CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

STANDING ADVISORY COMMITTEE MEETING

Committee Members

Brenton Kelly (Chair)	Jake Furstenfeld	Roberta Jaffe
Brad DeBranch (Vice Chair)	Jean Gaillard	*Vacant*
Louise Draucker	Joe Haslett	*Vacant*

AGENDA

FEBRUARY 24, 2022

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee meeting to be held on Thursday, February 24, 2022, at 5:00 PM. Participate via computer at: https://global.gotomeeting.com/join/203153453, or telephonically at (646) 749-3122, code: 203-153-453#.

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Adopt Resolution No. 21-111 Authorizing Use of Teleconferencing for Public Meetings Under AB 361
5. Update on SAC Membership
6. Approval of Minutes
7. Groundwater Sustainability Plan
    a. Review of Official DWR GSP Determination and Direction for Addressing DWR-Identified Issues by July 20, 2022
    b. Set Date for Public Hearing on GSP Amendment – *Verbal*
    c. Direction on Historic Pumping Analysis in the Central Management Area
    d. Direction on Central Management Area Policies
    e. Approval of Water Year 2021 Annual Report
    f. Direction on Adaptive Management Actions
    g. Update on Groundwater Sustainability Plan Activities
    h. Update on Model Progress
    i. Update on Monitoring Network Implementation
    j. Update on Quarterly Groundwater Conditions Report for January 2022
8. Groundwater Sustainability Agency
    a. Report of the Executive Director
    b. Report of the General Counsel
    c. Board of Directors Agenda Review
9. Items for Upcoming Sessions
10. Committee Forum
11. 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.
12. Correspondence
13. Adjourn

2022

Board Ad hoc List

CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Adaptive Management	Bantilan Shephard Vickery Yurosek
Aquifer Test	Bantilan Shephard Vickery Wooster
DWR / CBGSA Coordination	Bantilan Chounet Shephard Wooster Yurosek
Fiscal Year 2022-2023	Bantilan Chounet Vickery Williams Wooster
Grant Review Committee	Bantilan Compton Williams Wooster Yurosek
Management Area Policy	Bantilan Chounet Shephard Vickery Wooster
Meter Implementation	Shephard Vickery Wooster Yurosek
Model Refinement	Bantilan Shephard Vickery Yurosek

RESOLUTION 21-111

**A RESOLUTION OF
THE STANDING ADVISORY COMMITTEE OF THE
CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY
AUTHORIZING USE OF TELECONFERENCING FOR PUBLIC MEETINGS UNDER
AB 361**

WHEREAS, the Governor of the State of California (Governor) proclaimed a State of Emergency to exist as a result of the threat of COVID-19. (Governor's Proclamation of a State of Emergency (Mar. 4, 2020));

WHEREAS, the Governor's Executive Order No. N-25-20 (Mar. 12, 2020); Governor's Executive Order No. N-29-20 (Mar. 17, 2020); and Governor's Executive Order No. N-08-21 (Jun. 11, 2021) provided that local legislative bodies may hold public meetings via teleconferencing and make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body and waived the Brown Act provisions found in Government Code section 54953(b)(3) which require the physical presence of the members, the clerk, or other personnel of the body, or the public, as a condition of participation in, or quorum for, a public meeting, including the requirement that:

1. State and local bodies notice each teleconference location from which a member will be participating in a public meeting.
2. Each teleconference location be accessible to the public.
3. Members of the public may address the body at each teleconference location.
4. State and local bodies post agendas at all teleconference locations.
5. During teleconference meetings at least a quorum of the members of the local body participate from locations within the boundaries of the territory over which the local body exercises jurisdiction.

WHEREAS, the provisions of Governor's Executive Order No. N-25-20 (Mar. 12, 2020); Governor's Executive Order No. N-29-20 (Mar. 17, 2020); and Governor's Executive Order No. N-08-21 (Jun. 11, 2021) expired on September 30, 2021 and will no longer remain in effect thereafter;

WHEREAS, the Center for Disease Control is currently contending with the Delta Variant of the COVID-19 virus and anticipates the development of potential other strains which may further impede public agency operations and prolong the need for social distancing requirements; and

WHEREAS, recent legislation (AB 361) authorizes a local legislative body to use teleconferencing for a public meeting without complying with the Brown Act's teleconferencing quorum, meeting notice, and agenda requirements set forth in Government Code section 54953(b)(3), in any of the following circumstances:

1. The legislative body holds a meeting during a proclaimed state of emergency, and state or local officials have imposed or recommended measures to promote social distancing.

2. The legislative body holds a meeting during a proclaimed state of emergency for purposes of determining, by majority vote, whether as a result of the emergency, meeting in person would present imminent risks to the health and safety of attendees.

3. The legislative body holds a meeting during a proclaimed state of emergency and has determined by majority vote pursuant to 2 above that, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

NOW, THEREFORE, BE IT RESOLVED by the Standing Advisory Committee of the Cuyama Basin Groundwater Sustainability Agency as follows:

1. Determination of Imminent Health or Safety Risks. The Standing Advisory Committee hereby determines by majority vote that, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

2. Continued Implementation of AB 361. If the state of emergency remains in effect and meeting in person would present imminent risks to the health or safety of attendees, the Board of Directors shall, to continue meeting subject to the provisions set forth in AB 361 and the Brown Act, no later than 30 days after it adopts this Resolution and every 30 days thereafter, make the following findings by majority vote:

1. The Standing Advisory Committee has reconsidered the circumstances of the state of emergency; *and*

2. Either (1) the state of emergency continues to directly impact the ability of the members to meet safely in person; or (2) state or local officials impose or recommend measures to promote social distancing.

PASSED, APPROVED AND ADOPTED this 24th day of February 2022.

_____
Brenton Kelly, Chair

ATTEST:

_____

Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee Meeting

January 4, 2022

Draft Meetings Minutes

PRESENT:
Kelly, Brenton – Chair
DeBranch, Brad – Vice Chair
Furstenfeld, Jake
Gaillard, Jean
Haslett, Joe
Jaffe, Roberta
Beck, Jim – Executive Director
Brian Van Lienden, Woodard & Curran
Blakslee, Taylor – Project Manager
Dominguez, Alex – Legal Counsel

ABSENT:
Draucker, Louise

1. **Call to Order**
   Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) Vice Chair Brad DeBranch called the meeting to order at 5:04 p.m. and Hallmark Group Project Manager Taylor Blakslee provided direction on the meeting protocols in facilitating a remote meeting.

2. **Roll Call**
   Hallmark Group Project Manager Taylor Blakslee called roll of the Committee (shown above).

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

4. **Adopt Resolution No. 21-111 Authorizing Use of Teleconferencing for Public Meetings Under AB 361**
   CBGSA legal counsel Alex Dominguez presented a resolution authorizing the use of teleconferencing under assembly bill 361.

   MOTION
   Committee Member Haslett made a motion to adopt Resolution 21-111 authorizing use of teleconferencing for public meetings under AB 361. The motion was seconded by Committee Member Jaffee, a roll call vote was made, and the motion passed.

   AYES: DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly
   NOES: None
   ABSTAIN: None
   ABSENT: Draucker

5. Election of Officers

CBGSA Executive Director Jim Beck presented options to continue current slate of officer or consider other nominees. Current Chair Kelly and Vice Chair DeBranch said they were willing to continue to serve. Committee Member Furstenfeld commented that he appreciated Mr. Kelly and Mr. DeBranch's service.

MOTION

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

AYES: DeBranch, Furstenfeld, Gaillard, Jaffe, Kelly
NOES: None
ABSTAIN: None
ABSENT: Draucker, Haslett

6. Update on SAC Membership

Chair Kelly reported that there remain two vacancies for representatives of the Hispanic community and said if anyone knows someone that is interested in serving to let himself or Mr. Blakslee know.

7. Approval of Minutes

Chair Kelly opened the floor for comments on the October 28, 2021, CBGSA SAC meeting minutes.

MOTION

Committee Member DeBranch made a motion to adopt the October 28, 2021, CBGSA SAC meeting minutes. The motion was seconded by Committee Member Furstenfeld, a roll call vote was made, and the motion passed.

Cuyama Valley Family Resource Center Executive Director Lynn Carlisle asked when the California Department of Water Resources (DWR) would provide the aerial electromagnetic information and Mr. Van Lienden said DWR expects to provide this information in February or March 2022.

AYES: DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly
NOES: None
ABSTAIN: None
ABSENT: Draucker

8. Groundwater Sustainability Plan

a. Direction on Management Area Policies in the Central Management Area

Executive Director Jim Beck provided background on the development of policies in the Central Management Area. He reported that at the November 3, 2021, Board meeting, the Board directed staff to meet with an ad hoc to identify key policy points for discussion at the January 2022 Standing Advisory Committee (SAC) and Board meetings.

Mr. Beck outlined the following five (5) key policy points, staff options and Board ad hoc feedback for each option which are included in the SAC packet.

1. Allocation options

a. What is the basis for the allocation?

Chair Kelly asked if the Management Area boundary can be revisited during the 2025 Groundwater Sustainability Plan (GSP) update. Mr. Beck confirmed the CBGSA can update any components of the GSP that are appropriate during the 2025 update. Committee Member Furstenfeld commented that he does not believe it is fair to change the GSP because folks do not like the results. Committee Member Jaffe thanked staff for the work on this and stressed the importance of adhering to the GSP. Committee Member Haslett agreed with sticking with the GSP in implementing a reduction in the Central Management Area.

Stakeholder Casey Walsh asked if the CBGSA is taking into account the management of individual well levels and Mr. Beck replied that the CBGSA still has to manage the basin to the thresholds that were set for representative wells.

Stakeholder Kathleen March asked why legal counsel has not filed a stop motion, but Chair Kelly noted that we will discuss her comments related to the adjudication during the appropriate agenda Item No. 12.

Local stakeholder David Lewis said the Management Area could be influenced by pumping outside of that zone and said he believes it would be prudent to monitor the boundary of the Management Area to determine if changes should be made.

Committee Member DeBranch commented that he is in favor implementing an allocation in the entire basin.

A summary of the Committee's position on the allocation strategy is included below:

<u>Implement allocation in Central Management Area:</u>

- Furstenfeld
- Gaillard
- Haslett
- Jaffe
- Kelly

<u>Do not limit implementation of allocation to just Central Management Area:</u>

- DeBranch

<u>No feedback (absent):</u>

- Draucker

b. What is the sustainable yield for the Management Area?

Committee Member Jaffe asked if metered data will be used to refine the sustainable yield. Mr. Beck said we will have a full year of meter data staring in 2023, but since the pumping reductions need to begin in 2023, we will need to use the most recent water use data from 2021.

Committee Gaillard asked if just focusing on the Central Management Area will achieve sustainability in the basin. He noted that just reducing pumping in the Management Area will not likely achieve sustainability in the entire basin and Committee Member

DeBranch agreed with his comments.

Mr. Van Lienden provided an update on how the sustainable yield for the Management Area was determined and noted that some of the reduction in the model was from the Ventucopa Area which the Board deferred pumping reduction actions at this time.

Committee Member Jaffe said she does not want the CBGSA to forget about thresholds and said her understanding is that we are specifically managing the overdraft in the Central Management Area, but we need to continue managing potential new areas of overdraft in the entire basin.

Stakeholder David Lewis asked how many acres are in the Central Management Area and Mr. Blakslee reported that there are 24,621 acres in the Management Area and 241,695 total acres in the basin.

c. What is the sustainable yield allocation strategy for the Management Area?
Committee Member Brad DeBranch said that an allocation based on historic pumping makes the most sense. Committee Member Jaffe said it is important to understand what type of irrigation systems are being used. She noted that historic pumping is what got us into the overdraft situation we are in, and Committee Member Furstenfeld agreed with this. Committee Member Haslett said he does not think there is a right answer, but we need to focus on the model and the glidepath set in the GSP. He said an acreage basis likely makes the most sense. Committee Member DeBranch asked why folks would be opposed to an allocation based on historic pumping if the required reduction is achieved in the Management Area.

David Lewis said he has 40 acres of pistachios and has observed a large amount of water use occurring in the Central Management Area and said basing the allocation on historic use is negatively impacting folks like him.

Mr. Walsh said he believes that an allocation based on acreage makes more sense to him.

Chair Kelly noted that several Committee members did not support an allocation based on historic use except for one ad hoc member and several expressed support for an acreage-based allocation.

2. Funding options

a. How can the CBGSA fund implementation of the pumping reductions in the Management Area?
Several comments were made that adding an additional fee under a Prop. 218 could be prohibitive for landowners. Chair Kelly asked staff if a Prop. 218 would be basin-wide, or just implemented in the Central Management Area. Staff confirmed that a Prop. 218 would occur just in the Central Management Area. Ms. March commented that she does not believe a Prop. 218 can pass and should not be placed on cattle ranchers.

b. How should the CBGSA handle current Management Area expenses prior to implementing a funding mechanism?
Mr. Beck commented that staff will be discussing this issue in more detail with the

Board.

3. **How to manage reduction**

    a. **How should the CBGSA administer the reduction of pumping in the Management Area?**
    Mr. Beck noted the ad hoc did not provide specific feedback on this item and it will be discussed in more detail with the Board.

4. **Increased water usage outside and inside Management Area**

    a. **How should the CBGSA handle potential increases of water use inside and outside the Management Area?**
    Mr. Beck commented that this item is something the Board will need to address at a future time or during the GSP update. Committee Member Jaffe commented that she recognizes this topic is outside the scope of current discussions but requested this be taken up at a subsequent meeting.

5. **Revised sustainable yield based on updated model**

    a. **Components of the Management Area need to be evaluated once the current modeling is complete in July 2022**
    Mr. Beck noted there are several other policy issues that will be brought up with the Board at a subsequent meeting.

b. Direction on Adaptive Management Actions

Mr. Van Lienden provided an overview of the technical analysis staff performed to evaluate if wells are in danger of going dry due to decreasing groundwater levels. Committee Member Jaffe asked who was on the Adaptive Management ad hoc and Mr. Blakslee replied that it is composed of Directors Bantilan, Shephard, Vickery, and Yurosek. Chair Kelly asked how many potential adaptive management options would require a GSP amendment and Mr. Van Lienden replied that options 2-4 would. Committee Member DeBranch noted his support for the Adaptive Management Ad hoc recommendation. Committee Member Haslett said the age of the well and the condition of the well should be considered in this analysis.

MOTION

Committee Member Haslett made a motion to adopt the Adaptive Management Ad hoc Committee's motion to perform additional data gathering and analysis to confirm condition of wells identified in the well status analysis: (1) Desktop analysis and phone outreach to be performed by W&C, (2) Field verification to be performed by Provost & Pritchard. The motion was seconded by Committee Member DeBranch, a roll call vote was made, and the motion passed.

Committee Member Jaffe asked if the motion could be amended that based on the findings, specific actions will be considered. She said she does not believe the motion is strong enough. However, the motion remained as it was made.

AYES: DeBranch, Gaillard, Haslett
NOES: Furstenfeld, Jaffe, Kelly

ABSTAIN: None
ABSENT: Draucker

c. Direction on Adding New Monitoring Wells
Mr. Beck provided an overview of an offer from Grimmway Farms to add a dedicated monitoring well to the CBGSA groundwater level monitoring network.

d. Approve DWR 2022 Grant Application Projects
Mr. Blakslee provided background on the development of eligible projects for the upcoming DWR implementation and planning grant and Mr. Van Lienden gave an overview of each item and its purpose.

MOTION
Committee Member DeBranch made a motion to approve the grant project list and authorize staff to work with an ad hoc to develop the application including the Spending Plan and scoring matrix and submit to DWR. The motion was seconded by Committee Member Jaffe, a roll call vote was made, and the motion passed.

AYES: DeBranch, Furstenfeld, Gaillard, Haslett, Jaffe, Kelly
NOES: None
ABSTAIN: None
ABSENT: Draucker

e. Update on Groundwater Sustainability Plan Activities
Mr. Van Lienden provided an updated on recent GSP activities which is included in the SAC packet.

f. Update on Water Year 2020-2021 Annual Report Development
Mr. Van Lienden provided an updated on 2020-2021 Annual Report development which is included in the SAC packet.

g. Update on Monitoring Network Implementation
Mr. Van Lienden provided an update on implementation activities which is summarized in the SAC packet. Several Committee Members noted that the difference in Cuyama River surface flows between the Ventucopa and Spanish Ranch gauge locations are due to the river flowing underneath the surface or possibly sinking down an abandoned well.

9. Groundwater Sustainability Agency

a. Report of the Executive Director
Mr. Beck let the SAC know that DWR may incorporate feedback on the CBGSA tech memo into their final GSP determination due January 28, 2022. He also reported that staff is following Santa Barbara COVID-19 safety protocols to determine when it is appropriate to meet in-person again.

b. Report of the General Counsel
Nothing to report.

c. Board of Directors Agenda Review
Mr. Beck provided an overview of the January 5, 2022, CBGSA Board of Directors meeting agenda which is provided in the SAC packet.

10. Items for Upcoming Sessions

Committee Member Jaffe requested the SAC agendize and discuss how the CBGSA handle potential increases of water use inside and outside the Management Area.

11. Committee Forum

Committee Member Jaffe noted that Northfork Vineyard applied for three reservoir permits and were required to submit an EIR which is currently open for public comment and interested parties can review that information online or contact her for more information.

