 wells at most locations; this should be acceptable because of the deep depth to water at some locations
- Recommendation:

Location	Approximate Depth to Water (Spring 2022)	Recommended # of Completions
MW-A	400-600	2
MW-C	500-600	1
MW-D	600-650	2
MW-E	400-600	2
MW-F	30-80	2
MW-G	400-600	2
MW-H	400-450	3

Approach for Groundwater-Fault Interaction Investigation

- Investigation will include the Russell and Santa Barbara Canyon (SBC) Faults
- Investigation Components Include:
  - Evaluate available groundwater data in investigation areas
  - Interpret AEM data and oil & gas geophysical logs, if available
  - Conduct surface geophysical surveys
  - Construct a new monitoring well near SBC Fault (i.e., MW-H with funding covered by current grant agreement)
  - Sample groundwater and conduct geochemical analyses
  - Groundwater flow calculations and modelling

Status of Planning for Groundwater-Fault Investigations

- Both transects for the Russell Fault approved by landowners. No permits required. Survey schedule is weather dependent
- Encroachment permit received from Caltrans for one transect for the Santa Barbara Canyon (SBC) Fault. Categorical exemption received from BLM for second transect for SBC Fault
- Survey of both transects for SBC Fault conducted February 13 to February 16. Data analysis beginning

TO: Standing Advisory Committee
Agenda Item No. 8c

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 29, 2024

SUBJECT: Update on January 2024 Groundwater Levels Conditions Report

Recommended Motion
None – information only.

Discussion
The quarterly Groundwater Levels Conditions Report for January 2024 is summarized as Attachment 1. The detailed report is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

8c. Update on Quarterly Groundwater Conditions Report

Brian Van Lienden

February 29, 2024

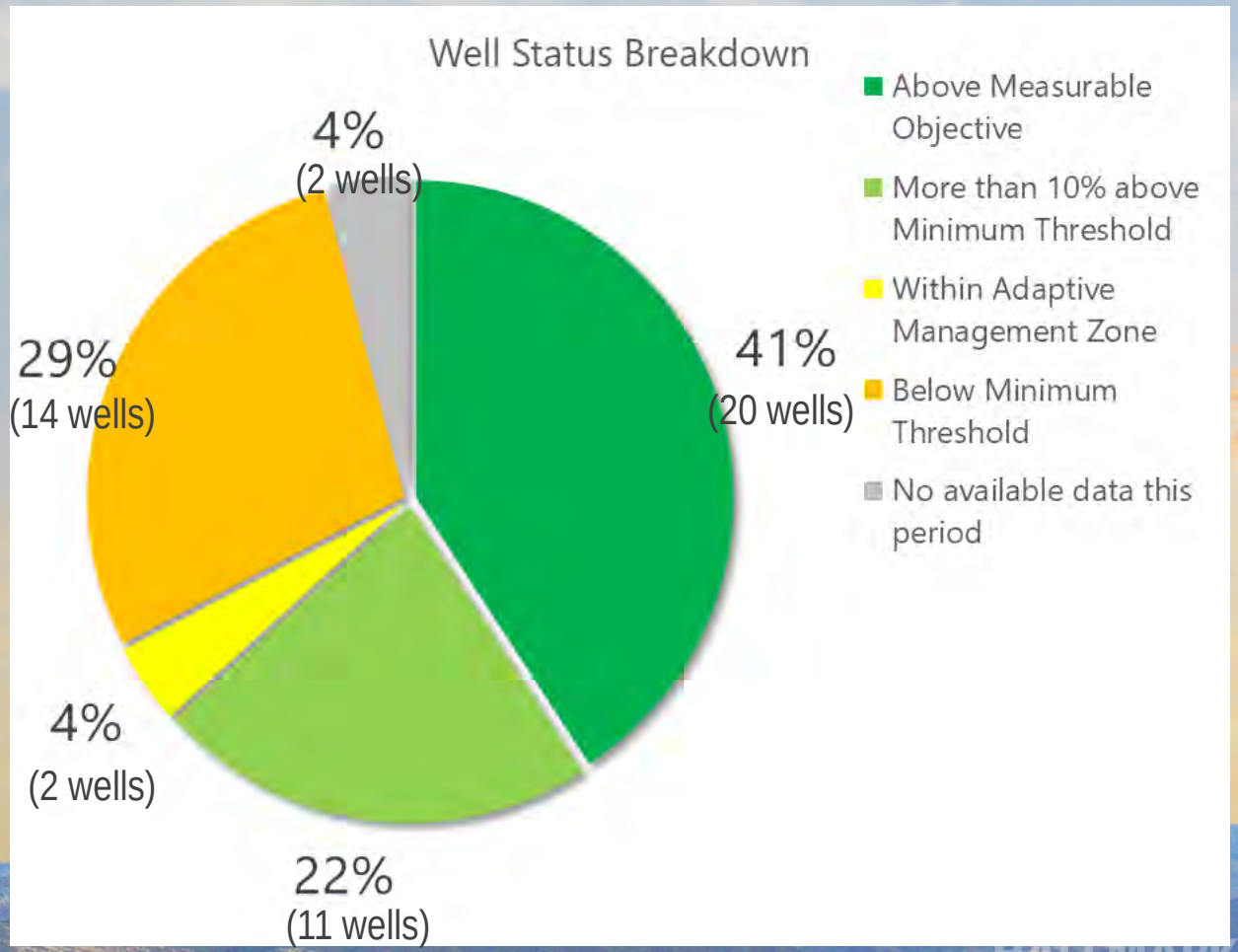
HALLMARK GROUP Woodard & Curran

Groundwater Levels Monitoring Network – Summary of Current Conditions

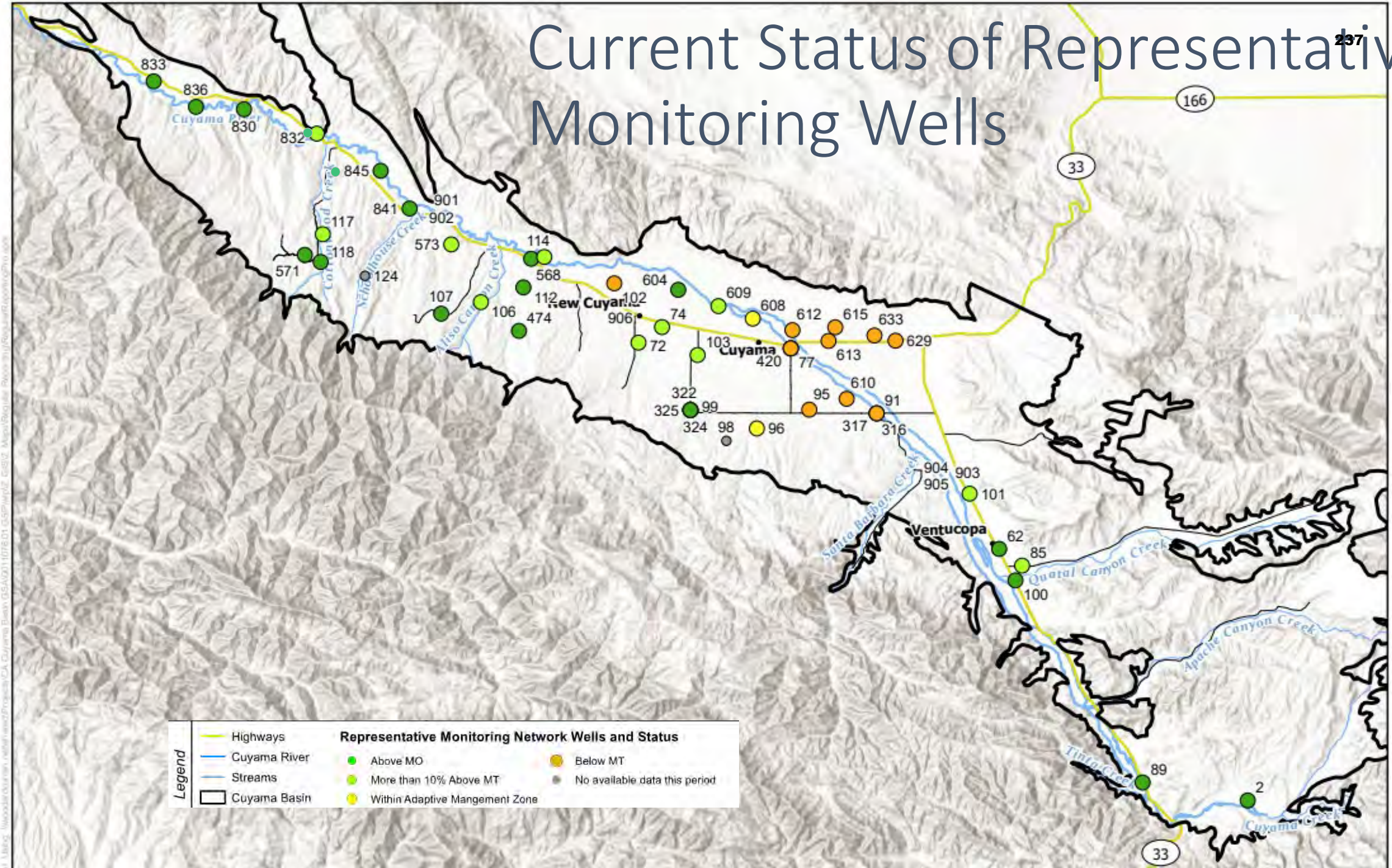
- Monitoring data from July 2023, October 2023, and January 2024 for representative wells is included in the Groundwater Conditions report
- 47 of 49 representative monitoring wells have levels data in at least one out of the previous 12 months
- 14 wells were below the minimum threshold based on latest measurement since October 2022