12. Public Comment for Items Not on the Agenda

Mr. Blakslee reported that two emails were received from stakeholder attorney Kathleen March regarding the adjudication and are included in the SAC packet.

13. Correspondence

Mr. Blakslee reported that UCSC Professor Emeritus of Agroecology and Condor's Hope Ranch farmer Steve Gliessman submitted a letter regarding the development of groundwater markets/trading and is included in the SAC packet.

14. Adjourn

Chair Kelly adjourned the meeting at 9:20 p.m.

Minutes approved by the Standing Advisory Committee of the Cuyama Basin Groundwater Sustainability Agency the 24th day of February 2022.

STANDING ADVISORY COMMITTEE OF THE
CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Chair: _____

ATTEST:

Vice Chair: _____

TO: Standing Advisory Committee
Agenda Item No. 7a

FROM: Jim Beck / Joe Hughes / Brian Van Lienden

DATE: February 24, 2022

SUBJECT: Review of Official DWR GSP Determination and Direction for Addressing DWR-Identified Issues by July 20, 2022

Issue
Review of DWR GSP determination.

Recommended Motion
Board direction requested.

Discussion
The Cuyama Basin Groundwater Sustainability Agency (CBGSA) submitted its Groundwater Sustainability Plan (GSP) to the California Department of Water Resources (DWR) on January 28, 2020. On June 3, 2021, DWR provided a consultation letter outlining four (4) deficiencies with the GSP. The CBGSA Board developed a technical memo responding to DWR's consultation letter and submitted it to DWR on August 5, 2021. On January 21, 2022, DWR made an "incomplete" determination of the GSP in its official review of the GSP (provided as Attachment 2); however, this determination did not consider the technical memo. On February 10, 2022, the DWR/CBGSA Coordination ad hoc met with DWR for a consultation meeting to review the technical memo submitted to DWR in August 2021 and a summary of DWR's feedback for each deficiency is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Review of Official DWR GSP Determination and Direction for Addressing DWR-Identified Issues by July 20, 2022

Jim Beck / Joe Hughes / Van Lienden

February 24, 2022

Official DWR GSP Determination

- **January 28, 2020:** Cuyama Basin GSP submitted to DWR
- **June 3, 2021:** DWR Consultation Letter
  - Four (4) deficiencies identified
- **November 5, 2021:** GSA tech memo submitted to DWR
- **January 21, 2022:** Official DWR GSP determination
  - "Incomplete"
  - Same information from June 3rd consultation letter
  - Did not account for tech memo in review of GSP
- **February 10, 2022:** Consultation with DWR to review tech memo

February 10, 2022, Consultation Meeting

- Review of technical memo
- 2-hour meeting
- Meeting attendees:

DWR	Cuyama Basin GSA
Tim Godwin, Supervising Engineering Geologist, Sustainable Groundwater Management Office	**Derek Yurosek**, Board Chair
Tim Ross, Supervising Engineering Geologist, Southern Region Office	**Cory Bantilan**, Director
Craig Altare, Supervising Engineer Geologist, Groundwater Sustainability Plan Review Section Chief	**Paul Chounet**, Director
Jack Tung, Senior Engineering Geologist, Southern Region Office	**Glenn Shephard**, Director
Anita Regmi, Engineering Geologist, Southern Region Office	**Jane Wooster**, Director
Hanspeter Walter, Attorney, Office of the General Counsel	**Jim Beck**, Executive Director
	Joe Hughes, Legal Counsel
	Alex Dominguez, Legal Counsel
	Brian Van Lienden, Technical Project Manager
	Taylor Blakslee, Assistant Executive Director

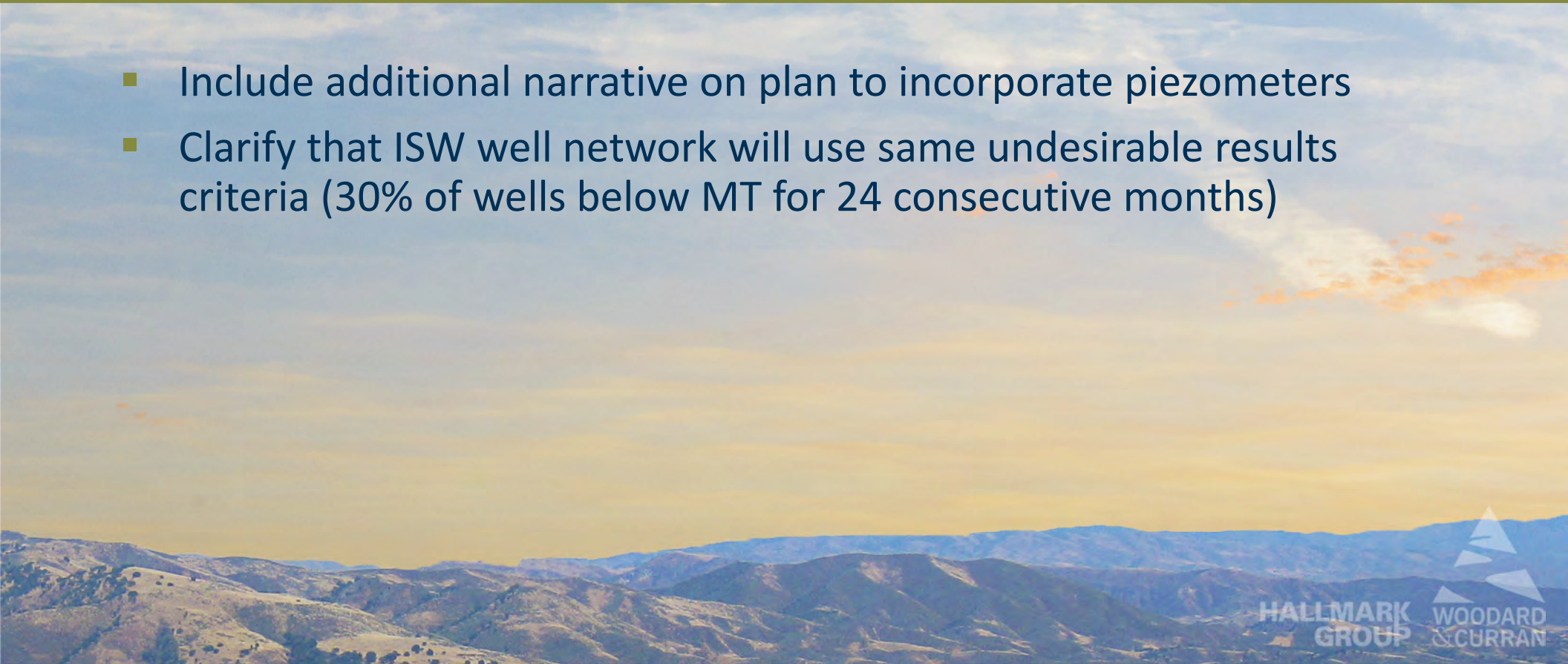
DWR Comments on Tech Memo

Deficiency 1: *The GSP lacks justification for, and effects associated with, the sustainable management criteria for groundwater levels*

- DWR requesting more narrative on the adaptive management process; wants to ensure the GSA is not waiting until month 24 to take action for wells below their minimum thresholds
- DWR requesting quantifiable impacts to seven wells potentially impacted by groundwater levels falling to minimum thresholds (impacts to x number of domestic connections, x cost for loss of irrigated farming, etc.)

DWR Comments on Tech Memo

Deficiency 2: *The GSP does not fully describe the use of groundwater levels as a proxy for depletion of interconnected surface water*



- Include additional narrative on plan to incorporate piezometers
- Clarify that ISW well network will use same undesirable results criteria (30% of wells below MT for 24 consecutive months)

DWR Comments on Tech Memo

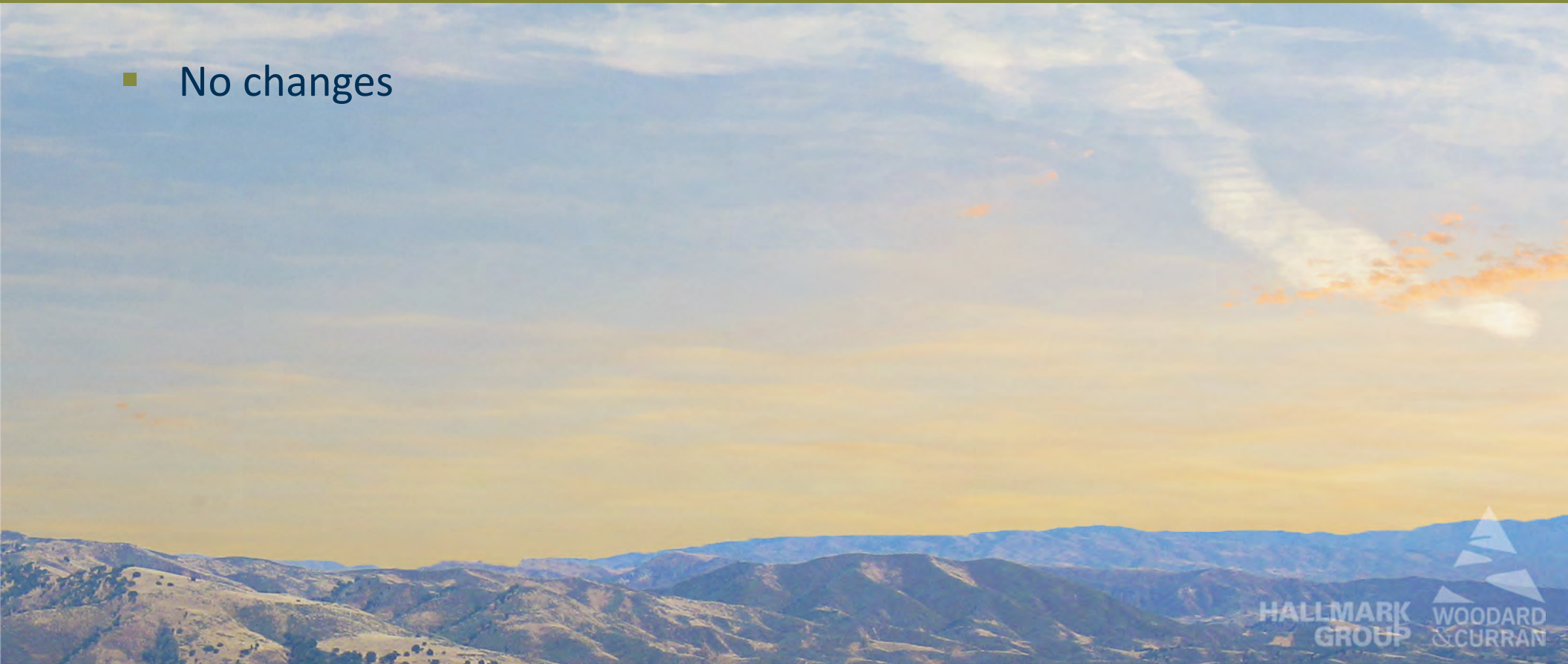
Deficiency 3: *The GSP does not fully address degraded water quality*

- DWR requesting clarity for ongoing data collection of basin water quality, particularly focusing on the constituents of concern; arsenic, nitrate and total dissolved solids (TDS)
- DWR requesting clarity on what conditions the GSA would establish sustainable management criteria for arsenic and nitrates
- DWR seeking clarification on CBGSA intent to use information being collected to develop appropriate management actions to address identified undesirable water quality conditions

DWR Comments on Tech Memo

Deficiency 4: *The GSP does not provide explanation for how overdraft will be mitigated in the basin*

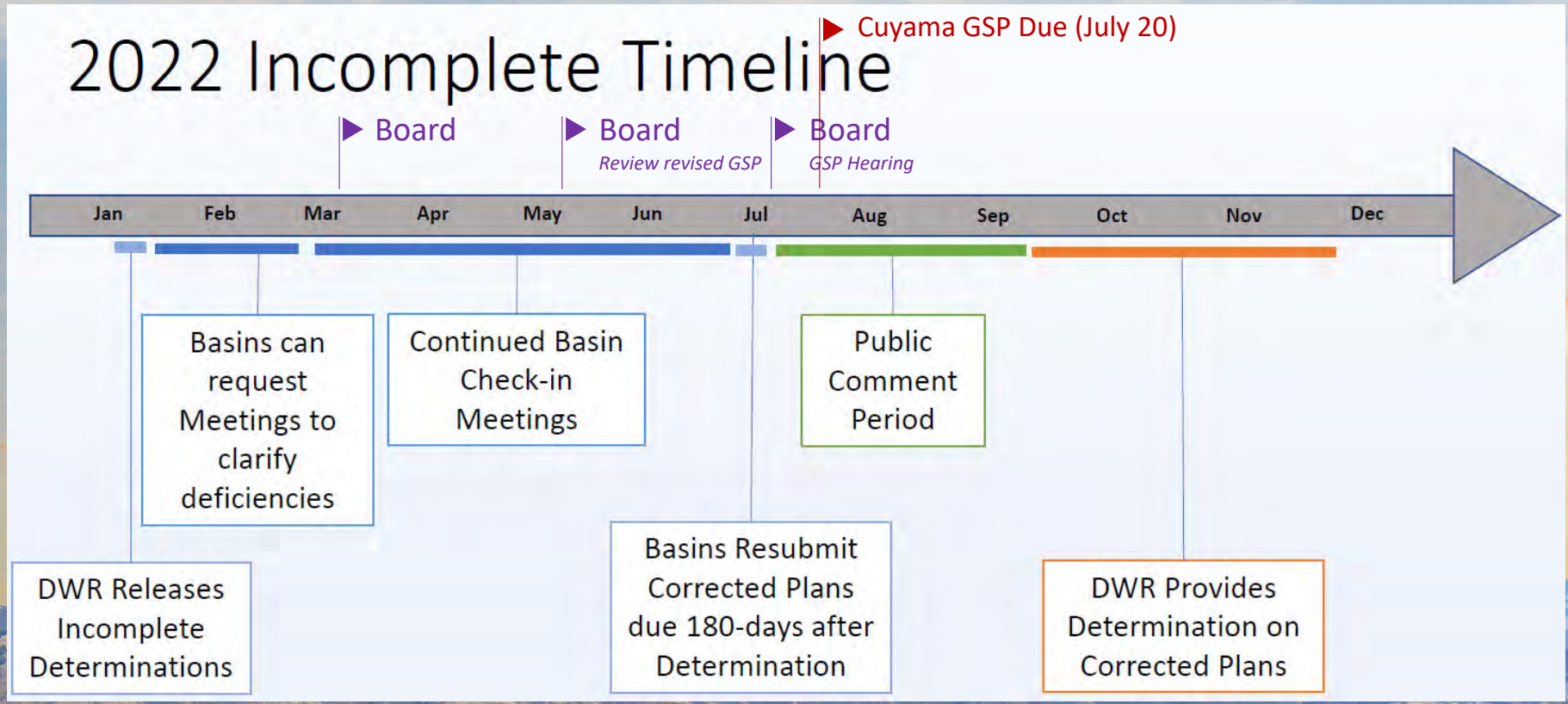
- No changes



GSP Resubmittal Process

DWR Guidance/Direction	Cuyama Basin GSA Proposed Plan
• The GSA's legal counsel should consider if re-adoption of the GSP is necessary • If re-adoption is needed, GSAs should follow processes laid out in SGMA and the Regulations, such as a 90-day advance notice to Cities and Counties can be done well in advance of finalizing amendments	• Provide 90-day notice and set hearing date for July 6, 2022 • Review revised GSP with Board and stakeholders at May 4, 2022, Board meeting • Hold public hearing to adopt revised GSP on July 6, 2022
• Materials to be submitted: o Clean and redline-strikeout version of revised GSP(s) o Updated GSP elements guide to identify those sections modified o Edits must be clear part of GSP and planned implementation o If re-adopted, provide those materials	• Submit revised GSP that will include: o Revised GSP sections with inserts from revised technical memo directly in GSP document o Entire revised technical memo as Appendix
• Upload revised GSP to portal	

Timeline


2022 Incomplete Timeline
Cuyama GSP Due (July 20)
Board
Board
Review revised GSP
Board
GSP Hearing
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Basins can request Meetings to clarify deficiencies
Continued Basin Check-in Meetings
Public Comment Period
DWR Releases Incomplete Determinations
Basins Resubmit Corrected Plans due 180-days after Determination
DWR Provides Determination on Corrected Plans

CALIFORNIA DEPARTMENT OF WATER RESOURCES

SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

715 P Street | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

January 21, 2022

Taylor Blakslee
Groundwater Sustainability Agency Project Coordinator
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309
tblakslee@hgcpm.com

RE: “Incomplete” Determination of the 2020 Cuyama Valley Basin Groundwater Sustainability Plan

Dear Taylor Blakslee,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP) submitted for the Cuyama Valley Basin (Basin) and has determined that the GSP is “Incomplete”. The Department based its determination on recommendations from the Staff Report, included as an enclosure to the attached Statement of Findings, which describes that the Cuyama Valley Basin GSP does not satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) nor substantially comply with the GSP Regulations. The Staff Report also provides corrective actions which the Department recommends to address the identified deficiencies.

The Basin’s Groundwater Sustainability Agency (GSA) has 180 days, the maximum allowed by GSP Regulations, to address the identified deficiencies. Where addressing the deficiencies requires modification of the GSP, the GSA must adopt those modifications into the Basin’s GSP or otherwise demonstrate that those modifications are part of the GSP before resubmitting it to the Department for evaluation no later than July 20, 2022. The Department understands that much work has occurred to advance sustainable groundwater management since the GSA submitted the GSP in January 2020. To the extent to which those efforts are related or responsive to the Department’s identified deficiencies, we encourage you to document that as part of your resubmittal. The Department prepared a Frequently Asked Questions document to provide general information and guidance on the process of addressing deficiencies in an “Incomplete” Determination.

Department staff will work expeditiously to review the revised components of your GSP resubmittal. If the revisions address the identified deficiencies, the Department will determine that the GSP is “Approved”. In that scenario, Department staff will identify additional recommended corrective actions that the GSA should address early in implementing their GSP (i.e., no later than the first required periodic evaluation). Among other items, those recommendations will include for the GSA to provide more detail on their plans and schedules to address data gaps. Those recommendations will also call for significantly expanded documentation of the plans and schedules to implement specific projects and management actions. Regardless of those recommended corrective actions, the Department expects the first periodic evaluations, required no later than January 2025 – one-quarter of the way through the

20-year implementation period – to document significant progress toward achieving sustainable groundwater management.

If the GSA cannot address the deficiencies identified in this letter by July 20, 2022, then the Department, after consultation with the State Water Resources Control Board, will determine the GSP to be "Inadequate". In that scenario, the State Water Resources Control Board may identify additional deficiencies that the GSA would need to address in the state intervention processes outlined in SGMA.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions about the Department's assessment, implementation of your GSP, or to arrange a meeting with the Department.

Thank You,

Paul Gosselin

Paul Gosselin
Deputy Director of Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Determination of Incomplete Status of the Cuyama Valley Basin Groundwater Sustainability Plan

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STATEMENT OF FINDINGS REGARDING THE DETERMINATION OF INCOMPLETE STATUS OF THE CUYAMA VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN

The Department of Water Resources (Department) is required to evaluate whether a submitted groundwater sustainability plan (GSP or Plan) conforms to specific requirements of the Sustainable Groundwater Management Act (SGMA or Act), is likely to achieve the sustainability goal for the basin covered by the Plan, and whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) The Department is directed to issue an assessment of the Plan within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department's decision regarding the Plan submitted by the Cuyama Basin Groundwater Sustainability Agency (GSA) for the Cuyama Valley Basin (No. 3-013).

Department management has reviewed the enclosed Staff Report, which recommends that the identified deficiencies should preclude approval of the GSP. Based on its review of the Staff Report, Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with, and hereby adopts, staff's recommendation and all the corrective actions provided. The Department thus deems the Plan incomplete based on the Staff Report and the findings contained herein.

A. The GSP lacks justification for the sustainable management criteria for groundwater levels, particularly the minimum thresholds and undesirable results, and an explanation of the effects of those criteria on the interests of beneficial uses and users of groundwater.

    1. The GSP does not discuss, or appear to address, the specific significant and unreasonable effects caused by chronic lowering of groundwater levels that would constitute undesirable results. In the absence of a specific explanation of those effects, and the conditions that would cause those effects, the GSP states that an undesirable result would occur if groundwater level minimum thresholds are exceeded in 30 percent of monitoring wells for two consecutive years. The Department cannot assess the reasonableness of the whether the quantitative, 30-percent definition would avoid undesirable results because the GSAs have not defined the specific conditions that would be significant and unreasonable.

    2. The GSP lacks explanation of the justification for setting its site-specific minimum thresholds and also lacks explanation of the anticipated effects

of groundwater conditions at those thresholds on the interests of the beneficial uses and users of groundwater.

B. The GSP does not reasonably describe how groundwater levels will be used as a proxy to monitor for, and avoid, undesirable results associated with depletion of interconnected surface water. The GSP uses levels established for the chronic lowering of groundwater levels sustainability indicator in representative wells across the entire basin, regardless of proximity to rivers and tributaries, as a proxy for depletion of interconnected surface water. The GSP does not demonstrate, with adequate evidence, that the groundwater level thresholds are a reasonable proxy for the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results.

C. The GSP does not appear to fully address degraded water quality. Public comments received by the Department suggest that the GSA did not consider certain publicly available water quality data. The Department finds that there is a reasonable likelihood that consideration of that data could lead the GSA to alter their assessment of groundwater quality, including the need to develop monitoring programs and sustainable management criteria.

D. The GSP does not provide sufficient explanation for how overdraft will be mitigated in the basin. Two primary management areas are identified by the GSA to continue experiencing declines in groundwater in storage, but the GSA only intends to reduce groundwater pumping in one of those management areas. The GSP does not explain how continued overdraft in the remaining management area would be mitigated through projects and actions. Additionally, an area of the basin that was not identified as a management area (the Northwestern threshold region) was, nonetheless, projected to experience more than 140 feet of groundwater level decline, relative to 2015, during implementation of the GSP. The GSP did not describe how the apparently allowable overdraft in this region would affect beneficial uses and users of groundwater and avoid undesirable results.

Based on the above, the GSP submitted by the GSA for the Cuyama Valley Basin is determined to be incomplete because the GSP does not satisfy the requirements of SGMA, nor does it substantially comply with the GSP Regulations. The corrective actions provided in the Staff Report are intended to address the deficiencies that, at this time, preclude approval. The GSA has up to 180 days to address the deficiencies outlined above and detailed in the Staff Report. Once the GSA resubmits its Plan, the Department will review the revised GSP to evaluate whether the deficiencies were adequately addressed. Should the GSA fail to take sufficient actions to correct the deficiencies identified by the Department in this assessment, the Department shall disapprove the Plan if, after consultation with the State Water Resources Control Board, the Department determines the Plan inadequate pursuant to 23 CCR § 355.2(e)(3)(C).

Signed:

Karla Nemeth, Director

Date: January 21, 2022

Enclosure: Groundwater Sustainability Plan Assessment Staff Report – Cuyama Valley Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment Staff Report

Groundwater Basin Name:	Cuyama Valley Basin (No. 3-013)
Submitting Agency:	Cuyama Basin Groundwater Sustainability Agency
Recommendation:	Incomplete
Date:	January 21, 2022

The Sustainable Groundwater Management Act (SGMA)[1] allows for any of the three following planning scenarios: a single groundwater sustainability plan (GSP) developed and implemented by a single groundwater sustainability agency (GSA); a single GSP developed and implemented by multiple GSAs; and multiple GSPs implemented by multiple GSAs and coordinated pursuant to a single coordination agreement.[2] Here, as presented in this staff report, a single GSP covering the entire basin was adopted and submitted to the Department of Water Resources (Department) for review.[3]

The Cuyama Basin GSA submitted the Cuyama Valley Basin Groundwater Sustainability Plan (GSP or Plan) to the Department for evaluation and assessment as required by SGMA and the GSP Regulations.[4] The GSP covers the entire Cuyama Valley Basin (Cuyama Basin or Basin) for the implementation of SGMA.

Evaluation and assessment by the Department is based on whether the adopted and submitted GSP, either individually or in coordination with other adopted and submitted GSPs, complies with SGMA and substantially complies with GSP Regulations. Department staff base their assessment on information submitted as part of an adopted GSP, public comments submitted to the Department, and other materials, data, and reports that are relevant to conducting a thorough assessment. Department staff have evaluated the Cuyama Basin GSP and have identified deficiencies that staff recommend should preclude its approval.[5] In addition, consistent with the GSP Regulations, Department staff have provided corrective actions[6] that the GSA should review while determining how and whether to address the deficiencies. The deficiencies and corrective actions are explained in greater detail in Section 3 of this staff report and are generally related to the need to justify the established sustainable management criteria and the

[1] Water Code § 10720 *et seq*.
[2] Water Code § 10727.
[3] Water Code §§ 10727(b)(1), 10733.4; 23 CCR § 355.2.
[4] 23 CCR § 350 *et seq*.
[5] 23 CCR §355.2(e)(2).
[6] 23 CCR §355.2(e)(2)(B).

effects of those criteria on the beneficial uses and users in the manner required by SGMA and the GSP Regulations.

This assessment includes four sections:

- **Section 1 – Evaluation Criteria:** Describes the legislative requirements and the Department's evaluation criteria.
- **Section 2 – Required Conditions:** Describes the submission requirements, Plan completeness, and basin coverage required for a GSP to be evaluated by the Department.
- **Section 3 – Plan Evaluation:** Provides a detailed assessment of deficiencies identified in the GSP which may be capable of being corrected by the GSA. Consistent with the GSP Regulations, Department staff have provided corrective actions for the GSA to address the deficiencies.
- **Section 4 – Staff Recommendation:** Provides the recommendation of Department staff regarding the Department's determination.

1 EVALUATION CRITERIA

The Department evaluates whether a GSP conforms to the statutory requirements of SGMA[7] and is likely to achieve the basin's sustainability goal.[8] To achieve the sustainability goal, the GSP must demonstrate that implementation of its groundwater sustainability program will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[9] Undesirable results are required to be defined quantitatively by the GSAs overlying a basin and occur when significant and unreasonable effects for any of the applicable sustainability indicators are caused by groundwater conditions occurring throughout the basin.6[10] The Department is also required to evaluate whether the GSP will adversely affect the ability of an adjacent basin to implement its groundwater sustainability program or achieve its sustainability goal.[11]

To evaluate a GSP, the Department must first determine a GSP was submitted by the statutory deadline,[12] is complete,[13] and covers the entire basin.[14] For those GSAs choosing to develop multiple GSPs, the GSPs must be coordinated pursuant to a single coordination agreement that covers the entire basin.[15] If these conditions are satisfied, the Department evaluates the GSP to determine whether it complies with SGMA and substantially complies with the GSP Regulations.[16] As stated in the GSP Regulations, "[s]ubstantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal."[17]

When evaluating whether implementation of the GSP is likely to achieve the sustainability goal for the basin, Department staff review the information provided and relied upon in the GSP for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.[18] The Department's review considers whether there is a reasonable relationship between the information provided by the GSA and the

[7] Water Code §§ 10727.2, 10727.4.
[8] Water Code §§ 10733(a).
[9] Water Code § 10721(v).
[10] 23 CCR § 354.26 *et seq*.
[11] Water Code § 10733(c).
[12] Water Code § 10720.7; 23 CCR § 355.4(a)(1).
[13] 23 CCR §§ 355.4(a)(2).
[14] 23 CCR § 355.4(a)(3).
[15] Water Code §§ 10727(b)(3), 10727.6; 23 CCR § 357.4.
[16] 23 CCR § 350 *et seq*.
[17] 23 CCR § 355.4(b).
[18] 23 CCR § 351(h).

assumptions and conclusions presented in the GSP, including whether the interests of the beneficial uses and users of groundwater in the basin have been considered; whether sustainable management criteria and projects and management actions described in the GSP are commensurate with the level of understanding of the basin setting; and whether those projects and management actions are feasible and likely to prevent undesirable results.[19] The Department also considers whether the GSA has the legal authority and financial resources necessary to implement the GSP.[20]

To the extent that overdraft is present in a basin, the Department evaluates whether the GSP provides a reasonable assessment of the overdraft and includes reasonable means to mitigate it.[21] When applicable, the Department will assess whether coordination agreements have been adopted by all relevant parties and satisfy the requirements of SGMA and the GSP Regulations.[22] The Department also considers whether the GSP provides reasonable measures and schedules to eliminate identified data gaps.[23] Lastly, the Department's review considers the comments submitted on the GSP and evaluates whether the GSA adequately responded to the comments that raise credible technical or policy issues with the GSP.[24]

The Department is required to evaluate the GSP within two years of its submittal date and issue a written assessment.[25] The assessment is required to include a determination of the GSP's status.[26] The GSP Regulations provide three options for determining the status of a GSP: approved,[27] incomplete,[28] or inadequate.[29]

After review of the GSP, Department staff may find that the information provided is not sufficiently detailed, or the analyses not sufficiently thorough and reasonable, to evaluate whether the GSP is likely to achieve the sustainability goal for the basin. If the Department determines the deficiencies precluding approval may be capable of being corrected by the GSA in a timely manner,[30] the Department will determine the status of the GSP to be incomplete. A formerly deemed incomplete GSP may be resubmitted to the Department for reevaluation after all deficiencies have been addressed by the GSA within 180 days after the Department makes its incomplete determination. The Department will review the revised GSP to evaluate whether the identified deficiencies were sufficiently addressed. Depending on the outcome of that evaluation, the Department may determine the resubmitted GSP is approved. Alternatively, the Department may find a formerly deemed

[19] 23 CCR §§ 355.4(b)(1), (3), (4) and (5).
[20] 23 CCR § 355.4(b)(9).
[21] 23 CCR § 355.4(b)(6).
[22] 23 CCR § 355.4(b)(8).
[23] 23 CCR § 355.4(b)(2).
[24] 23 CCR § 355.4(b)(10).
[25] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[26] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[27] 23 CCR § 355.2(e)(1).
[28] 23 CCR § 355.2(e)(2).
[29] 23 CCR § 355.2(e)(3).
[30] 23 CCR § 355.2 (e)(2)(B)(i).

incomplete GSP is inadequate if, after consultation with the State Water Resources Control Board, it determines that the GSA has not taken sufficient actions to correct any identified deficiencies.[31]

Even when the Department determines a GSP is approved, indicating that it satisfies the requirements of SGMA and is in substantial compliance with the GSP Regulations, the Department may still recommend corrective actions.[32] Recommended corrective actions are intended to facilitate progress in achieving the sustainability goal within the basin and the Department's future evaluations, and to allow the Department to better evaluate whether implementation of the GSP adversely affects adjacent basins. While the issues addressed by the recommended corrective actions in an approved GSP do not, at the time the determination was made, preclude its approval, the Department recommends that the issues be addressed to ensure the GSP's implementation continues to be consistent with SGMA and the Department is able to assess progress in achieving the basin's sustainability goal.[33] Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first five-year assessment.[34]

The staff assessment of the GSP involves the review of information presented by the GSA, including models and assumptions, and an evaluation of that information based on scientific reasonableness. In conducting its assessment, the Department does not recalculate or reevaluate technical information provided in the GSP or perform its own geologic or engineering analysis of that information. The recommendation to approve a GSP does not signify that Department staff, were they to exercise the professional judgment required to develop a GSP for the basin, would make the same assumptions and interpretations as those contained in the GSP, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSA are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review of an approved GSP is a continual process. Both SGMA and the GSP Regulations provide the Department with the ongoing authority and duty to review the implementation of the GSP.[35] Also, GSAs have an ongoing duty to reassess their GSPs, provide annual reports to the Department and, when necessary, update or amend their GSPs.[36] The passage of time or new information may make what is reasonable and feasible at the time of this review to not be so in the future. The emphasis of the Department's periodic reviews will be to assess the progress toward achieving the sustainability goal for the basin and whether GSP implementation adversely affects the ability of adjacent basins to achieve its sustainability goals.

[31] 23 CCR § 355.2 (e)(3)(C).
[32] Water Code § 10733.4(d).
[33] Water Code § 10733.8.
[34] 23 CCR § 356.4.
[35] Water Code § 10733.8; 23 CCR § 355.6 *et seq*.
[36] Water Code §§ 10728 *et seq.*, 10728.2.

2 REQUIRED CONDITIONS

A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline.[37] The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin. If a GSP is determined to be incomplete, Department staff may require corrective actions that address minor or potentially significant deficiencies identified in the GSP. The GSAs in a basin, whether developing a single GSP covering the basin or multiple GSPs, must sufficiently address those required corrective actions within the time provided, not to exceed 180 days, for the GSP to be reevaluated by the Department and potentially approved.

2.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority as of January 1, 2017 and that were subject to critical conditions of overdraft to submit a GSP no later than January 31, 2020.[38]

The GSA submitted the Cuyama GSP on January 28, 2020, in compliance with the statutory deadline.

2.2 COMPLETENESS

GSP Regulations specify that the Department shall evaluate a GSP if that GSP is complete and includes the information required by SGMA and the GSP Regulations.[39]

The GSA submitted an adopted GSP for the entire Cuyama Basin. Department staff found the GSP to be complete and include the required information, sufficient to warrant an evaluation by the Department. The Department posted the GSP to its website on January 31, 2020.

2.3 BASIN COVERAGE

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.[40] A GSP that intends to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting GSAs.

The GSP intends to manage the entire Cuyama Basin, and the jurisdictional boundary of the submitting GSA covers the Basin.

[37] Water Code § 10720.7.
[38] Water Code § 10720.7(a)(1).
[39] 23 CCR § 355.4(a)(2).
[40] Water Code § 10727(b); 23 CCR § 355.4(a)(3)

3 PLAN EVALUATION

As stated in Section 355.4 of the GSP Regulations, a basin "shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act." The Department's assessment is based on a number of related factors including whether the elements of a GSP were developed in the manner required by the GSP Regulations, whether the GSP was developed using appropriate data and methodologies and whether its conclusions are scientifically reasonable, and whether the GSP, through the implementation of clearly defined and technically feasible projects and management actions, is likely to achieve a tenable sustainability goal for the basin.