Summary of Groundwater Well Levels as Compared To Sustainability Criteria

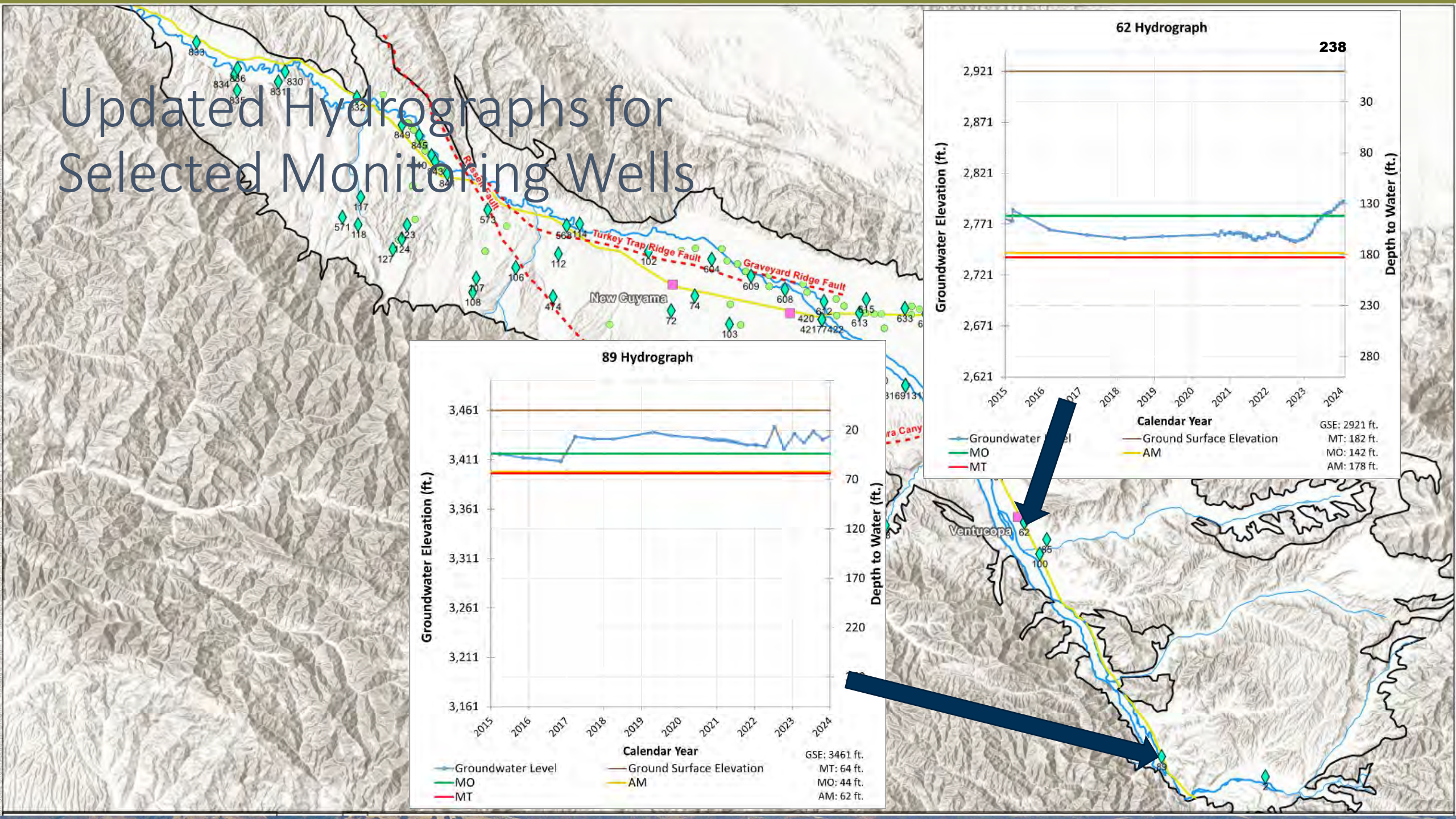
- 14 wells are currently below minimum threshold (MT)
  - 12 wells (22%) have been below the MT for at least 24 months
  - 1 well dropped below the MT this month
  - 3 wells rose above the MT this month



Current Status of Representative Monitoring Wells



Updated Hydrographs for Selected Monitoring Wells



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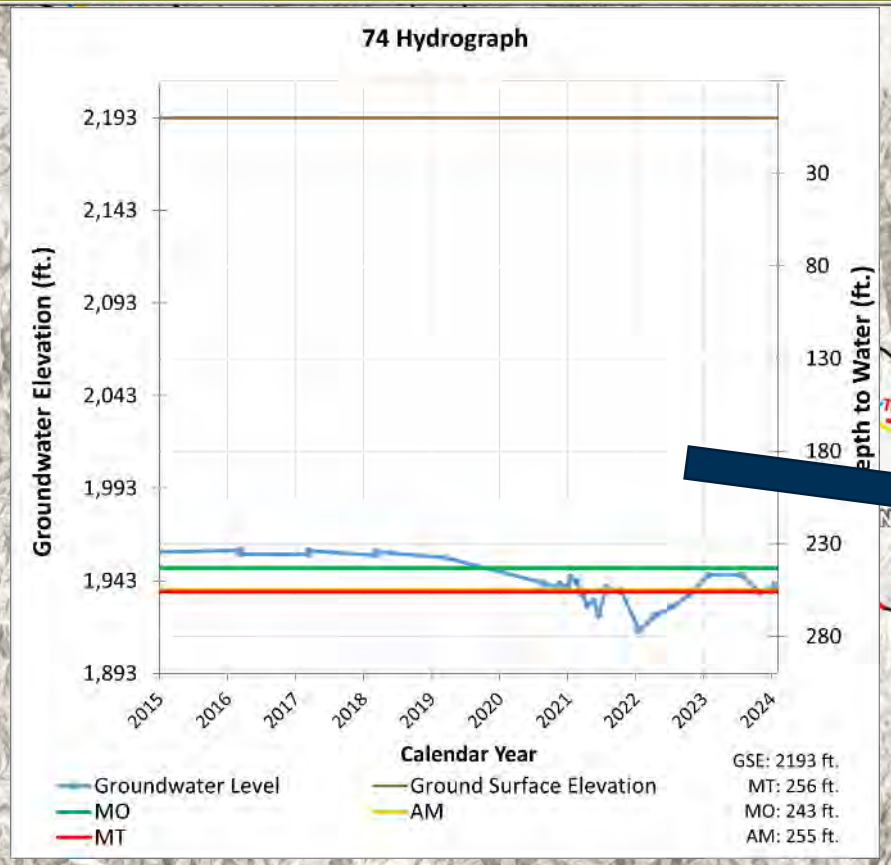

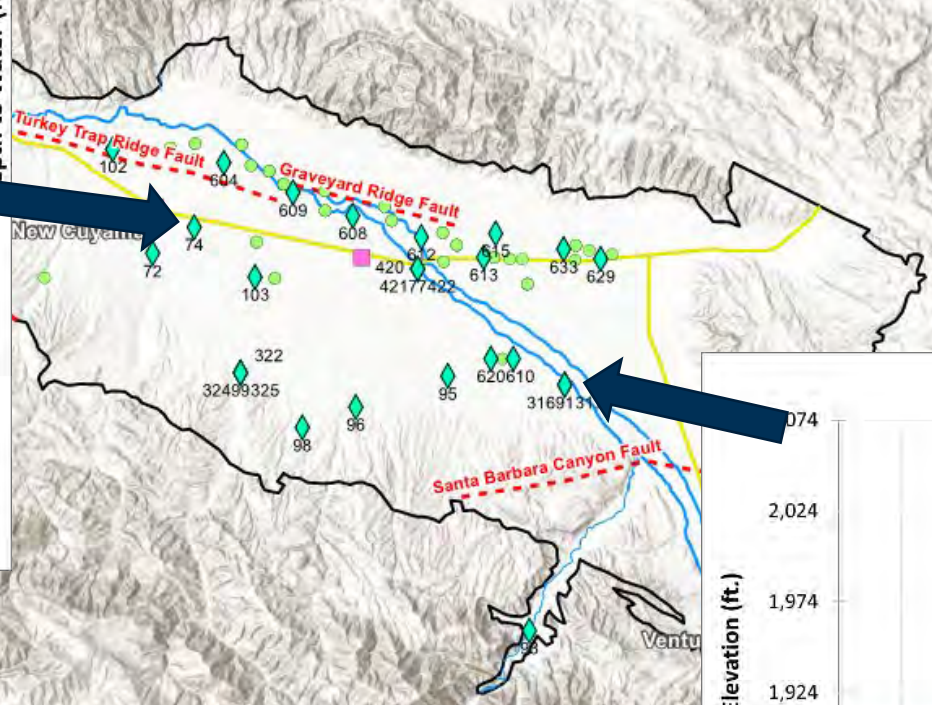

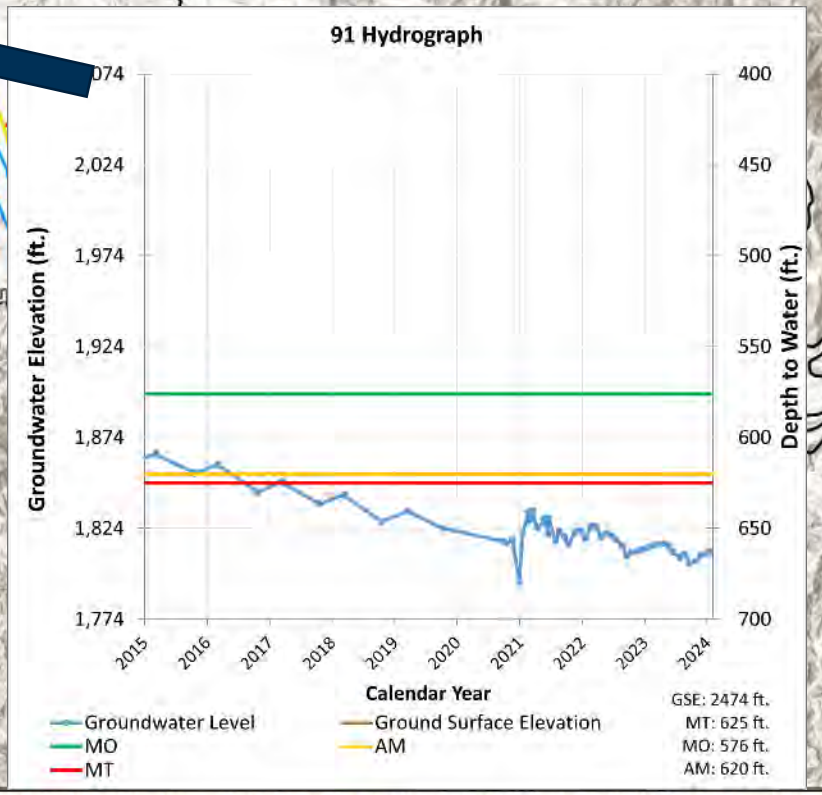

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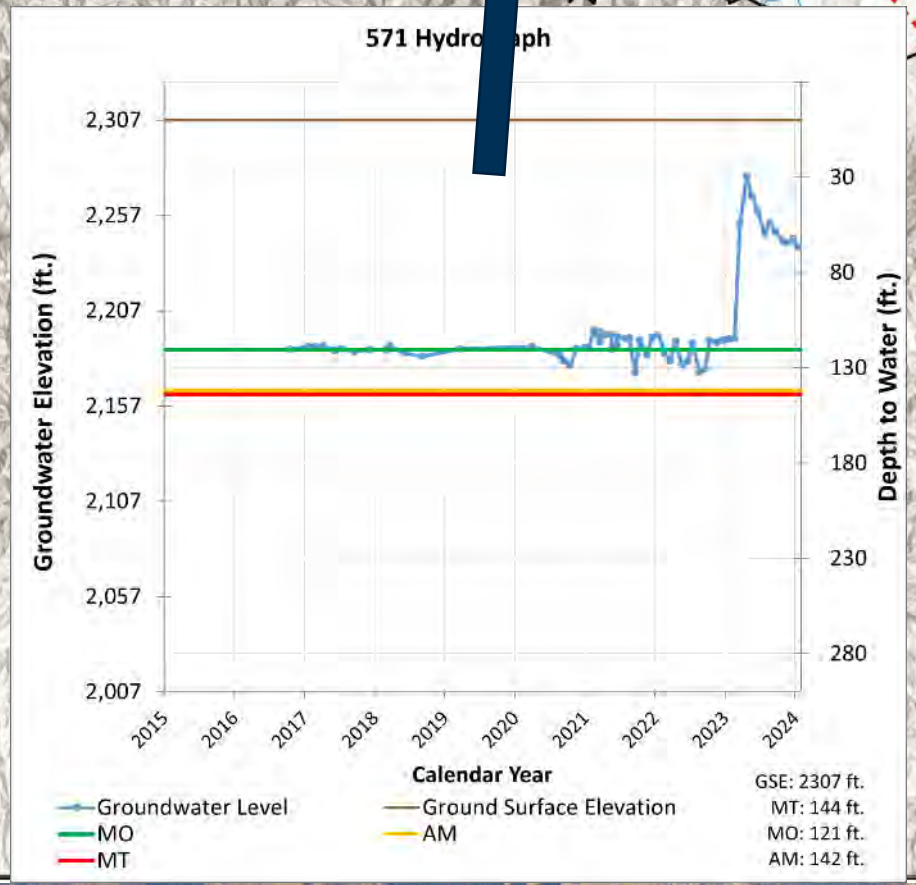
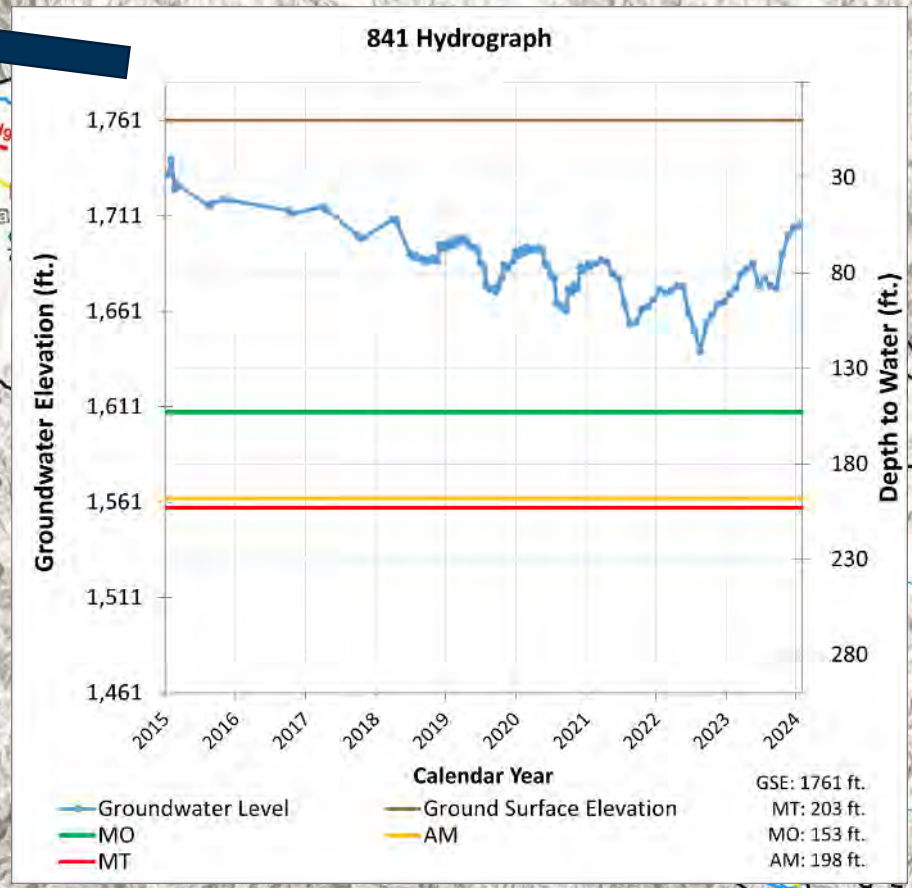




Attachment 2

GROUNDWATER CONDITIONS REPORT – CUYAMA VALLEY GROUNDWATER BASIN

January 2024

Woodard & Curran

801 T Street
Sacramento, CA
916.999.8700

woodardcurran.com

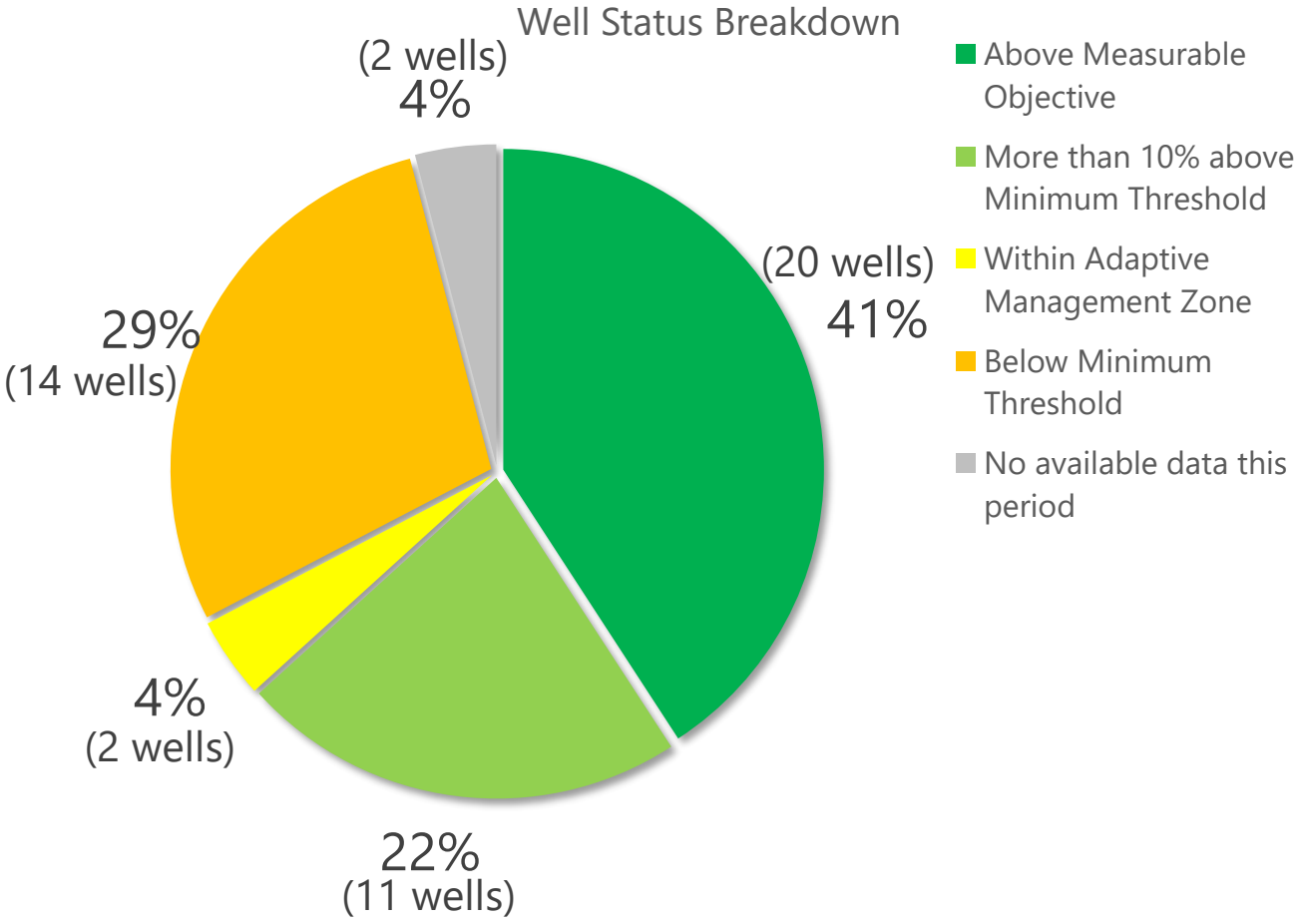
Cuyama Basin Groundwater Sustainability Agency