Department staff have identified deficiencies in the GSP, the most serious of which preclude staff from recommending approval of the GSP at this time. Department staff believe the GSAs may be able to correct the identified deficiencies within 180 days. Consistent with the GSP Regulations, Department staff are providing corrective actions related to the deficiencies, detailed below, including the general regulatory background, the specific deficiency identified in the GSP, and the specific actions to address the deficiency.

Following receipt of a letter regarding potential deficiencies and corrective actions issued by the Department on June 3, 2021, the Cuyama Basin GSA submitted a Technical Memorandum (Tech Memo) to the Department on November 5, 2021. Although the Tech Memo states that the "memorandum is intended to supplement the Cuyama Basin GSP that was submitted in January 2020 and fill potential gaps identified in the Letter provided by DWR," Department staff are unclear whether the Tech Memo is part of the GSP because no description of the process to incorporate the Tech Memo into the GSP was provided to the Department. Therefore, while Department staff acknowledge the steps taken by the GSA to begin to address deficiencies, the content provided in the Tech Memo is not incorporated into this assessment of the GSP submitted to the Department for review.

3.1 DEFICIENCY 1. THE GSP LACKS JUSTIFICATION FOR, AND EFFECTS ASSOCIATED WITH, THE SUSTAINABLE MANAGEMENT CRITERIA FOR GROUNDWATER LEVELS.

3.1.1 Background

SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[41] The avoidance of undesirable results is thus explicitly part of sustainable groundwater management, as established by SGMA, and critical to the success of a GSP. To achieve sustainable groundwater management

[41] Water Code § 10721(v).

under SGMA, the basin must experience no undesirable results by the end of the 20-year GSP implementation period and be able to demonstrate an ability to maintain those defined sustainable conditions over the 50-year planning and implementation horizon.

The definition of undesirable results is thus critical to the establishment of an objective method to define and measure sustainability for a basin. As an initial matter, SGMA provides a qualitative definition of undesirable results as "one or more" of six specific "effects caused by groundwater conditions occurring throughout the basin."[42] SGMA identifies the effects related to chronic lowering of groundwater levels as those "…indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon."

It is up to GSAs to define, in their GSPs, the specific significant and unreasonable effects that would constitute undesirable results and to define the groundwater conditions that would produce those results in their basins.[43] The GSA's definition needs to include a description of the processes and criteria relied upon to define undesirable results and must describe the effect of undesirable results on the beneficial uses and users of groundwater. From this definition, the GSA establishes minimum thresholds, which are quantitative values that represent groundwater conditions at representative monitoring sites that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause the basin to experience undesirable results.[44]

SGMA leaves the task of establishing undesirable results and setting thresholds largely to the discretion of the GSA, subject to review by the Department. In its review, the Department requires a thorough and reasonable analysis of the groundwater conditions the GSA is trying to avoid, and the GSA's stated rationale for setting objective and quantitative sustainable management criteria to prevent those conditions from occurring. If a Plan does not meet this requirement, the Department is unable to evaluate the likelihood of the Plan in achieving its sustainability goal. This does not necessarily mean that the GSP or its objectives are inherently unreasonable; however, it is unclear which conditions the GSA seeks to avoid, making it difficult for the Department to monitor whether the GSA will be successful in that effort when implementing its GSP.

3.1.2 Deficiency Details

The first deficiency relates to the GSP's lack of explanation and justification for selecting sustainable management criteria for groundwater levels, particularly the minimum thresholds and undesirable results, and the effects of those criteria on the interests of beneficial uses and users of groundwater. Based on its evaluation, Department staff are concerned that although the GSP appears to realistically quantify the water budget and identify the extent of overdraft in the Basin using the best available information, and while the GSP proposes projects and management actions that appear likely to eventually

[42] Water Code § 10721(x).
[43] 23 CCR § 354.26.
[44] 23 CCR § 354.28, DWR Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria (DRAFT), November 2017.

eliminate overdraft in portions of the Basin, the GSP has not defined sustainable management criteria in the manner required by SGMA and the GSP Regulations.

3.1.2.1 Undesirable Results

The GSP provides quantitative values for the minimum thresholds and includes a combination of those minimum threshold exceedances that the GSA considers causing an undesirable result. However, the GSP does not discuss, or appear to address, the critical first step of identifying the specific significant and unreasonable effects that would constitute undesirable results. The GSP provides general statements about undesirable results (e.g., "The Undesirable Result for the chronic lowering of groundwater levels is a result that causes significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses over the planning and implementation horizon of this GSP."[45]) and generic descriptions of the effects of undesirable results (e.g., "…the Undesirable Results could cause potential de-watering of existing groundwater infrastructure, starting with the shallowest wells…"[46]), but does not provide an explanation for the specific significant and unreasonable condition(s) that the GSA intends to avoid in the Basin through implementation of the GSP (e.g., a level of impact to well infrastructure or to environmental uses).

The GSP states undesirable results for chronic lowering of groundwater levels would occur when groundwater level minimum thresholds are exceeded in 30 percent of monitoring wells for two consecutive years. The same criterion of 30 percent for two consecutive years is used for reduction in storage, degradation of groundwater quality, land subsidence, and depletion of interconnected surface water.

However, the GSP does not provide an explanation for why the criterion is consistent with avoiding significant and unreasonable effects that constitute undesirable results or how the GSA may respond should these conditions have potential for occurring.

3.1.2.2 Minimum Thresholds

The GSP lacks explanation of the justification for setting its minimum thresholds and also lacks explanation of the anticipated effects of groundwater conditions at those thresholds on the interests of the beneficial uses and users of groundwater in nearly all threshold regions. The GSP describes that each threshold region has its own formula to determine the quantitative minimum threshold (e.g., in the Central threshold region it is determined by subtracting 20 percent of the historical range in groundwater levels from the groundwater level observed in early 2015). While it is acceptable to set minimum thresholds differently in portions of a basin, all minimum thresholds must, by the definition of that term in the GSP Regulations, relate to the conditions that could cause undesirable results.

This lack of information is particularly notable in the Northwestern threshold region. The GSP states that the intention of the sustainable management criteria for the Northwestern

[45] Cuyama Basin GSP, Section 3.2.1, p. 260.
[46] *Ibid*.

region is to "…protect the water levels from declining significantly, while allowing beneficial land surface uses (including domestic and agricultural uses) and using the storage capacity of this region."[47] However, the Northwestern region is the only region in the Basin where the sustainable management criteria indicate a plan to substantially lower groundwater levels, relative to conditions at the time of GSP preparation (i.e., the minimum thresholds for groundwater levels are up to 140 to 160 feet lower[48]), in an area with the highest concentration of potential GDEs [49] in Cuyama Valley and with interconnected surface water, which is evidenced by a gaining reach of the river.[50] The GSP did not quantify the expected depletions of surface water over time or assess or disclose the anticipated effects of the established minimum thresholds on beneficial uses and users of groundwater, which, based on Department staff's review, appear to include nearby domestic users, potential GDEs, and users of the interconnected surface water.

The absence of this information and related discussion precludes meaningful disclosure to, and participation by, interested parties and residents in the Basin. In addition, without this discussion it is difficult for Department staff to determine whether it is appropriate or reasonable for the GSA to conclude that undesirable results in the Basin would not occur unless nearly a third of representative monitoring points exceed their minimum thresholds for two consecutive years.

3.1.3 Corrective Actions

The GSA must provide more detailed information, as required in the GSP Regulations, regarding undesirable results and minimum thresholds for all applicable threshold regions.[51] The GSA should describe the anticipated effects of the established minimum thresholds and undesirable results on the interests of beneficial uses and users and how the GSA determined that those thresholds would avoid undesirable results in the Basin. Department staff suggest the GSA consider and address the following:

1. The GSA should describe the specific undesirable results they aim to avoid through implementing the GSP. For example, if the long-term viability of domestic, agricultural, municipal, or environmental uses is a concern with respect to lowering of groundwater levels, then the GSA should describe the specific effects on those users that the GSA considers significant and unreasonable and define groundwater conditions that would lead to those effects. Clarify how the criteria defining when undesirable results occur in the Basin (i.e., 30 percent exceedance of minimum thresholds for two consecutive years) was established, the rationale behind the approach, and why it is consistent with avoiding the significant and unreasonable effects identified by the GSA.

[47] Cuyama Basin GSP, Section 5.2.2, p. 352.
[48] Cuyama Basin GSP, Chapter 5 Appendix A, p. 1505-1509.
[49] Cuyama Basin GSP, Section 2.2.9, p. 227, Figures 2-63 and 2-64, p. 230-231, Chapter 2-Appendix D, p. 1258-1279.
[50] Cuyama Basin GSP, Section 2.2.8, p. 222, Figure 2-61, p. 223.
[51] 23 CCR §§ 354.26, 354.28.

2. The GSA should either explain how the existing minimum threshold groundwater levels are consistent with avoiding undesirable results or they should establish minimum thresholds at the representative monitoring wells that account for the specific undesirable results the GSA aims to avoid. For each threshold region, the GSA should evaluate and disclose the anticipated effects of the GSP's minimum thresholds and undesirable results on:

    a. Well infrastructure, including domestic wells, community and public water supply wells, and agricultural wells. The GSA may utilize the Department's well completion report dataset [52] or other similar data to estimate the number and kinds of wells expected to be impacted at the minimum thresholds identified in the GSP. Public water system well locations and water quality data can currently be obtained using the State Water Resource Control Board's (State Water Board) Geotracker website. [53] Administrative contact information for public water systems and well locations and contacts for state small water systems and domestic wells can be obtained by contacting the State Water Board's Needs Analysis staff. [54] The State Water Board is currently developing a database to allow for more streamlined access to this data in the future.

    Should wells be identified as at risk of going dry at or near minimum threshold conditions, describe the extent of those impacts on beneficial users including:location, number, and type of wells impacted; the beneficial uses and users effected; and any identified project or management action that may be taken to address the condition. If the GSA identifies potential impacts to drinking water wells, including de minimis users and disadvantaged communities, those impacts should be described in the GSP.

    By the first five-year update, the GSA should inventory and better define the location of active wells in the Basin. The GSA should document known impacts to drinking water users caused by groundwater management, should they occur, in annual reports and subsequent periodic updates.

    b. Environmental uses and users of groundwater. If data are not available to support evaluation of the effects of established minimum thresholds on environmental uses and users, the GSA should clarify the strategy,

[52] Well Completion Report Map Application. California Department of Water Resources, https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37.
[53] GeoTracker Application. California State Water Resources Control Board, https://geotracker.waterboards.ca.gov/map/#; select "Public Water Wells" under the "Other Sites" option and navigate to the area of interest.
[54] DDW-SAFER-NAU@Waterboards.ca.gov.

mechanism, and timeline for acquiring that data and incorporating that data into management of the Basin.[55]

3.2 Deficiency 2. The GSP does not fully describe the use of groundwater levels as a proxy for depletion of interconnected surface water.

3.2.1 Background

SGMA identifies six effects of groundwater conditions occurring throughout the basin that GSAs must evaluate to achieve sustainable groundwater management. The GSP Regulations refer to these effects as sustainability indicators and they are chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletions of interconnected surface water.[56] Generally, when any of these effects are significant and unreasonable, as defined in SGMA, they are referred to as undesirable results.[57] SGMA requires GSAs to sustainably manage groundwater, which is defined as avoiding undesirable results for any sustainability indicator during the planning and implementation horizon.[58] Specifically, for each applicable indicator a GSA must develop sustainable management criteria, describe the process used to develop those criteria, and establish a monitoring network to adequately monitor conditions.[59]

A GSA that is able to demonstrate one or more sustainability indicators are not present and are not likely to occur in the basin is not required to develop sustainable management criteria for those indicators.[60] Absent an explanation of why a sustainability indicator is not applicable, the Department assumes all sustainability indicators apply.[61] Demonstration of applicability (or non-applicability) of sustainability indicators must be supported by best available information and science and should be provided in descriptions throughout the GSP (e.g. information describing basin setting, discussion of the interests of beneficial users and uses of groundwater).

The Department's assessment of a Plan's likelihood to achieve its sustainability goal for its basin is based, in part, on whether a GSP provides sufficiently detailed and reasonable supporting information and analysis for all applicable indicators. The GSP Regulations require the Department to evaluate whether establishment of sustainable management criteria is commensurate with the level of understanding of the basin setting.[62]

[55] 23 CCR §§ 355.4(b)(2), 355.4(b)(3).
[56] 23 CCR § 351(ah).
[57] Water Code § 10721(x).
[58] Water Code §§ 10721(v), 10721(r).
[59] 23 CCR §§ 354.22, 354.32.
[60] 23 CCR §§ 354.22, 354.26(d), 354.28(e).
[61] DWR Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria (DRAFT), November 2017.
[62] 23 CCR § 355.4(b)(3).

The GSP Regulations require a GSP to identify interconnected surface water systems in the basin and evaluate the quantity and timing of depletions of those systems using the best available information.[63] As noted above, absent a demonstration of the inapplicability of the depletion of interconnected surface water sustainability indicator, GSAs in basins with interconnected surface waters must develop sustainable management criteria for those depletions as described in the GSP Regulations.

3.2.2 Deficiency Details

The second deficiency relates to the GSP lacking a demonstration, with supporting evidence, of the reasonableness of using groundwater level thresholds as a proxy for depletion of interconnected surface water. The GSP states that "[b]y setting minimum thresholds on shallow groundwater wells near surface water, the [GSA] can to (*sic)* monitor and manage [the hydraulic gradient between surface water and groundwater], and in turn, manage potential changes in depletions of interconnected surface [water]."[64] However, in defining the groundwater level proxies for depletion of interconnected surface water, the GSA appears to have used all the groundwater level thresholds it defined for chronic lowering of groundwater levels regardless of depth of the well or proximity to surface water. It is not obvious to Department staff why managing the Basin to the complete set of chronic lowering of groundwater level thresholds is sufficient to avoid undesirable results for depletion of interconnected surface water, especially since many of those groundwater level thresholds represent conditions that are lower than current conditions.

3.2.3 Corrective Action

The GSA should provide a demonstration, with supporting evidence, for why using the basinwide groundwater level minimum thresholds is a reasonable proxy for thresholds for depletion of interconnected surface water. If the representative monitoring network for interconnected surface water is modified, discuss how the definition of an undesirable result is affected.

3.3 Deficiency 3. The GSP does not fully address degraded water quality.

3.3.1 Background

SGMA and the GSP Regulations do not require a GSP to address undesirable results associated with degraded water quality that occurred before, and have not been corrected by, January 1, 2015. However, management of a basin pursuant to an adopted GSP should not result in further water quality degradation that is significant and unreasonable, either due to routine groundwater use or as a result of implementing projects or management actions called for in the GSP.[65] SGMA provides GSAs with legal authority

[63] 23 CCR §§ 354.28(c)(6)(A), 354.28(c)(6)(B).
[64] Cuyama Basin GSP, Section 3.2.6, p. 263.
[65] Water Code § 10721(x)(4); 23 CCR § 354.28(c)(4).

to regulate and affect pumping and groundwater levels, which have the potential to affect the concentration or migration of water quality constituents and result in degradation of water quality. Additionally, the GSP Regulations state that GSAs should consider local, state, and federal water quality standards when establishing sustainable management criteria,[66] and SGMA provides GSAs with the authority to manage and control polluted water and use authorities under existing laws to implement its GSP.[67] Thus, establishing sustainable management criteria and performing routine monitoring of water quality constituents known to affect beneficial uses and users is within the purview of a GSA.

3.3.2 Deficiency Details

The third deficiency relates to the GSP's role in monitoring for, managing, and avoiding degraded water quality. Department staff believe the GSA's decision to not set sustainable management criteria for arsenic and nitrates may not be reasonable because the findings were not supported by the best available information.[68] The GSP focused on total dissolved solids (TDS), nitrates, and arsenic as a result of public comments received during GSP development.[69] The GSP includes sustainable management criteria for TDS but, despite acknowledging that nitrate and arsenic have exceeded maximum contaminant levels (MCL) prescribed by the State Water Board, the GSP did not establish sustainable management criteria for those constituents. Furthermore, the GSA does not intend to perform routine monitoring for nitrates and arsenic on the basis that they determined there is no "causal nexus" between the GSA's authority to implement projects and management actions and concentrations of arsenic or nitrate.[70]

In its justification for the lack of sustainable management criteria for nitrates and arsenic, the GSP explains that there were relatively few detections of those constituents above drinking water regulatory limits—two nitrate samples and three arsenic samples.[71] Regarding arsenic, the GSP states that the three arsenic detections above the MCL came from an inactive well and from groundwater deeper than 700 feet below ground surface, which the GSP states is below the range of pumping depths for drinking water.[72] In other words, the GSP states that arsenic was not detected above MCL in active wells shallower than 700 feet.[73] However, credible public comments submitted to the Department raised concerns about this claim and the data the GSA may or may not have considered, the GSA's interpretation of that data, and the decision of the GSA to not monitor or develop management criteria for those constituents. For example, a comment submitted to the

[66] 23 CCR § 354.28(c)(4).
[67] Water Code §§ 10726.2(e), 10726.8(a).
[68] While there is no definition of best available information, the GSP Regulations define best available science as the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
[69] Cuyama Basin GSP, Section 2.2.7, p. 208.
[70] Cuyama Basin GSP, Section 4.8, p. 321.
[71] Cuyama Basin GSP, Section 5.5, p. 360-361.
[72] Cuyama Basin GSP, Section 2.2.7 and Section 4.8, p. 209 and 321.
[73] Cuyama Basin GSP, Section 2.2.7, p. 209.