TABLE OF CONTENTS

1. INTRODUCTION

This report is intended to provide an update on the current groundwater level conditions in the Cuyama Valley Groundwater Basin. This work is completed by the Cuyama Basin Groundwater Sustainability Agency (CBGSA), in compliance with the Sustainable Groundwater Management Act (SGMA).

2. SUMMARY STATISTICS



There are currently 14 wells with groundwater levels exceeding minimum thresholds. As outlined in the GSP, undesirable results for the chronic lowering of groundwater levels occurs, "when 30 percent of representative monitoring wells… fall below their minimum groundwater elevation threshold for two consecutive years." (Cuyama GSP, pg. 3-2). Currently, less than 30% of representative monitoring wells (i.e. 15 wells) are below the minimum threshold.

3. CURRENT CONDITIONS

Table 1 includes the most recent groundwater level measurements taken in the Cuyama Basin from representative wells included in the Cuyama GSP Groundwater Level Monitoring Network, as well as the previous two measurements. Table 2 includes all of the wells and their current status in relation to the thresholds applied to each well. This information is also shown on Figure 1.

All measurements are also incorporated into the Cuyama DMS, which may be accessed at https://opti.woodardcurran.com/cuyama/login.php.

Table 1: Recent Groundwater Levels for Representative Monitoring Network

Well	Region	Jul-23	Oct-23	Jan-24	Last Year		Annual
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	Elevation Change (ft)
72	Central	2016	2017	2027	2036	Jan-23	-10
74	Central	1949	1940	1940	1949	Jan-23	-9
77	Central	1781	1793	1804	1808	Jan-23	-4
91	Central	1802	1800	1811	1807	Jan-23	4
95	Central	1837	1841	1850	-	-	-
96	Central	2269	2270	2273	2270	Jan-23	3
98	Central	-	-	-	-	-	-
99	Central	2181	2223	2216	2160	Jan-23	56
102	Central	1598	1758	-	-	-	-
103	Central	2035	2044	2046	2041	Jan-23	5
112	Central	2053	2053	2041	-	-	-
114	Central	-	-	1879	-	-	-
316	Central	1803	1799	1810	1806	Jan-23	4
317	Central	1805	1801	1811	-	-	-
322	Central	2174	2222	2216	2155	Jan-23	61
324	Central	2189	2221	2215	2181	Jan-23	33
325	Central	2202	2222	2215	2203	Jan-23	12
420	Central	1780	1792	1803	1807	Jan-23	-4
421	Central	1787	1793	1802	1806	Jan-23	-4
474	Central	2206	-	2228	2206	Jan-23	22

Well	Region	Jul-23	Oct-23	Jan-24	Last Year		Annual
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	Elevation Change (ft)
568	Central	1869	1867	1874	1828	Jan-23	46
604	Central	1669	1684	1655	1655	Jan-23	0
608	Central	1799	1790	-	-	-	-
609	Central	1727	1725	1721	1713	Jan-23	9
610	Central	1806	1805	1808	1812	Jan-23	-4
612	Central	1779	1788	1797	1792	Jan-23	5
613	Central	1780	1801	1799	1798	Jan-23	1
615	Central	1812	1809	1808	1816	Jan-23	-8
629	Central	1845	1848	1817	1819	Jan-23	-2
633	Central	1851	1798	1796	1805	Jan-23	-9
62	Eastern	2783	2789	2793	2761	Jan-23	33
85	Eastern	2848	2870	2883	2845	Jan-23	38
100	Eastern	2911	2909	2911	2850	Jan-23	62
101	Eastern	2634	2635	2653	-	-	-
841	Northwestern	1680	1692	1706	1672	Jan-23	34
845	Northwestern	1638	1637	1641	1644	Jan-23	-3
2	Southeastern	3702	3698	3697	-	-	-
89	Southeastern	3440	3432	3390	3438	Jan-23	-48
106	Western	2184	2185	2175	-	-	-
107	Western	2414	-	2422	-	-	-
117	Western	1947	1946	1947	-	-	-

Well	Region	Jul-23	Oct-23	Jan-24	Last Year		Annual
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	Elevation Change (ft)
118	Western	2216	2217	2211	2212	Jan-23	-1
124	Western	-	-	-	-	-	-
571	Western	2238	2235	2240	2183	Jan-23	57
573	Western	2015	2015	2010	-	-	-
830	Far-West Northwestern	1523	1522	1512	1510	Jan-23	2
832	Far-West Northwestern	1596	1595	1604	1589	Jan-23	15
833	Far-West Northwestern	1427	1434	1433	-	-	-
836	Far-West Northwestern	1459	1456	1479	1450	Jan-23	29

Table 2: Well Status Related to Thresholds

Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Date						
72	Central	139	1/17/2024	169	165	124	790	More than 10% above Minimum Threshold	No
74	Central	247	1/18/2024	256	255	243		More than 10% above Minimum Threshold	No
77	Central	481	1/18/2024	450	445	400	980	Below Minimum Threshold (41 months)	No
91	Central	670	1/18/2024	625	620	576	980	Below Minimum Threshold (41 months)	No
95	Central	606	1/18/2024	573	570	538	805	Below Minimum Threshold (41 months)	No
96	Central	333	1/18/2024	333	332	325	500	No data available this period (Within AMZ in Oct 2023)	No
98	Central	-	-	450	449	439	750	No available data this period	No
99	Central	289	1/18/2024	311	310	300	750	Above Measurable Objective	No
102	Central	-	-	235	231	197		No data available this period (Below MT in Oct 2023, 34 months)	No
103	Central	238	1/18/2024	290	285	235	1030	More than 10% above Minimum Threshold	No
112	Central	85	1/18/2024	87	87	85	441	Above Measurable Objective	No
114	Central	46	1/18/2024	47	47	45	58	More than 10% above Minimum Threshold	No
316	Central	671	1/18/2024	623	618	574	830	Below Minimum Threshold (41 months)	No
317	Central	669	1/18/2024	623	618	573	700	Below Minimum Threshold (41 months)	No

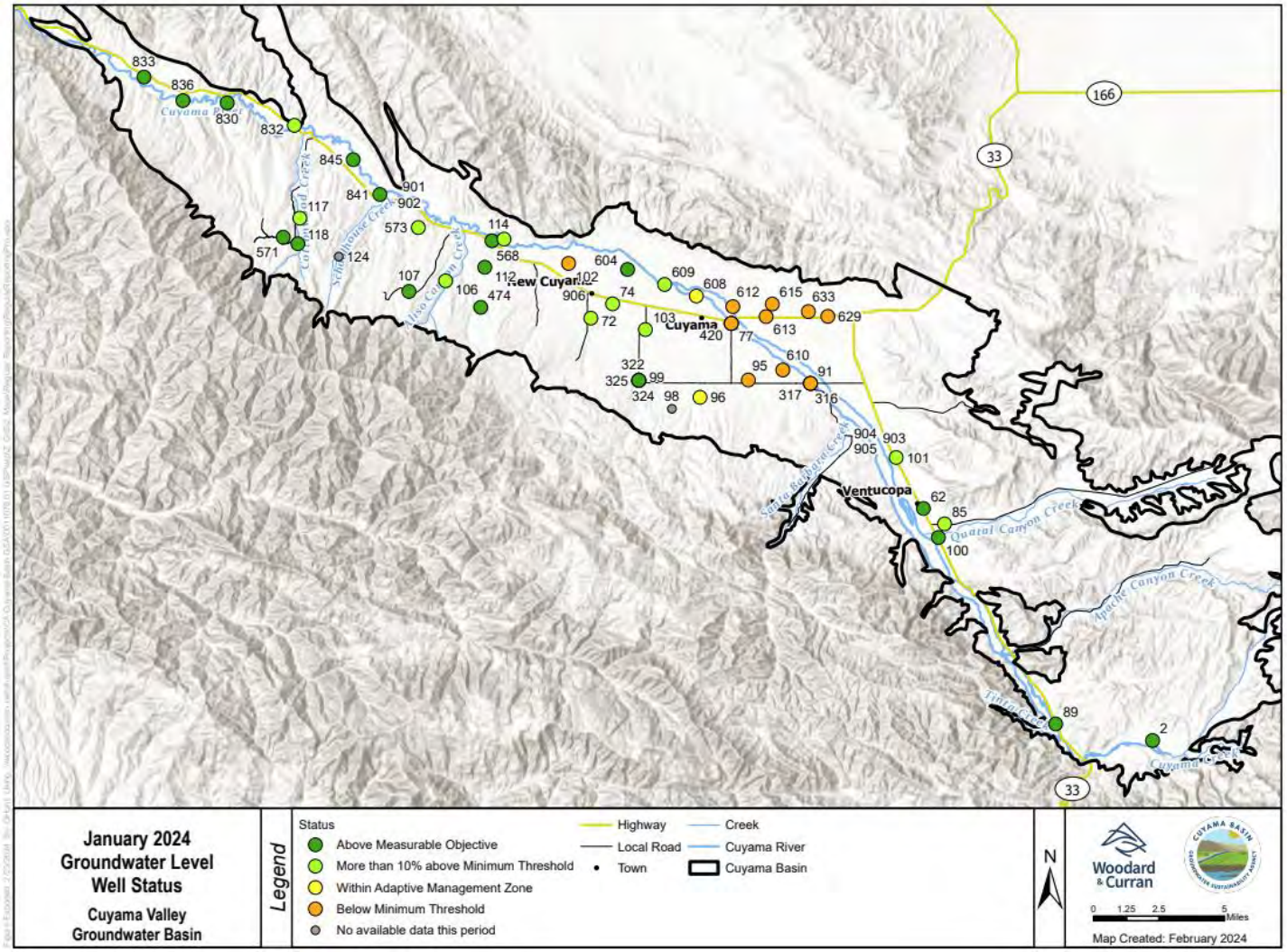
Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Date						
322	Central	290	1/18/2024	307	306	298	850	Above Measurable Objective	No
324	Central	291	1/18/2024	311	310	299	560	Above Measurable Objective	No
325	Central	291	1/18/2024	300	299	292	380	Above Measurable Objective	No
420	Central	482	1/18/2024	450	445	400	780	Below Minimum Threshold (41 months)	No
421	Central	483	1/18/2024	446	441	398	620	Below Minimum Threshold (41 months)	No
474	Central	134	1/18/2024	188	186	169	213	Above Measurable Objective	No
568	Central	34	1/17/2024	37	37	36	188	Above Measurable Objective	No
604	Central	461	1/18/2024	526	522	487	924	Above Measurable Objective	No
608	Central	-	-	436	433	407	745	Within Adaptive Management Zone	No
609	Central	436	1/18/2024	458	454	421	970	More than 10% above Minimum Threshold	No
610	Central	629	1/18/2024	621	618	591	780	Below Minimum Threshold (33 months)	No
612	Central	472	1/18/2024	463	461	440	1070	Below Minimum Threshold (25 months)	No
613	Central	526	1/18/2024	503	500	475	830	Below Minimum Threshold (39 months)	No
615	Central	513	1/18/2024	500	497	468	865	Below Minimum Threshold (38 months)	No
629	Central	561	1/18/2024	559	556	527	1000	Below Minimum Threshold (1 month)	No
633	Central	568	1/18/2024	547	542	493	1000	Below Minimum Threshold (4 months)	No

Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Date						
62	Eastern	124	1/17/2024	182	178	142	212	Above Measurable Objective	No
85	Eastern	164	1/17/2024	233	225	147	233	More than 10% above Minimum Threshold	No
100	Eastern	95	1/17/2024	181	175	125	284	Above Measurable Objective	No
101	Eastern	93	1/17/2024	111	108	81	200	More than 10% above Minimum Threshold	No
841	Northwestern	53	1/20/2024	203	198	153	600	Above Measurable Objective	No
845	Northwestern	68	1/20/2024	203	198	153	380	Above Measurable Objective	No
2	Southeastern	23	1/17/2024	72	70	55	73	Above Measurable Objective	No
89	Southeastern	4	1/17/2024	64	62	44	125	Above Measurable Objective	No
106	Western	142	1/18/2024	154	153	141	228	More than 10% above Minimum Threshold	No
107	Western	69	1/18/2024	91	89	72	200	Above Measurable Objective	No
117	Western	151	1/17/2024	160	159	151	212	More than 10% above Minimum Threshold	No
118	Western	51	1/17/2024	124	117	57	500	Above Measurable Objective	No
124	Western	-	-	73	71	57	161	No available data this period	No
571	Western	74	1/17/2024	144	142	121	280	Above Measurable Objective	No
573	Western	68	1/18/2024	118	113	68	404	More than 10% above Minimum Threshold	No
830	Far-West Northwestern	48	1/17/2024	59	59	56	77	Above Measurable Objective	No
832	Far-West Northwestern	33	1/17/2024	45	44	30	132	More than 10% above Minimum Threshold	No

Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Date						
833	Far-West Northwestern	21	1/18/2024	96	89	24	504	Above Measurable Objective	No
836	Far-West Northwestern	28	1/18/2024	79	75	36	325	Above Measurable Objective	No

Note: Wells only count towards the identification of undesirable results if the level measurement is below the minimum threshold for 24 consecutive months.

Figure 1: Groundwater Level Representative Wells and Status in January 2024



4. HYDROGRAPHS

The following hydrographs provide an overview of conditions in each of the six areas threshold regions identified in the GSP.