Department indicates the State Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program's Groundwater Information System contains records of arsenic concentrations exceeding the MCL in drinking water wells screened as shallow as 340 feet below ground surface.[74] Department staff confirmed that this claim appears to be true.

Regarding nitrates, a public comment submitted to the Department indicates that potentially 13 of 109 nitrate samples (12 percent) have exceeded the MCL in the past ten years,[75] which conflicts with the GSP's statement that only two samples during 2011 to 2018 exceeded the MCL.

3.3.3 Corrective Actions

Having identified them as constituents of concern, the GSA should reasonably and thoroughly address nitrate and arsenic in the GSP using best available information. Specifically, the GSA should consider the following:

1. Groundwater conditions. The Department received comments that raise credible technical issues regarding groundwater quality data that apparently were not considered when developing the GSP but are available to the public and likely, in the opinion of Department staff, to alter the GSA's assessment of the Basin conditions. The GSA should coordinate with interested parties that submitted comments, in particular with the Regional Water Quality Control Board, to obtain best available information regarding basinwide water quality. The GSA should evaluate this data, along with their existing data, and update the description of basinwide water quality in the GSP as appropriate.

2. Sustainable management criteria. After updating the information regarding existing groundwater quality conditions, the GSA should revise its discussion of groundwater quality sustainable management criteria to either include criteria for arsenic and nitrate or provide thorough, evidence-based analysis and description for why groundwater management is not likely to cause significant and unreasonable degradation of groundwater by increasing concentrations of those constituents.

   Monitoring networks. The GSA should appropriately revise its groundwater quality monitoring network based on updates to the GSP noted above. Department staff believe that, at a minimum, the GSA should include monitoring for arsenic and nitrates, as they have been identified as constituents of concern and both appear to be relatively widespread. Monitoring will be important for the GSA to assess whether groundwater quality degradation for those constituents is occurring

[74] Central Coast Water Board Comments on Final Cuyama Valley Groundwater Sustainability Plan. Central Coast Regional Water Quality Control Board Comment Letter Submitted to the Department, 15 May 2020, https://sgma.water.ca.gov/portal/service/gspdocument/download/4021.
[75] Central Coast Water Board Comments on Final Cuyama Valley Groundwater Sustainability Plan. Central Coast Regional Water Quality Control Board Comment Letter Submitted to the Department, 15 May 2020, https://sgma.water.ca.gov/portal/service/gspdocument/download/4021.

throughout the planning and implementation horizon. The GSA may leverage existing programs that collect and disseminate water quality data and information. The GSA should address any data gaps in the groundwater quality monitoring network and provide specific schedules to address those data gaps.

3.4 Deficiency 4. The GSP does not provide explanation for how overdraft will be mitigated in the basin.

3.4.1 Background

GSP Regulations require that a GSP include a description of projects and management actions that the GSA has determined will achieve the sustainability goal for the basin, the timeline of implementation, and the sustainability indicators that are expected to benefit, including the circumstances in which they would be implemented.[76] For basins in overdraft, the description shall include a quantification of demand reduction or other methods for mitigating the overdraft.[77]

3.4.2 Deficiency Details

The fourth deficiency is related to the lack of a complete discussion of how overdraft will be mitigated in the entire Basin through implementation of the GSP. The GSP identifies two management areas, Central Basin and Ventucopa, as the primary pumping areas in the Cuyama Valley that have the highest water demand. Groundwater levels in the Central Basin management area decline by a modeled 2 to 7.7 feet per year, whereas the Ventucopa management area decline by 2 to 3 feet per year.[78]

To meet the sustainability goal of the Basin, the GSA explains in detail throughout the GSP that a pumping reduction of 50 to 67 percent will be required.[79] Pumping reductions would begin in 2023 and become progressively larger each successive year, with full implementation of the total pumping reduction in 2038.[80]

However, the GSP only intends to implement those pumping reductions in the Central Basin management area and does not explain why pumping reductions will not be implemented in the Ventucopa management area. The GSP executive summary states that “[p]umping reductions are not currently recommended for the Ventucopa Area” and instead recommends “to perform additional monitoring, incorporate new monitoring wells, and further evaluate groundwater conditions in the area over the next two to five years” and that “[o]nce additional data are obtained and evaluated, the need for any reductions in pumping will be determined.”[81] These cited details from the executive summary are the extent of the GSP’s description of the plans for possible demand management in the

[76] 23 CCR § 354.44.
[77] 23 CCR § 354.44(b)(2).
[78] Cuyama Basin GSP, Figure 7-1, p. 387.
[79] Cuyama Basin GSP, Executive Summary and Table 2-7, p. 26 and 254.
[80] Cuyama Basin GSP, Figures ES-15 and 8-1, p. 32 and 419-420.
[81] Cuyama Basin GSP, Executive Summary, p. 32.

Ventucopa management area.[82] Lack of detail for this area is concerning because it appears to Department staff as though the GSA's defined minimum thresholds, which should represent a point in the Basin that, if exceeded, may cause undesirable results,[83] in the Ventucopa management area could be exceeded in as soon as two years if two feet per year of groundwater level decline continues.[84] It is also concerning because the GSP explains that "[d]omestic water users in [the Ventucopa and Central Basin management areas] are experiencing water supply challenges, and in the 2012-2016 drought experienced well failures."[85]

In addition to the Ventucopa Area, the GSP does not discuss why projects and management actions were not considered in the Northwestern threshold region, where, as noted above in Corrective Action 1 (Section 3.1), it appears that overdraft will occur for some time and the allowable groundwater-level decline is over 100 feet in some representative wells.[86]

3.4.3 Corrective Actions

The GSA should explain the rationale for not implementing pumping reductions in the overdrafted Ventucopa management area or any other portion of the Basin where overdraft is expected to continue, and explain the timeline and criteria that may be used to determine whether future pumping reduction allocations are needed.[87] If the criteria to implement pumping reductions are related to the effects on beneficial uses and users, as mentioned in Corrective Action 1, the GSP should clarify what those effects are that would necessitate pumping reductions. If data gaps are known to exist they should be explained and include a timeline to address them and how they may affect management actions for the Ventucopa management area.

The GSP states well failures occurred during the 2012-2016 drought and projects a lowering of groundwater levels beyond those observed during the drought and below 2015 conditions. If, after considering this deficiency and the deficiency associated with Corrective Action 1 (Section 3.1), the GSA retains minimum thresholds that allow for continued lowering of groundwater levels, then it is reasonable to assume that additional wells may be impacted during implementation of the Plan. While SGMA does not require all impacts to groundwater uses and users be mitigated, the GSA should consider including projects and management actions strategies describing how they may support

[82] Cuyama Basin GSP, Executive Summary and Section 7.3.2, p. 32 and 410.
[83] 23 CCR § 354.28(a).
[84] Maps in the GSP appear to indicate two representative monitoring wells are located in the Ventucopa Management Area, OPTI wells 62 and 101. The minimum threshold at OPTI Well 62 is 182 feet below ground surface and the water level as of December 2020 was 158.4 feet below ground surface; at two feet per year the minimum threshold will be exceeded in approximately 12 years. The minimum threshold at OPTI Well 101 is 111 feet below ground surface and the water level as of December 2020 was 108.6 feet below ground surface; at two feet per year the minimum threshold could be exceeded in approximately 2 years.
[85] Cuyama Basin GSP, Section 7.2.4, p. 405.
[86] Cuyama Basin GSP, p. 1505-1509.
[87] 23 CCR §§ 355.4(b)(3), 355.4(b)(4), 355.4(b)(5), 355.4(b)(6).

drinking water impacts that may occur due to continued overdraft during the period between the start of GSP implementation and achievement of the sustainability goal will be addressed. If mitigation strategies are not included, the GSP should contain a thorough discussion, with supporting facts and rationale, explaining how and why the GSA determined not to include specific actions to mitigate drinking water impacts from continued groundwater lowering below 2015 levels.

4 STAFF RECOMMENDATION

Department staff believe that the deficiencies identified in this assessment should preclude approval of the GSP for the Cuyama Valley Basin. Department staff recommend that the GSP be determined incomplete.

TO: Standing Advisory Committee
Agenda Item No. 7c

FROM: Jim Beck / Joe Hughes / Brian Van Lienden

DATE: February 24, 2022

SUBJECT: Direction on Historic Pumping Analysis in the Central Management Area

Issue
Review of historic pumping analysis.

Recommended Motion
Board direction requested.

Discussion
On January 5, 2022, the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board voted to implement a 5% pumping reduction in the Central Management Area in 2023 and 2024 using updated model data.

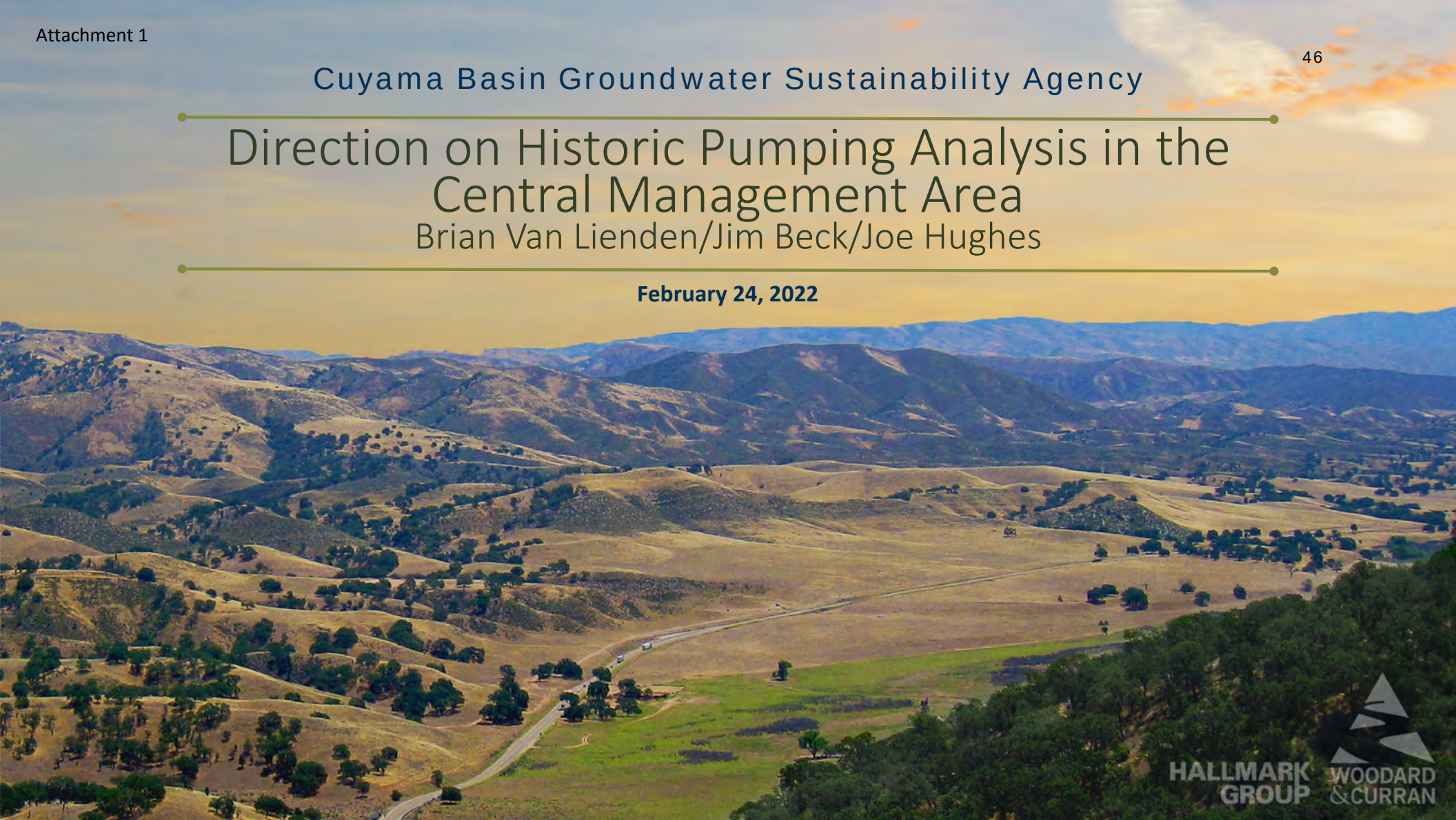
The Board reviewed several allocation methodologies and directed staff to analyze historic pumping numbers based on model data from 1998-2014 for actual irrigated acreage in the Central Management Area and present at the March 2, 2022, Board meeting and that analysis is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Direction on Historic Pumping Analysis in the Central Management Area

Brian Van Lienden/Jim Beck/Joe Hughes

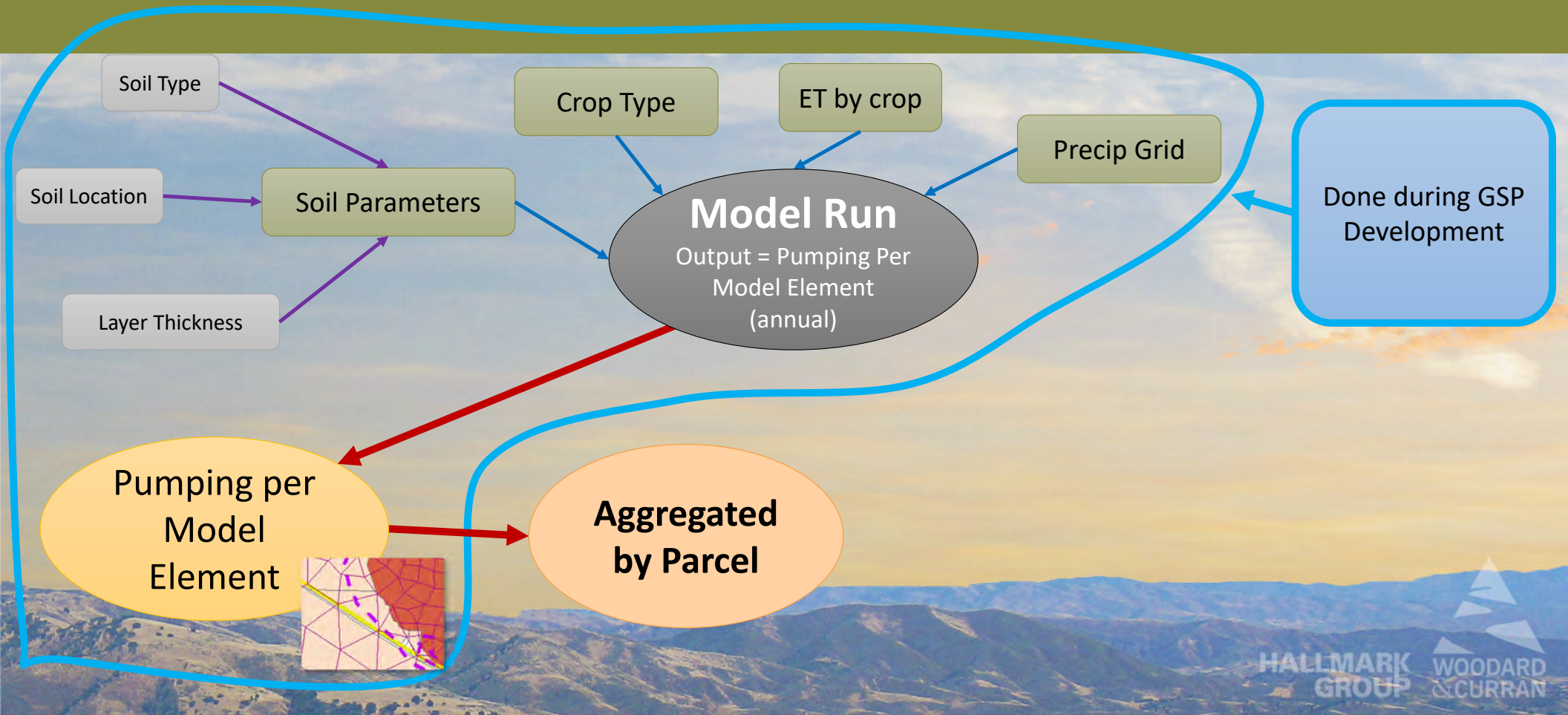
February 24, 2022



Central Management Area Pumping Analysis

- Staff developed estimates of historical pumping in Management Area parcels:
  - Utilized pumping results from Cuyama Basin groundwater model from 1998-2014
  - Annual pumping estimates were aggregated by parcel
  - Estimates by parcel were then aggregated by owner name contained in county parcel records
  - These were reviewed by the Management Area policy ad-hoc committee on Jan 31
- The Ad-hoc meeting met again on Feb 18 to review the following:
  - Details on how pumping by parcel is calculated
  - Comparison between cropping developed by DWR/LandIQ and cropping provided by agricultural operators
- The estimated pumping by owner for 1998-2014 are shown in the attached table.