Figure 2: Southeast Region – Well 89

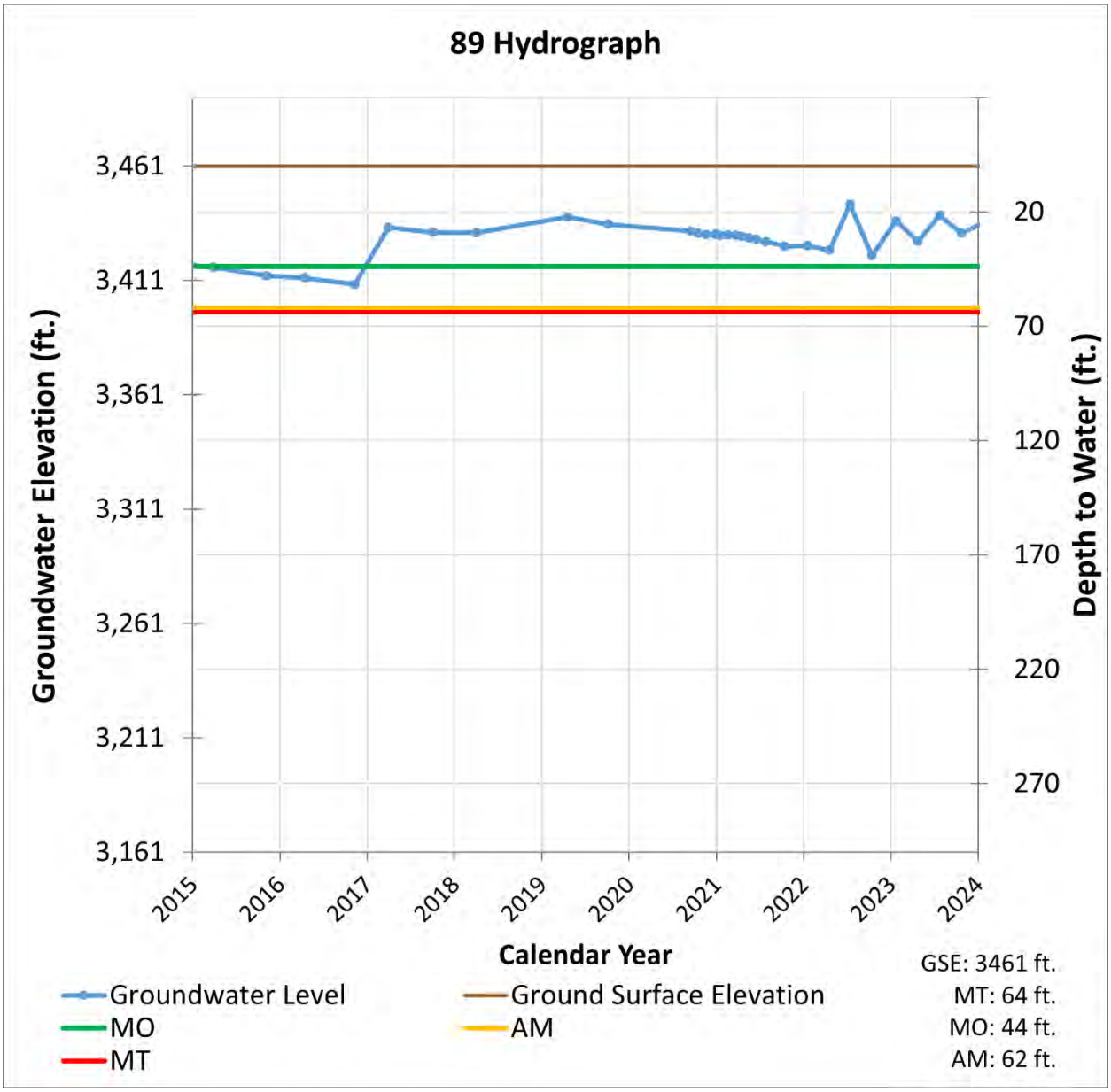


Figure 3: Eastern Region – Well 62

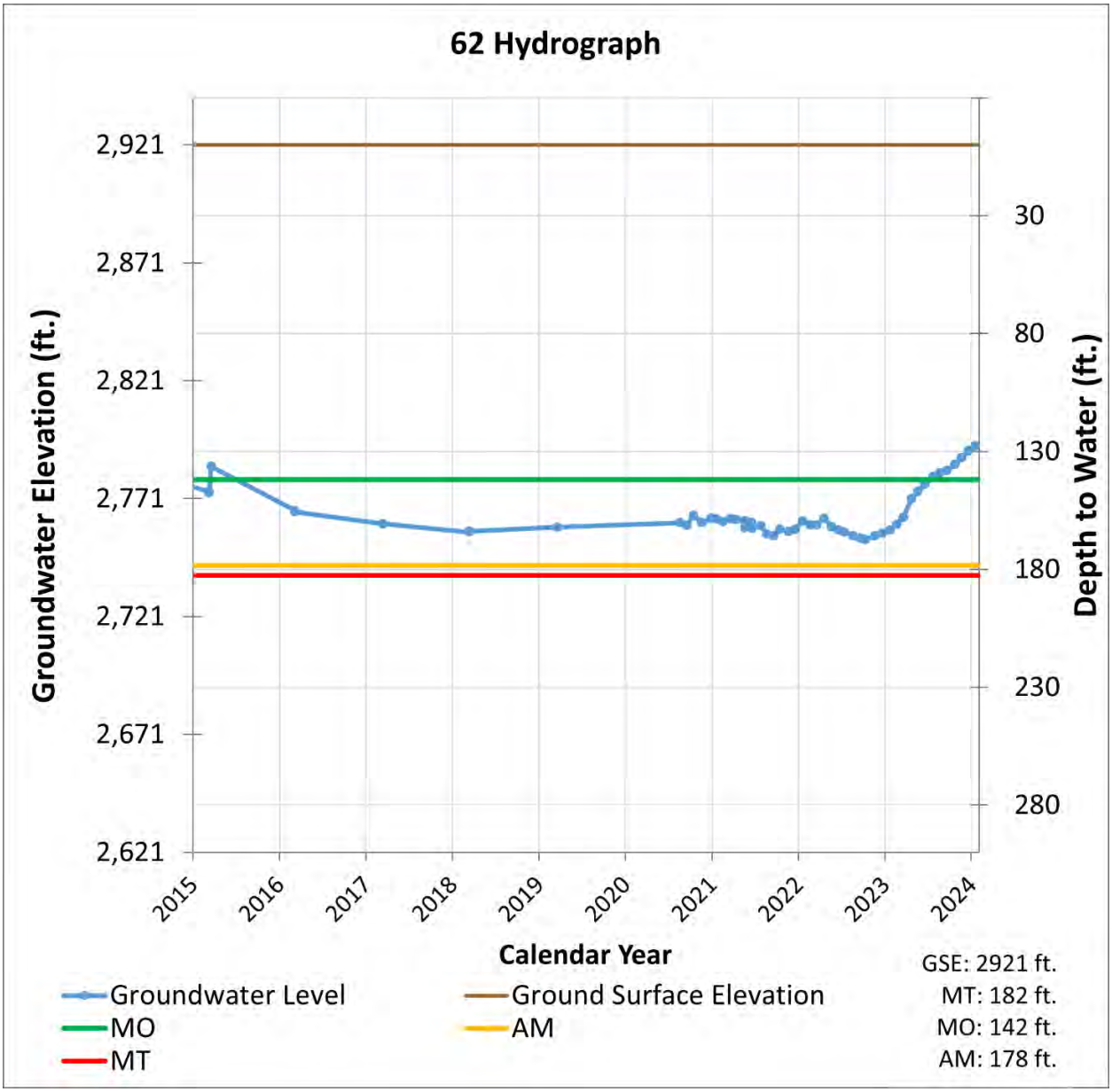


Figure 4: Central Region – Well 91

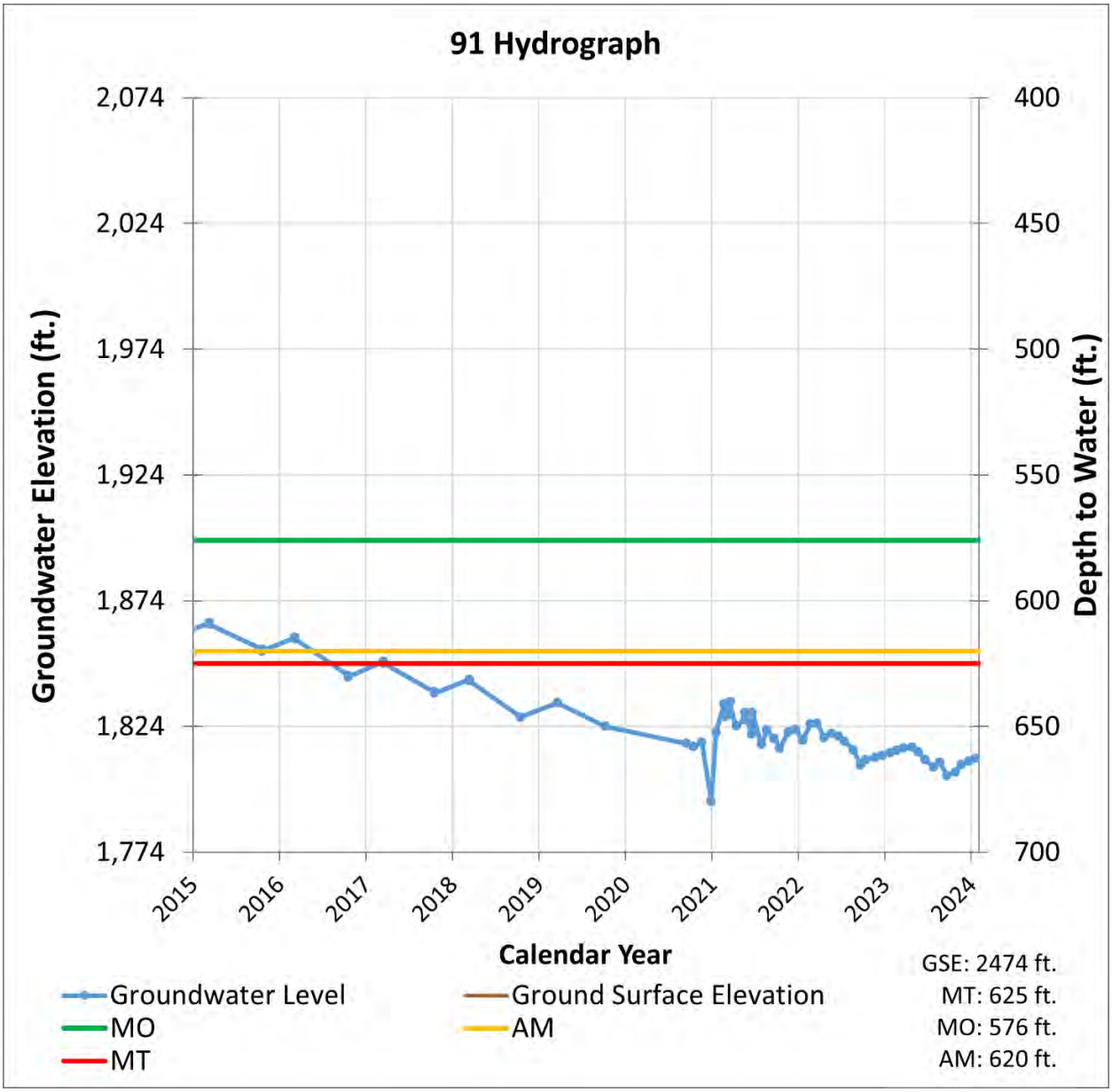