How Pumping is Calculated



Annual Pumping by property owner (AF/year)
(parcels that cross the MA boundary counted in proportion to the percentage of the parcel located within the MA)

Row Labels	Sum of WY1998	Sum of WY1999	Sum of WY2000	Sum of WY2001	Sum of WY2002
501C3 BLUE SKY SUSTAINABLE LIVING CENTER	1.46	1.31	1.37	1.51	1.25
AGUILA G BOYS LLC	86.50	63.10	61.71	67.30	56.60
AGUILA G-BOYS LLC	1,308.08	919.54	1,085.32	1,232.30	918.75
AMETHYST PROPERTIES INC	3,107.16	2,749.44	2,952.01	4,018.46	3,066.47
ANN M BUCK	74.50	80.85	107.57	104.47	113.81
BELDEN FAM TR ET AL	3,769.44	4,583.77	5,192.83	6,005.85	5,894.83
BOLTHOUSE LAND COMPANY LLC	11,708.00	12,924.20	13,348.77	13,484.19	10,118.19
BOLTHOUSE PROPERTIES LLC	522.85	624.00	541.80	690.27	275.47
BRAY ROBERT B/JUDY A	0.51	0.53	0.38	0.72	0.58
BROOKOVER NELLIE F S	0.25	0.26	0.19	0.36	0.29
CALIENTE RANCH CUYAMA LLC	782.64	668.91	832.28	1,070.04	570.51
CALLAWAY ERIC	21.33	21.85	20.72	23.82	17.08
CARSON MARVIN J EST/OF	0.37	0.35	0.47	0.41	0.18
CONSTANCE G HAWKINS	36.94	30.04	27.73	38.51	17.37
COOPERS PETROLEUM DISTRIBUTOR INC	0.36	0.46	0.61	0.67	0.33
COUNTY OF SANTA BARBARA	0.40	0.35	0.38	0.51	0.26
CUEVAS DELFINO CORTEZ	1.74	3.37	2.99	3.84	1.72
CUEVAS GUSTAVO CORTES	0.18	0.24	0.31	0.34	0.17
CUYAMA COMMUNITY SERVICES DISTRICT	4.55	4.02	4.40	5.28	3.50
CUYAMA SOLAR LLC	282.22	375.09	369.83	452.98	169.86
CUYAMA UNION SCHOOL DISTRICT	13.02	23.75	25.08	21.45	8.69
DIAMOND FARMING CO A CA CORP	2,709.04	2,916.55	2,221.92	3,091.36	2,281.80
DIAMOND FARMING COMPANY	428.57	362.86	346.32	447.86	440.33
DIAZ JOSE CANUTO	41.93	48.51	31.76	52.72	27.90
EHLY VIOLET M	2.34	3.23	3.04	3.90	1.36
ENGRISER MARTIN	1.27	1.65	2.19	2.40	1.18
ERRO THERESA	0.00	0.00	0.00	0.00	0.00
FELICITAS I OCAMPO	8.74	5.53	3.86	6.02	3.53
GILL MICHAEL L 2016 TRUST 11/15/16	18.19	17.72	8.54	11.38	9.78
GRIMM RUSSELL LLC	3,248.50	3,790.05	3,784.26	4,659.01	3,549.69
GRIMMWAY ENTERPRISES INC	182.92	208.66	253.88	265.81	196.65
HARRINGTON JASON M & MARY JO REVOCABLE LIVING TRUST	23.42	27.08	33.93	32.38	35.25
HERMRECK PROPERTIES LLC	0.59	0.51	0.58	0.76	0.40
HOEKSTRA FAMILY TRUST 5/6/99	245.46	267.47	246.60	318.89	289.74
JASON D & THANY T VOSBURGH	54.22	57.75	63.71	38.67	48.15
JENNIFER W DOXEY	45.37	59.50	59.11	66.04	69.33
JOO CAPITAL PARTNERS LLC	320.69	309.02	272.52	390.02	302.67
JOYENO ELIAS	0.25	0.35	0.48	0.47	0.18
KERN RIDGE GROWERS LLC	198.16	258.65	256.22	240.17	254.03
LAPIS LAND CO LLC	623.38	593.98	582.45	631.74	622.13
LAPIS LAND COMPANY LLC	1,704.47	2,049.46	2,069.23	2,220.74	1,795.51
LEAR REAL ESTATE ENTERPRISES LLC	978.01	1,140.98	1,180.90	1,143.93	957.32
LEWIS DAVID G	8.84	10.23	10.18	12.74	10.90
MCCABE FRANCIS J TRUSTEE (for) MCCABE FRANCIS J REV TR 8-5-92	0.84	0.58	0.54	0.75	0.51
MCDONELL EARL CLETTUS	33.67	36.53	34.93	41.62	21.17
PACIFIC GAS AND ELECTRIC CO	1.40	1.76	1.89	2.15	1.65
RATZKE WILLIAM WALTER	0.13	0.17	0.23	0.25	0.12
ROSCAMP EARL JR/MARY	1.16	1.12	1.49	1.26	0.38
ROSCAMP RHODA	0.36	0.33	0.45	0.39	0.17
RUSSELL RICHARD TRUST	24.25	25.74	17.85	24.55	25.47
SADIQ ZAHID	13.07	13.91	13.85	18.14	10.84
SANTA MARIA UN HS DIST	0.36	0.31	0.46	0.61	0.30
SAWYER LINDSEY C HEIRS OF	15.90	19.35	16.00	22.42	12.09
SOUTHERN CALIFORNIA GAS COMPANY	1.89	1.33	0.58	0.75	0.51
STEVEN A PRITZ	33.55	31.97	37.42	30.59	34.05
SUNRIDGE VINEYARDS LP	73.32	82.29	67.52	95.83	29.39
SUNRISE RANCH PROPERTIES LLC	575.36	622.43	865.11	758.26	693.05
SUNRISE RANCH PROPERTIES LLC (CA)	132.50	157.29	201.39	173.55	207.11
TRUJILLO FAMILY TRUST 9/7/17	614.89	1,032.73	752.40	1,272.81	796.38
UNITED STATES OF AMERICA	56.31	72.90	75.15	76.04	36.76
UNKNOWN OWNER	0.12	0.17	0.24	0.23	0.09
USA	88.12	107.64	84.84	120.77	82.55
WOODWARD DONALD	0.38	0.36	0.35	0.42	0.34
ZANNON 2014 LIVING TRUST	71.78	54.61	49.40	68.21	51.62
(blank)	106.44	108.52	103.92	129.94	97.06
Grand Total	**34,412.67**	**37,577.22**	**38,334.46**	**43,699.84**	**34,235.40**

Sum of WY2003	Sum of WY2004	Sum of WY2005	Sum of WY2006	Sum of WY2007	Sum of WY2008	Sum of WY2009	Sum of WY2010	Sum of WY2011
1.35	1.18	1.30	1.11	1.09	1.19	1.21	1.13	1.22
61.42	57.92	59.34	51.72	53.51	53.79	54.75	50.79	55.07
1,077.93	972.92	993.09	633.34	596.44	549.20	538.69	457.06	638.54
2,891.99	2,581.32	3,472.87	2,776.18	3,620.72	3,610.20	3,516.29	2,897.90	3,013.78
104.42	123.10	106.75	116.32	117.72	111.65	113.61	120.95	109.59
4,875.85	4,304.12	5,336.88	4,231.79	5,502.35	6,135.79	5,518.88	4,600.33	5,429.11
9,404.07	9,258.25	9,081.50	8,897.37	9,963.75	10,970.52	9,864.18	9,967.02	10,122.22
283.58	490.82	495.76	496.81	583.69	721.33	599.84	591.97	583.16
0.63	0.45	0.40	0.32	0.21	0.42	0.44	0.37	0.49
0.32	0.22	0.20	0.16	0.10	0.21	0.22	0.18	0.25
765.21	726.51	834.62	643.55	854.52	616.21	747.41	712.97	690.08
20.65	14.71	17.07	18.23	17.95	20.40	20.25	18.90	18.84
0.18	0.17	0.38	0.38	0.29	0.44	0.45	0.34	0.39
20.12	17.61	29.10	27.63	28.74	36.88	33.36	24.05	29.03
0.48	0.48	0.45	0.29	0.46	0.30	0.44	0.58	0.47
0.29	0.24	0.27	0.24	0.46	0.27	0.25	0.25	0.26
1.06	2.94	3.17	1.03	3.08	3.35	2.36	1.39	2.74
0.25	0.24	0.23	0.15	0.24	0.15	0.22	0.30	0.24
3.93	3.28	3.58	3.12	4.27	3.45	3.38	3.23	3.39
443.24	179.33	130.82	370.84	351.13	299.25	402.75	354.97	235.14
13.29	22.51	12.13	16.04	23.16	20.28	15.83	25.59	15.84
2,119.65	1,938.83	2,323.49	2,637.35	2,401.51	3,108.36	3,030.87	2,508.21	2,262.46
500.74	376.45	371.37	411.76	446.01	606.27	549.00	598.47	554.74
24.76	49.51	40.79	34.69	43.39	31.87	36.07	35.29	48.79
2.20	2.68	2.45	1.21	3.12	2.54	2.79	2.02	2.34
1.73	1.70	1.62	1.05	1.65	1.06	1.57	2.06	1.66
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.09	7.05	6.07	5.46	6.50	4.51	5.62	4.57	3.67
26.50	12.43	16.86	10.70	22.47	26.18	9.01	22.21	22.18
3,526.11	2,648.76	3,827.79	3,172.62	3,180.01	3,431.49	3,524.89	3,001.11	3,122.53
242.30	242.83	188.02	241.82	230.39	167.54	238.39	203.42	149.88
31.96	37.88	33.55	34.10	34.57	37.64	39.22	39.29	34.26
0.45	0.37	0.40	0.36	0.69	0.41	0.38	0.37	0.39
207.32	258.60	280.91	229.14	282.25	347.71	325.19	333.69	434.07
32.48	49.48	28.07	25.70	44.65	33.43	29.63	28.85	44.88
64.48	29.51	27.23	31.90	59.99	33.76	27.59	48.75	40.22
286.53	236.98	260.70	248.88	279.00	304.35	336.40	230.55	241.09
0.35	0.32	0.26	0.25	0.32	0.27	0.26	0.45	0.33
218.32	185.33	231.53	162.60	157.21	313.40	263.10	197.49	220.90
1,059.45	816.10	1,001.38	914.48	722.53	855.69	660.48	540.43	742.12
2,059.01	2,645.76	2,652.33	2,613.71	2,619.37	1,912.03	1,659.54	1,293.34	1,540.83
802.02	468.70	493.98	567.60	529.58	537.78	577.10	675.56	800.79
10.61	10.30	9.58	12.38	12.98	10.92	9.70	13.61	12.10
0.51	0.50	0.60	0.45	0.49	0.52	0.51	0.56	0.57
32.55	25.53	24.49	27.19	31.90	30.94	33.86	29.49	30.91
1.19	0.95	1.03	1.25	0.75	1.06	1.74	1.18	1.04
0.18	0.18	0.17	0.11	0.17	0.11	0.17	0.22	0.18
0.44	0.36	1.21	1.21	0.85	1.43	1.53	1.03	1.25
0.18	0.16	0.37	0.36	0.28	0.43	0.44	0.33	0.38
17.48	11.64	24.85	18.24	24.91	30.31	22.75	15.96	25.77
16.34	10.79	9.08	10.19	7.54	8.42	9.54	12.38	13.19
0.49	0.55	0.56	0.39	0.27	0.54	0.33	0.27	0.39
9.11	13.31	9.35	7.45	20.16	18.78	14.68	20.30	20.59
1.56	2.18	1.76	1.64	2.08	1.11	1.65	1.18	0.78
18.79	19.21	27.27	21.87	23.68	30.08	18.09	19.22	29.33
100.38	48.61	32.20	28.74	85.59	34.67	29.93	29.85	33.83
635.40	701.14	736.81	763.09	796.24	646.66	590.04	540.67	708.63
189.19	219.90	152.62	123.11	144.15	185.41	182.20	161.92	166.95
1,020.76	592.73	866.80	447.90	262.38	968.01	978.10	628.46	884.27
62.35	87.93	78.74	79.62	61.34	73.11	54.71	46.65	63.97
0.17	0.16	0.13	0.12	0.16	0.13	0.13	0.22	0.17
54.57	77.70	100.29	71.26	84.75	114.24	105.32	96.03	121.09
0.40	0.95	0.45	0.31	0.89	0.41	0.33	0.30	0.32
50.01	70.33	121.09	118.97	119.96	135.52	136.95	144.26	126.27
80.24	104.96	93.15	70.64	106.27	107.97	91.96	97.41	104.75
33,486.64	**30,767.67**	**34,661.31**	**31,438.47**	**34,576.87**	**37,312.38**	**35,036.56**	**31,457.89**	**33,564.71**

Sum of WY2012	Sum of WY2013	Sum of WY2014	WY 1998-2013 Average	Percent of Annual Average
0.94	1.05	0.89	1.21	0.00%
48.85	52.15	43.25	57.52	0.17%
556.97	554.98	717.74	808.88	2.34%
3,402.28	2,942.53	2,534.20	3,126.69	9.06%
130.52	127.22	107.55	110.04	0.32%
5,518.81	4,548.55	3,518.90	4,998.12	14.49%
9,912.30	9,438.06	7,697.60	10,362.36	30.04%
580.40	610.54	468.46	538.87	1.56%
0.28	0.27	0.39	0.43	0.00%
0.14	0.13	0.19	0.22	0.00%
649.89	710.07	797.53	745.47	2.16%
17.13	22.27	17.80	19.35	0.06%
0.42	0.35	0.42	0.35	0.00%
27.63	31.99	21.70	28.14	0.08%
0.21	0.63	0.42	0.45	0.00%
0.20	0.45	0.22	0.31	0.00%
3.62	2.51	0.49	2.44	0.01%
0.11	0.32	0.22	0.23	0.00%
2.68	4.18	2.88	3.71	0.01%
413.17	430.77	381.81	331.95	0.96%
20.93	30.01	12.56	18.83	0.05%
2,428.05	3,086.35	2,189.66	2,544.44	7.38%
640.51	653.64	524.95	485.87	1.41%
30.63	25.10	19.93	36.68	0.11%
2.51	1.94	1.32	2.41	0.01%
0.74	2.25	1.51	1.61	0.00%
0.00	0.00	0.00	0.00	0.00%
4.27	5.05	4.04	5.39	0.02%
14.83	20.38	16.56	16.82	0.05%
3,399.52	2,882.52	3,980.00	3,454.64	10.01%
221.27	214.16	149.60	211.62	0.61%
40.97	38.94	36.04	34.73	0.10%
0.31	0.67	0.33	0.47	0.00%
474.55	498.98	394.22	319.69	0.93%
29.93	25.89	35.47	39.47	0.11%
25.07	22.18	62.90	45.47	0.13%
318.08	361.90	312.12	294.79	0.85%
0.32	0.53	0.25	0.33	0.00%
198.01	173.20	171.63	217.64	0.63%
1,134.36	837.04	802.64	772.96	2.24%
1,347.23	1,387.93	1,053.39	1,919.05	5.56%
807.37	791.36	779.97	778.41	2.26%
10.08	13.72	10.02	11.11	0.03%
0.59	0.63	2.02	0.66	0.00%
30.37	33.78	28.13	31.00	0.09%
1.31	0.72	0.85	1.29	0.00%
0.08	0.24	0.16	0.17	0.00%
1.42	1.11	1.39	1.10	0.00%
0.41	0.34	0.41	0.34	0.00%
23.34	15.46	23.74	21.90	0.06%
8.10	11.98	11.06	11.67	0.03%
0.37	0.25	0.21	0.39	0.00%
10.93	17.13	8.41	15.06	0.04%
1.15	1.58	0.64	1.32	0.00%
27.08	23.48	14.07	25.87	0.07%
34.92	81.77	32.77	54.21	0.16%
835.12	843.89	297.85	682.93	1.98%
203.67	207.34	72.63	169.47	0.49%
663.06	353.98	866.17	764.81	2.22%
46.86	28.96	74.93	63.32	0.18%
0.16	0.26	0.13	0.16	0.00%
120.14	127.96	80.24	96.32	0.28%
0.30	0.26	0.23	0.41	0.00%
170.96	163.10	203.94	109.23	0.32%
98.41	98.87	69.53	98.24	0.28%
34,694.86	**32,565.84**	**28,661.26**	**34,499.06**	**100.00%**

TO: Standing Advisory Committee
Agenda Item No. 7d

FROM: Jim Beck / Joe Hughes

DATE: February 24, 2022

SUBJECT: Direction on Central Management Area Policies

Issue
Discussion on Central Management Area policies.

Recommended Motion
Board direction is requested on the below Central Management Area policy points.

Discussion
On January 5, 2022, the Cuyama Basin Groundwater Sustainability Agency Board of Directors voted to develop specific allocation methodologies for pumping reductions in the Central Management Area for 2023 and 2024. The Board also directed staff to analyze historic water use in the Central Management Area from 1998 to 2014 as the potential basis for allocating the pumping reduction in 2023 and 2024.

Several technical and policy points were raised by Directors at previous Board meetings or by Management Area Policy Ad hoc members (Directors Bantilan, Chounet, Shephard, Wooster, Vickery) and are listed below for Board discussion and direction.

1. Pumping Reduction Baseline/Starting Point
2. Increased Water Use Inside the Central Management Area
3. Increased Water Use Outside the Central Management Area
4. Central Management Area Boundary (Hydrologic vs Operational)
5. Management Area Criteria Evaluation
6. Administration of Pumping Reduction
7. Non-Compliance/Over-Pumping Enforcement

1. Pumping Reduction Baseline/Starting Point
Three key components are required to implement the pumping reductions for 2023 and 2024 in the Central Management Area which is 5% each year of the difference between the baseline/starting point and the sustainable yield.

No.	Component	Status
1	Sustainable Yield for Central MA	Refined by model update due July 2022
2	Baseline/Starting Point for Reduction	Need to determine this
3	Allocation Methodology for Pumping Reduction for 2023 and 2024	Being determined through Board process

Board Feedback

Potential options for determining the baseline/starting point for the pumping reduction:

- Most recent calendar year
- Review special circumstances with ad hoc then Board
- Other

2. Increased Water Use Inside the Central Management Area

If new water use occurs inside the Central Management Area (i.e. fallow fields are planted, new production) how will that impact allocation?

Board Feedback

Potential Option:

- Develop water budgets for each landowner and they have to manage to that allocation.
- Review special circumstances with ad hoc then Board
- Other

3. Increased Water Use Outside Central Management Area

Since water budgets will be set for landowners in the Central Management Area, water use outside the MA will not impact the ability of landowners inside the MA to meet the 5% reduction goal in 2023 and 2024 unless groundwater levels are declining due to increased water use outside of the management area.

Board Feedback

Potential Options:

- Current model update and model update planned for 2024 (grant funded) will evaluate if new MAs need to be formed based on water use.
- Review representative wells inside and outside the MA to determine if water use outside the MA is significantly impacting the sustainability of the Central MA (Adaptive Management process).
- Consider necessity for entire basin allocation during 2025 GSP update.

4. Central Management Area Boundary (Hydrologic vs Operational)

The Central Management Area boundary is a hydrologic boundary determined by a model output. The model is being updated and will be finalized in July 2022. At that time, staff expects a new model boundary will be produced. The Cuyama Basin Water District has requested that the boundary be adjusted to follow roads and parcel boundaries for ease of administration.

Board Feedback

Potential Options:

- Consider an operational boundary for the Management Area in July 2022 (may impact planning timeline for irrigators)
- Consider during 2025 GSP update

5. Management Area Criteria Evaluation

The Management Area was set using the criteria of areas experiencing a drawdown greater than two (2) feet per year over a projected 50-year period using current demand assumptions. The Cuyama Basin Water District requested the GSA consider other criteria and compare maps showing those different options once the model is updated in July 2022.

Board Feedback

Potential Options:

- Consider other Management Area criteria in July 2022 (may impact planning timeline for irrigators)
- Consider during 2025 GSP update

6. Administration of Pumping Reduction

How should the pumping reduction be administered by the GSA?

Board Feedback

Potential administrative components:

1. GSA to develop simple water allocation for each landowner
2. Require water schedules from landowners
3. Require quarterly landowner water use reports and meter readings
4. Post reported water use on website (or develop reporting tool in Data Management System)
5. Consult with landowner if trending over allocation and present report at Board meeting
6. Water use verification options:
    a. Trust landowners
    b. Use ET
        i. Open ET is new; not fully trusted but may be ok on a regional level
        ii. Land IQ costs are unbudgeted
    c. Perform random spot checks (in-field meter readings for meter option, or in-field visits for ET option).

7. Non-Compliance/Over Pumping Enforcement

If pumping reduction targets are not met how will the Board enforce compliance?

Board Feedback

Potential Options:

- Financial penalties ($ per acre-foot pumped above landowner allocation)
- Stop well from pumping for period of time
- Litigation
- Other

TO: Standing Advisory Committee
Agenda Item No. 7e

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 24, 2022

SUBJECT: Approval of Water Year 2021 Annual Report

Issue

Approval of Water Year 2020-2021 annual report.

Recommended Motion

Approve the Water Year 2020-2021 Annual report and submit to the California Department of Water Resources.

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 2020-2021 (October 1, 2020 through September 30, 2021) is provided as Attachment 1, and the full report is provided as Attachment 2 for consideration of approval.

Cuyama Basin Groundwater Sustainability Agency

Approval of the WY 2020-21 Annual Report

Brian Van Lienden

February 24, 2022

Annual Report Timeline

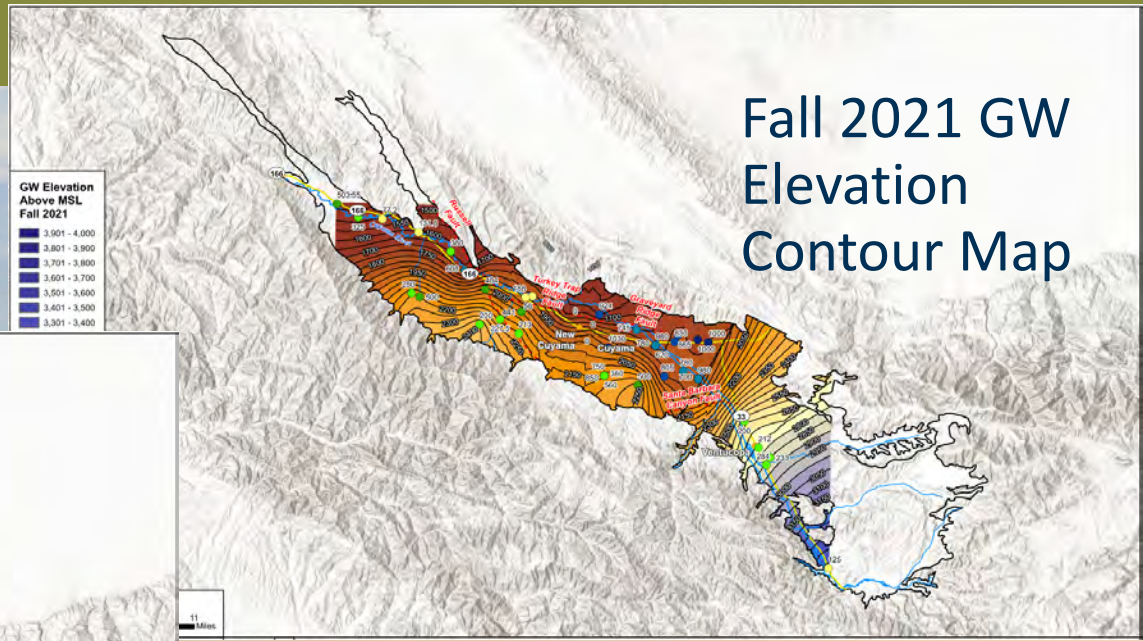
- DWR's GSP Emergency Regulations require that an Annual Report be submitted each year by April 1.
- Staff is requesting approval of the Annual Report by the CBGSA Board

Data and Model Updates

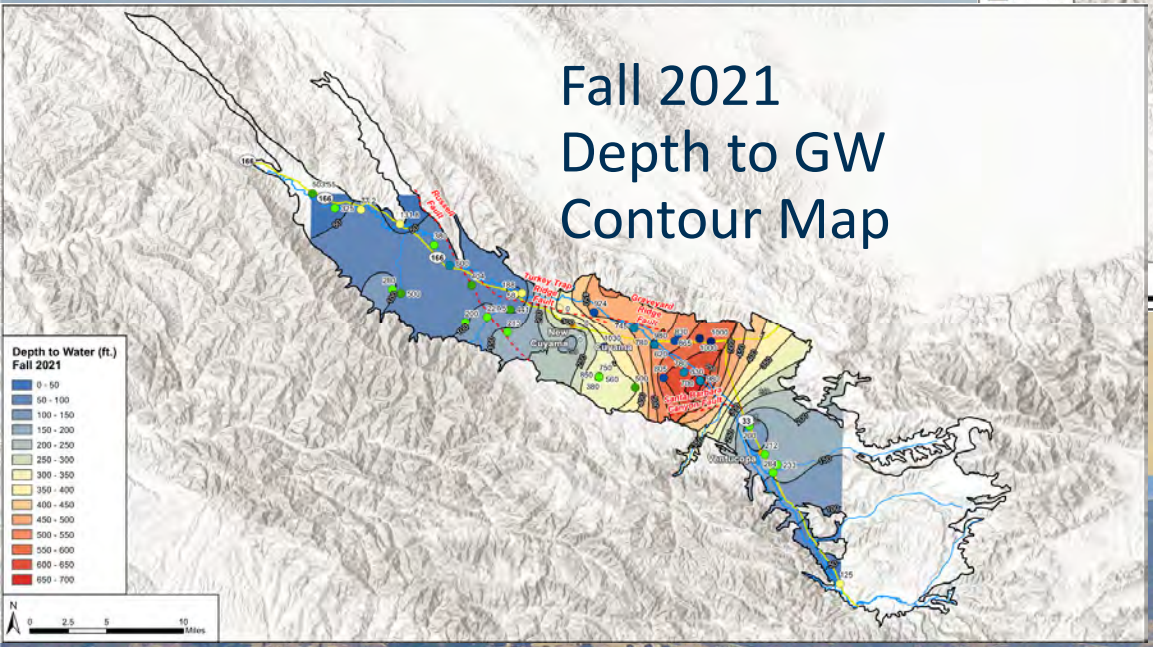
- Groundwater elevations:
  - Available data collected for all wells in monitoring network through 2021
- Groundwater model update
  - Historical model period is extended through 2021 (previously was simulated for 1998-2020)
    - No change will be made to the model calibration
  - Updated land use, precipitation and evapotranspiration data collected for 2021
    - Updated land use data has been provided for 2021 period by Bolthouse and Grimmway. Other key landowners have confirmed no change relative to 2020.

Updated Groundwater Conditions Figures

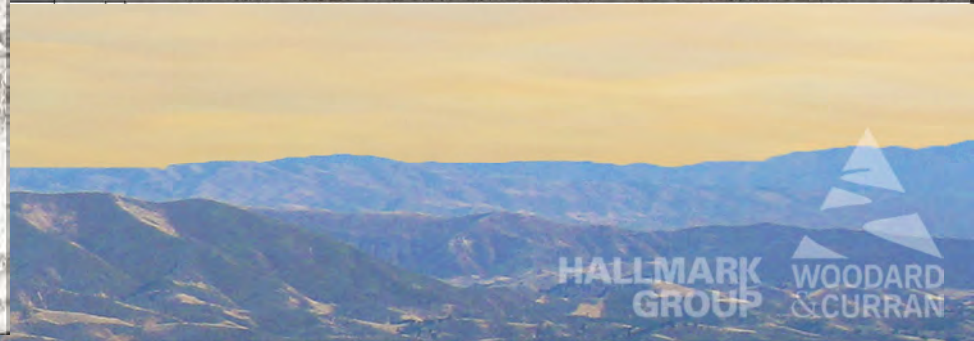
Updated Contour Maps were created for 2021 (Spring and Fall)