Figure 5: Central Region – Well 74

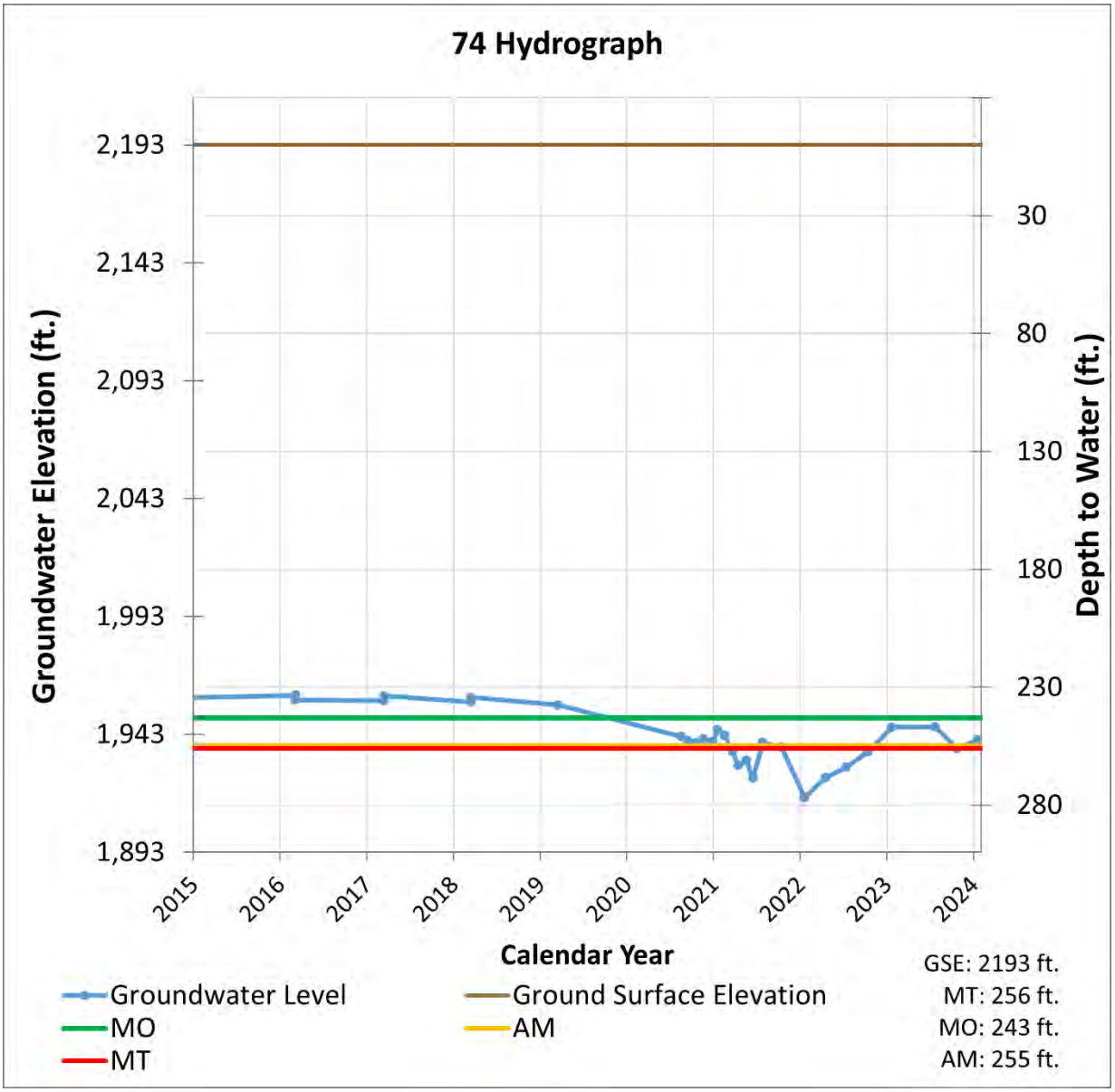


Figure 6: Western Region – Well 571

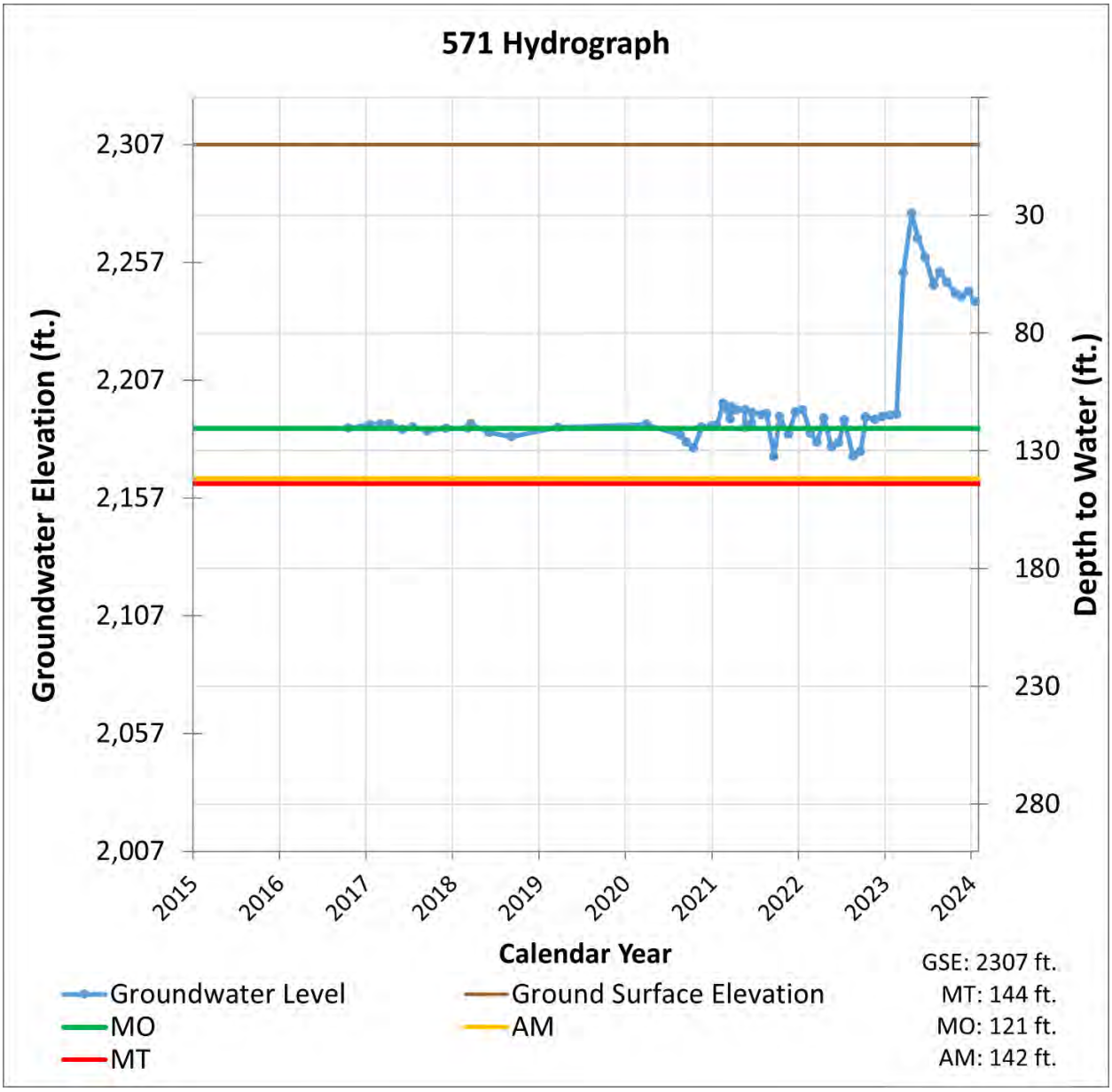
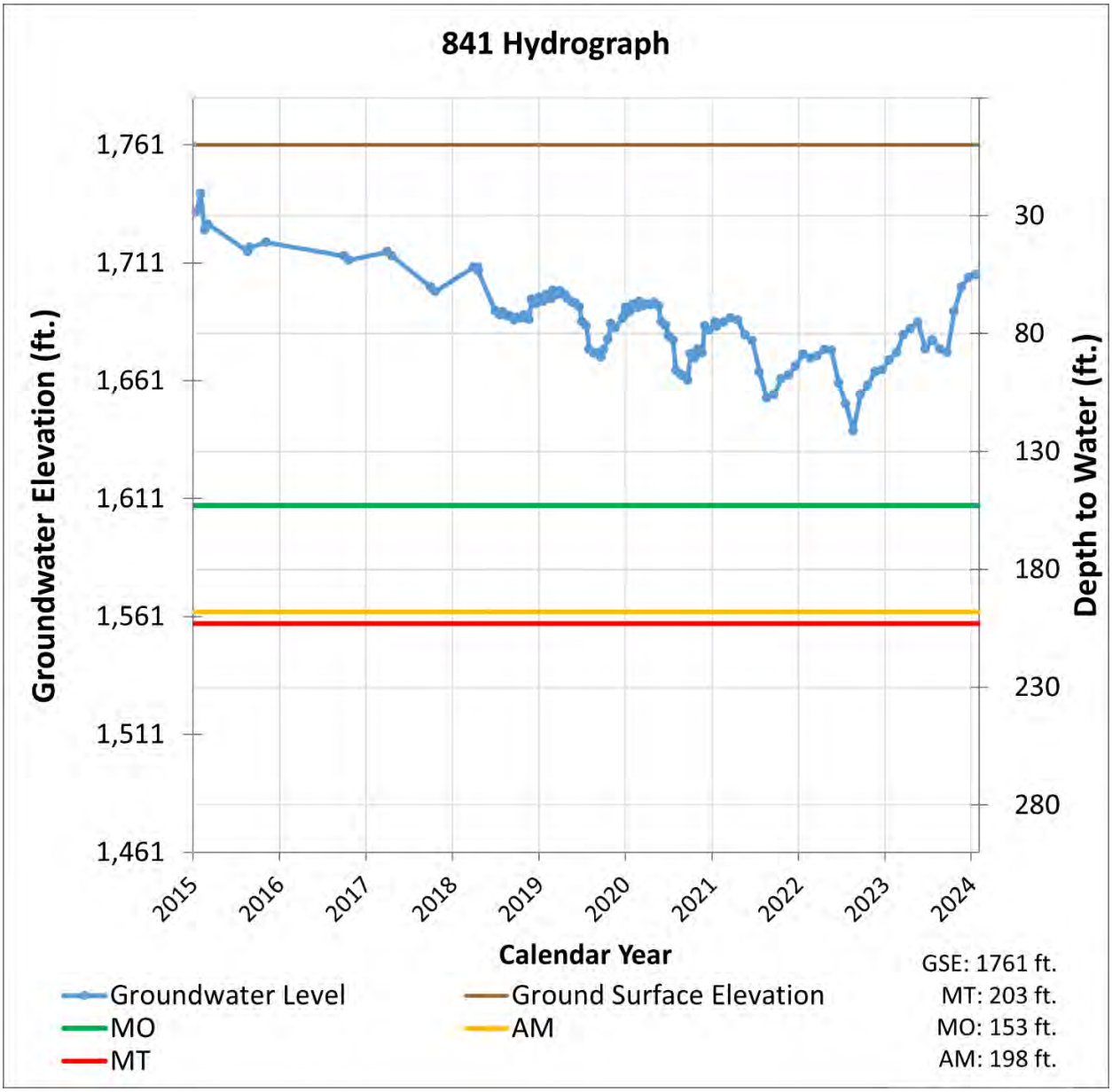


Figure 7: Northwestern Region – Well 841



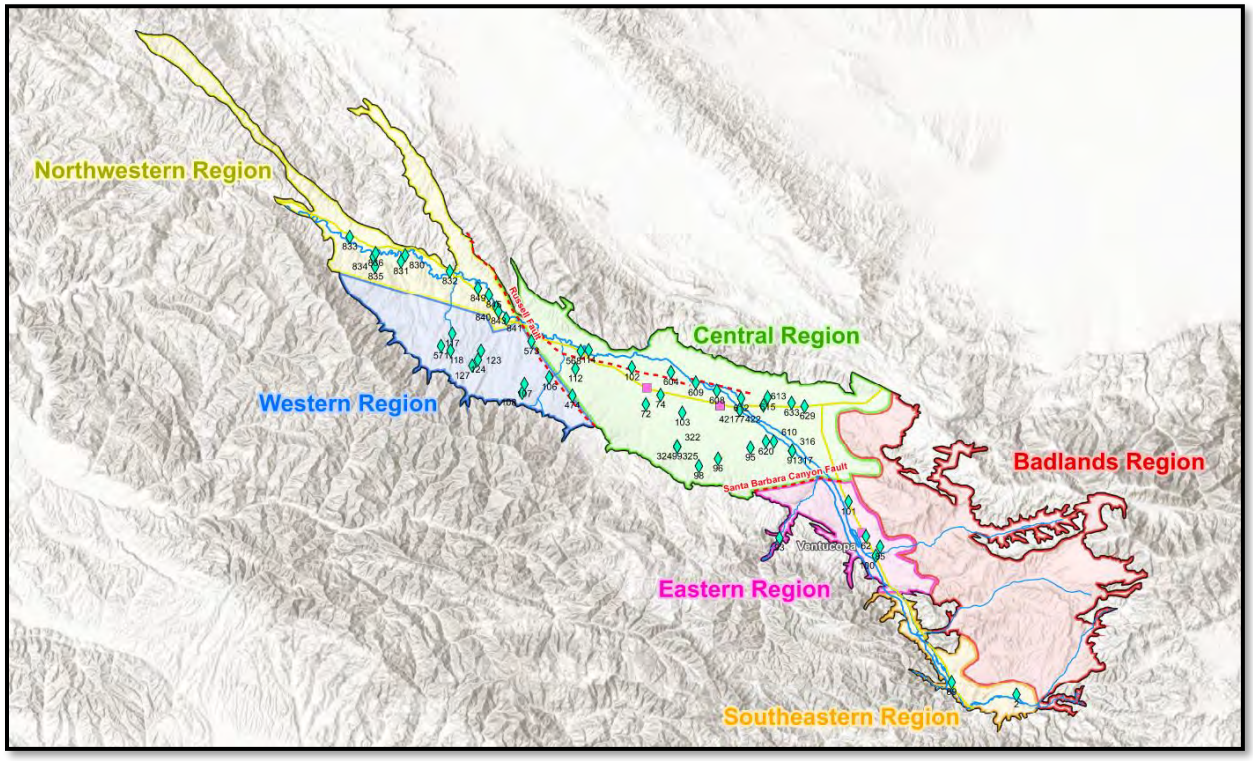


Figure 8: Threshold Regions in the Cuyama Groundwater Basin

5. MONITORING NETWORK UPDATES

As shown in Table 2, there are 4 wells with no measurement during the current monitoring period. These "no measurement codes" can have different causes as described below.

- Access agreements have not been established with the landowner:
    - Wells 98, 124
- Measurement was not possible at the time when the field technician went to take measurements:
    - Wells 102, 608

Woodard & Curran

woodardcurran.com

TO: Standing Advisory Committee
Agenda Item No. 9c

FROM: Taylor Blakslee, Hallmark Group

DATE: February 29, 2024

SUBJECT: Board of Directors Agenda Review

Recommended Motion
None – informational only.

Discussion
The Cuyama Basin Groundwater Sustainability Agency Board of Directors agenda for the March 6, 2024, Board of Directors meeting is provided as Attachment 1.

CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

BOARD OF DIRECTORS MEETING

Board of Directors

Cory Bantilan Chair, Santa Barbara County Water Agency
Matt Vickery Vice Chair, Cuyama Basin Water District
Arne Anselm Secretary, County of Ventura
Byron Albano Treasurer, Cuyama Basin Water District
Rick Burnes Cuyama Basin Water District
Jimmy Paulding County of San Luis Obispo
Zack Scrivner County of Kern
Das Williams Santa Barbara County Water Agency
Deborah Williams Cuyama Community Services District
Jane Wooster Cuyama Basin Water District
Derek Yurosek Cuyama Basin Water District

AGENDA

March 6, 2024

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Board of Directors to be held on Wednesday, March 6, 2024, at 2:00 PM at the **Cuyama Valley Family Resource Center 4689 CA-166, New Cuyama, CA 93254.** Participate via computer at: https://rb.gy/1nxwv or by going to Microsoft Teams, downloading the free application, then entering Meeting ID: 224 192 969 900 Passcode: jVHbgy or enter or telephonically at (469) 480-3918 Phone Conference ID: 956 062 525#.

Teleconference Locations:

4689 CA-166 New Cuyama, CA 93254			

The order in which agenda items are discussed may be changed to accommodate scheduling or other needs of the Board or Committee, the public, or meeting participants. Members of the public are encouraged to arrive at the commencement of the meeting to ensure that they are present for discussion of all items in which they are interested.

In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations, including auxiliary aids or services, to participate in this meeting, please contact Taylor Blakslee at (661) 477-3385 by 4:00 p.m. on the Friday prior to this meeting. The Cuyama Basin Groundwater Sustainability Agency reserves the right to limit each speaker to three (3) minutes per subject or topic.

1. Call to Order (Bantilan) (1 min)
2. Roll Call (Blakslee) (1 min)
3. Pledge of Allegiance (Bantilan) (1 min)
4. Meeting Protocols (Blakslee) (2 min)
5. Standing Advisory Committee Meeting Report (Kelly) (3 min)

CONSENT AGENDA

Items listed on the Consent Agenda are considered routine and non-controversial by staff and will be approved by one motion if no member of the Board or public wishes to comment or ask questions. If comment or discussion is desired by anyone, the item will be removed from the Consent Agenda and will be considered in the listed sequence with an opportunity for any member of the public to address the Board concerning the item before action is taken.

6. Approve Meeting Minutes (Bantilan) (1 min)
    a) Special Board December 22, 2023
    b) Special Board January 2, 2024

c) Regular Board January 10, 2024

7. Approve Payment of Bills for December 2023 and January 2024 (Blakslee) (1 min)

8. Approve Financial Reports for December 2023 and January 2024 (Blakslee) (1 min)

ACTION ITEMS

All action items require a simple majority vote by default (50% of the vote). Items that require a super majority vote (75% of the weighted total) will be noted as such at the end of the item.

9. Groundwater Sustainability Plan Implementation

   a) Discuss and Take Appropriate Action on Water Year 2023 Annual Report (Van Lienden) (10 min)

   b) Consider Fee Equity (Blakslee) (5 min) – *Verbal*

   c) Discuss and Take Appropriate Action on 2023 Central Management Area Allocation Use (Blakslee/Hughes) (45 min)

   d) Discuss and Take Appropriate Action on Land IQ Scope to Identify Unknown Pumpers and Improve the Groundwater Model (Blakslee) (10 min)

   e) Discuss and Take Appropriate Action on a 5-Year Agreement with USGS for Stream Gauge Operation and Maintenance (Blakslee) (5 min)

10. Groundwater Sustainability Plan Amendment Components

   a) Update on GSP Component Schedule (Blakslee/Van Lienden) (5 min)

   b) Discuss and Take Appropriate Action on Project and Management Action Options (Blakslee/Van Lienden) (30 min)

   c) Discuss and Take Appropriate Action on Sustainable Yield Methodology (Blakslee/Van Lienden) (30 min)

   d) Discuss and Take Appropriate Action on Basin-Wide Water Management *and* Allocation Program Components (Continued Discussion) (Blakslee/Van Lienden) (75 min)

   e) Direction on Remaining Public Workshops (Blakslee) (5 min)

REPORT ITEMS

11. Administrative Updates

   a) Report of the Executive Director (Blakslee) (5 min)

   b) Report of the General Counsel (Hughes) (5 min)

   c) Update on Fiscal Year 2024-2025 Budget Components (Blakslee) (2 min)

12. Technical Updates

   a) Update on Groundwater Sustainability Plan Activities (Van Lienden) (2 min)

   b) Update on Grant-Funded Projects (Van Lienden) (5 min)

   c) Update on January 2024 Groundwater Levels Conditions Report (Van Lienden) (5 min)

13. Report of Ad Hoc Committees (1 min)

14. Directors' Forum (1 min)

15. Public Comment for Items Not on the Agenda (5 min)

16. Correspondence (1 min)

CLOSED SESSION

17. Conference with Legal Counsel – Anticipation Litigation (15 min)

    Significant Exposure to Litigation Pursuant to Government Code section 54956.9(d)(2)

(a) Number of Potential Cases: One

18. Conference with Legal Counsel – Existing Litigation (15 min)

Pursuant to Government Code section 54956.9(d)(1)

(a) Bolthouse Land Company, LLC, et al v. All Persons Claiming a Right to Extract or Store Groundwater in the Cuyama Valley Groundwater Basin (BCV-21-101927)

19. Adjourn (6:53 p.m.)