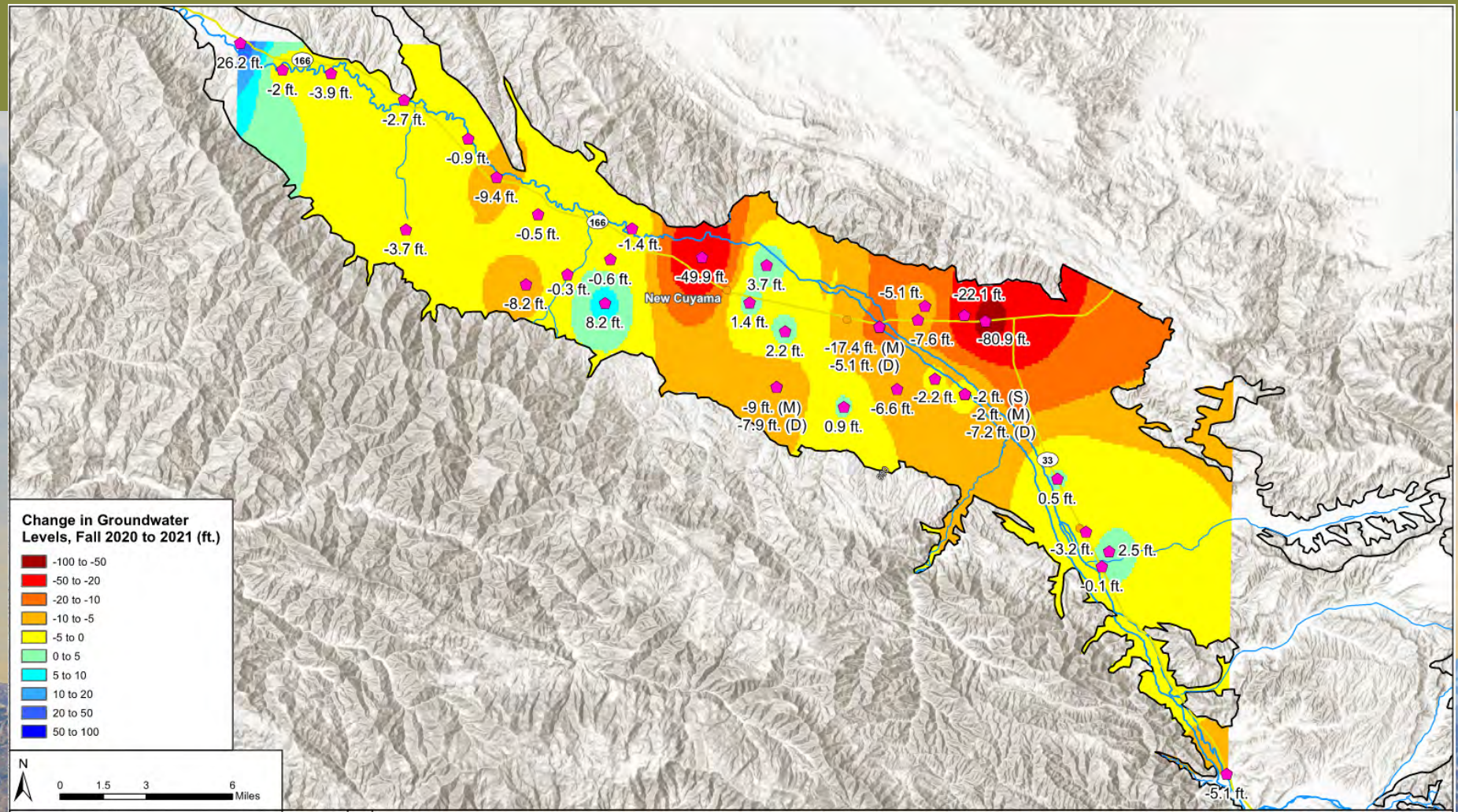
Fall 2021 GW Elevation Contour Map



Fall 2021 Depth to GW Contour Map

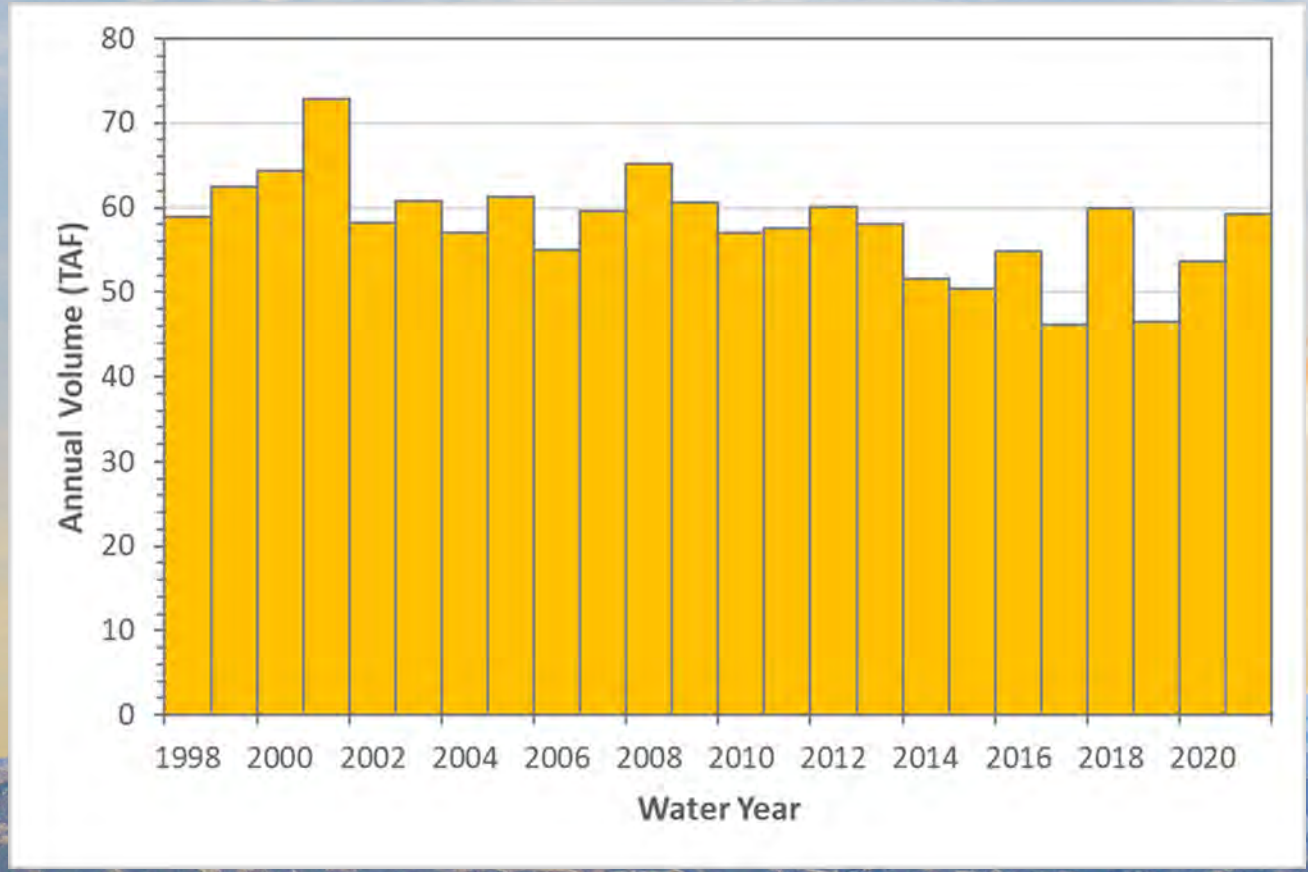


Change in Groundwater Levels from 2020 to 2021



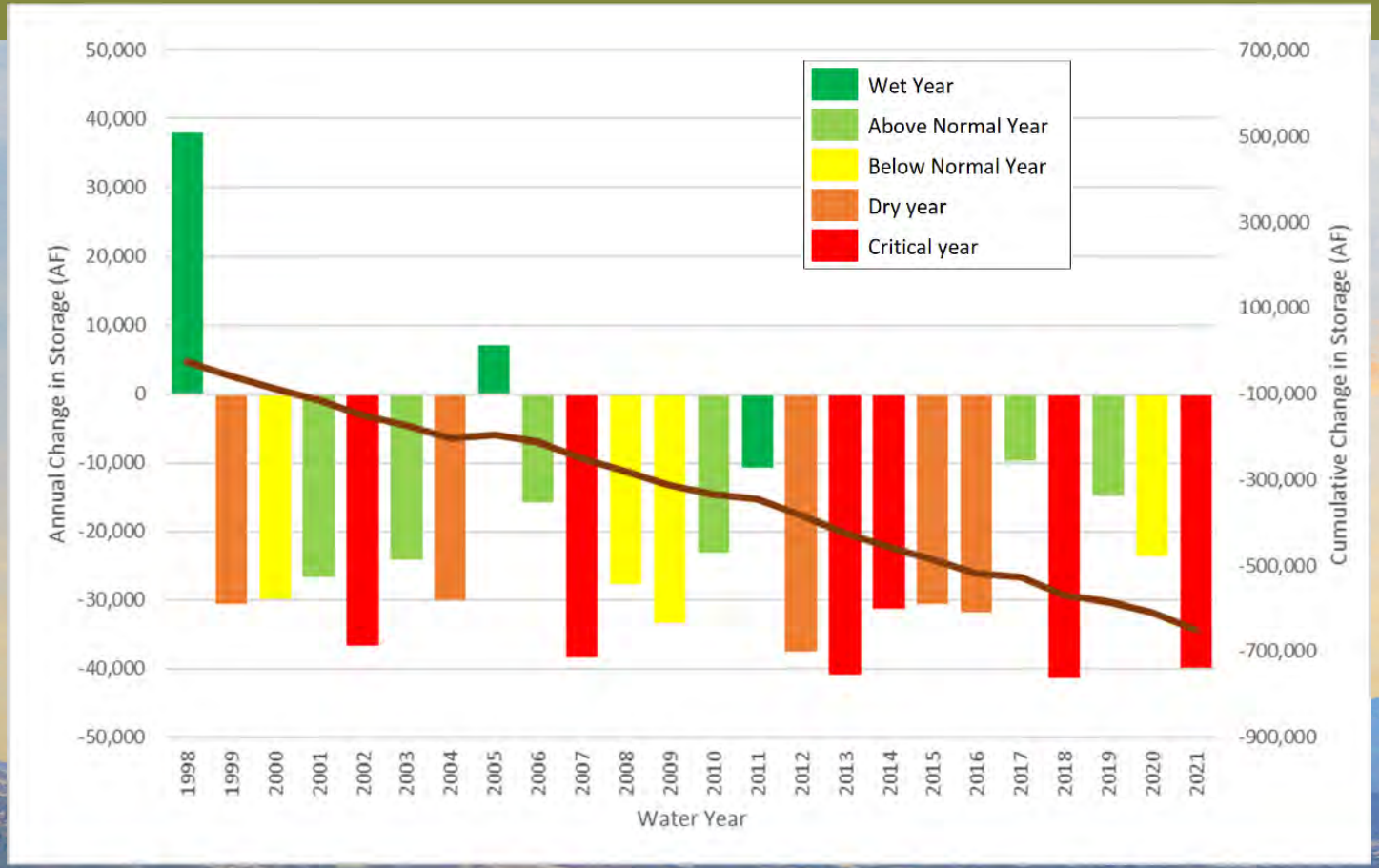
Estimated Groundwater Extraction

- Figure has been updated to include 2021
- Estimated groundwater extractions
  - 2020: 53,600 AF
  - 2021: 59,300 AF



Change in Groundwater Storage

- Figure has been updated to include 2021
- Estimated change in storage
  - 2020: -23,600 AF
  - 2021: -40,000 AF



Cuyama Basin Groundwater Sustainability Plan— Annual Report for 2020-2021 Water Year

Prepared by:

Woodard & Curran

March 2022

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Tables

Figures

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

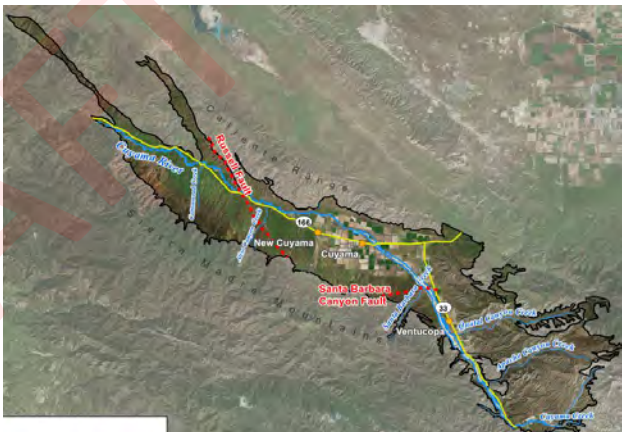
In 2014, the California legislature enacted the Sustainable Groundwater Management Act (SGMA) in response to continued overdraft of California's groundwater resources. The Cuyama Groundwater Basin (Basin) is one of 21 basins and subbasins identified by the California Department of Water Resources (DWR) 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.

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.

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**.

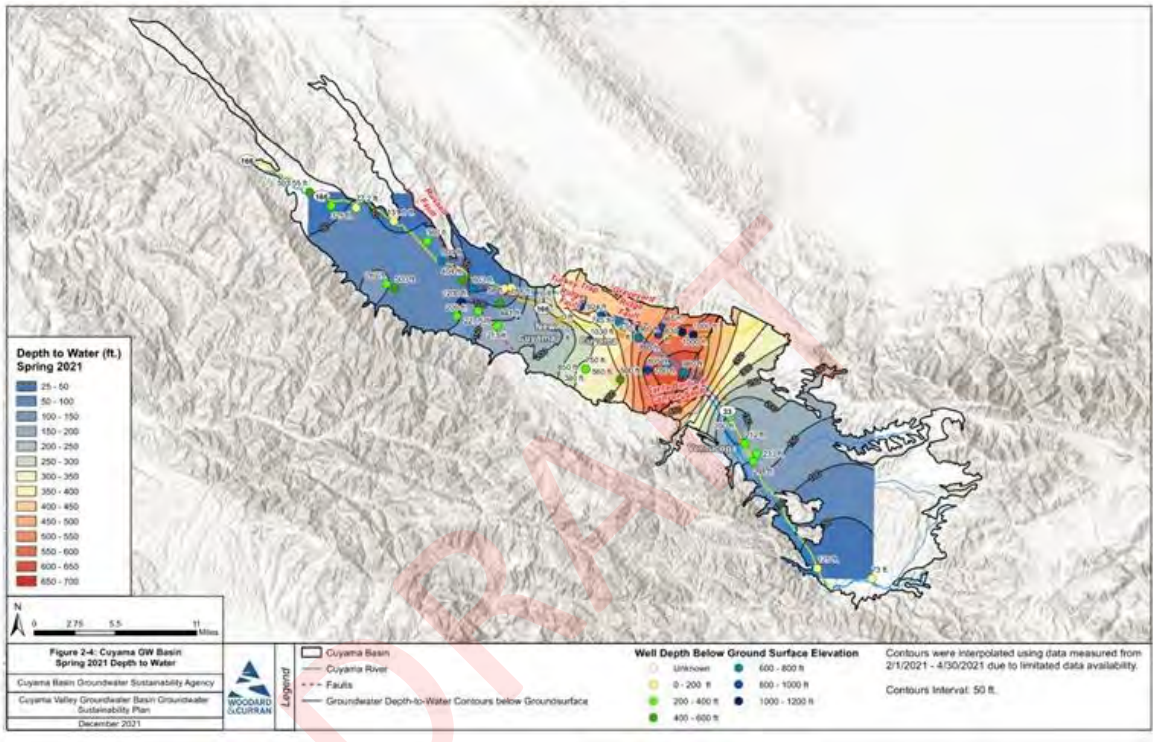
Figure ES-1: GSP Plan Area



ES-2 Groundwater Levels

The Annual Report for the 2021 water year includes groundwater contours for Spring and Fall of 2021, 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 2021 have changed a small amount in the central basin compared to 2020 levels with little change in other parts of the basin.

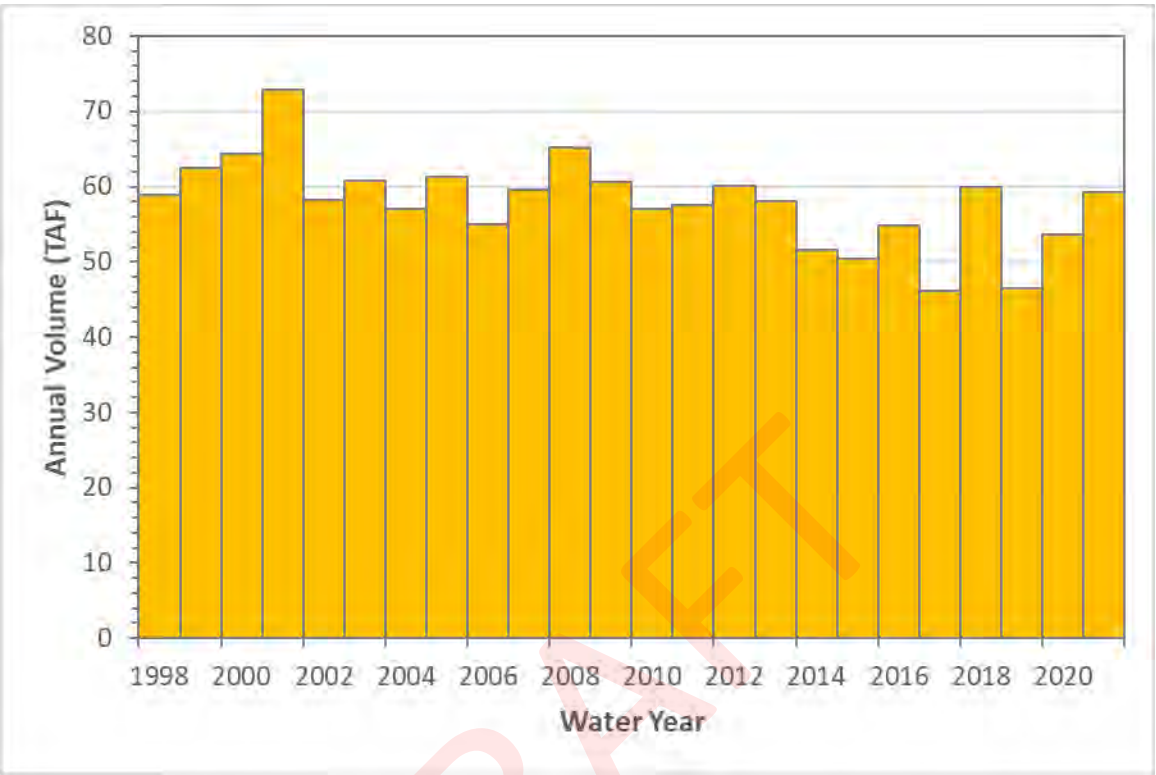
Figure ES-2: Cuyama Basin Depth to Water Contour Map (Fall 2021)



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 59,000 AF in 2021. This reflects an increase of about 5,000 AF as compared to 2020, primarily due to hotter and drier climactic conditions in 2021 as compared to 2020. (See **Figure ES-3**).

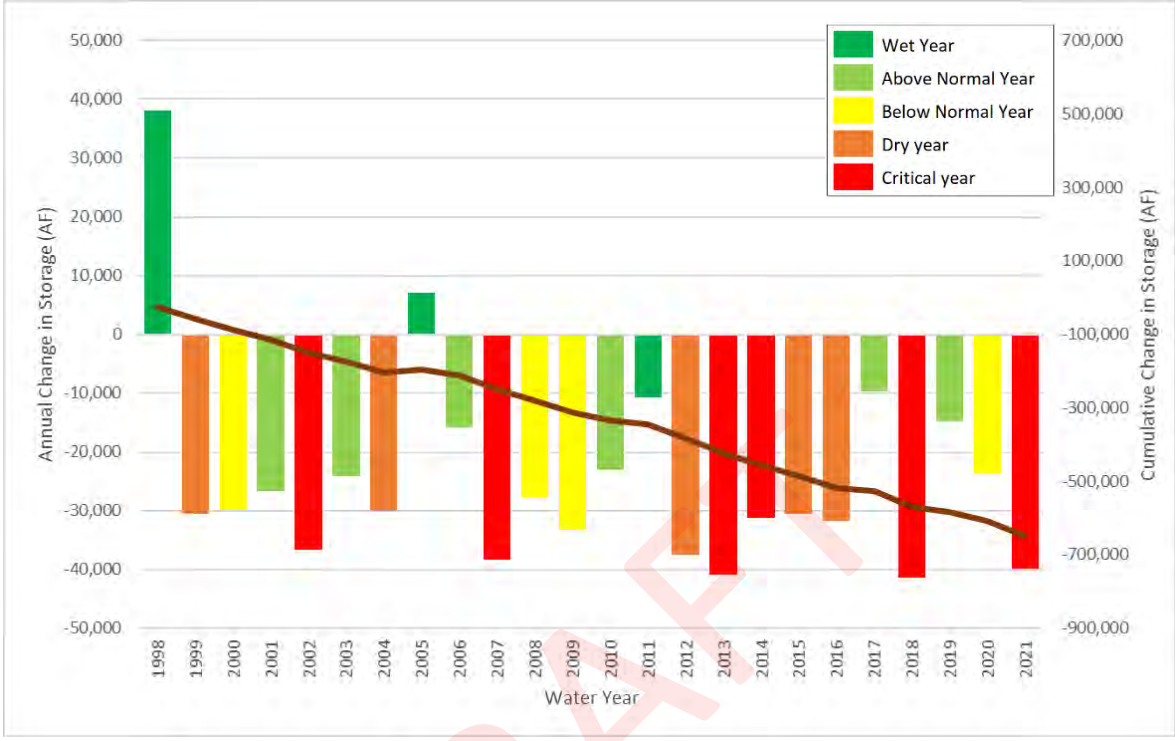
Figure ES-3: Annual Groundwater Extraction in the Cuyama Basin in Water Years 1998-2021



ES-4 Change in Groundwater Storage

It is estimated that there was a reduction in Basin groundwater storage of 40,000 AF in 2021. This continues the 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 2021.

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



ES-5 Groundwater Quality

While the CBGSA began initial groundwater quality monitoring during the 2020-2021 water year, only 36% of monitoring wells were sampled due to limited landowner access. Furthermore, due to questions about the quality of the data the CBGSA considers it premature to use this data to evaluate the performance of groundwater quality at this time. The CBGSA intends to reevaluate the groundwater quality representative monitoring network going forward.

[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-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 2021:

- Approval of a groundwater extraction fee and supplemental fee, which is expected to generate $1.3M in revenue to cover the administrative costs of the CBGSA for the period from January 1, 2022, through December 31, 2022.
- A total of 12 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 monthly monitoring at each monitoring well. In addition, continuous monitoring equipment were installed in ten wells under an ongoing DWR grant.
- The CBGSA has applied for a COD SGMA Implementation Grant for $7.6 million in funding for implementation activities over the next 3 years.
- The GSA worked with DWR Technical Support Services to install of 3 additional multi-completion monitoring wells in the Basin.
- The GSA worked with the United States Geological Survey (USGS) to install two new streamflow gauges on the Cuyama River.
- The CBGSA and Cuyama Basin Water District (CBWD) began initial activities for 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:

- Derek Yurosek – Chairperson, CBWD
- Lynn Compton – Vice Chairperson, County of San Luis Obispo
- Byron Albano – CBWD
- Cory Bantilan – SBCWA
- George Cappello – CBWD
- Paul Chounet –CCSD
- Zack Scrivner – County of Kern
- Glenn Shephard – County of Ventura
- Lorena Stoller – 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. 6 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 9 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 and is available for viewing online at http://cuyamabasin.org/.

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 current Bulletin 118 section on the Cuyama Valley Groundwater Basin incorrectly states 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.

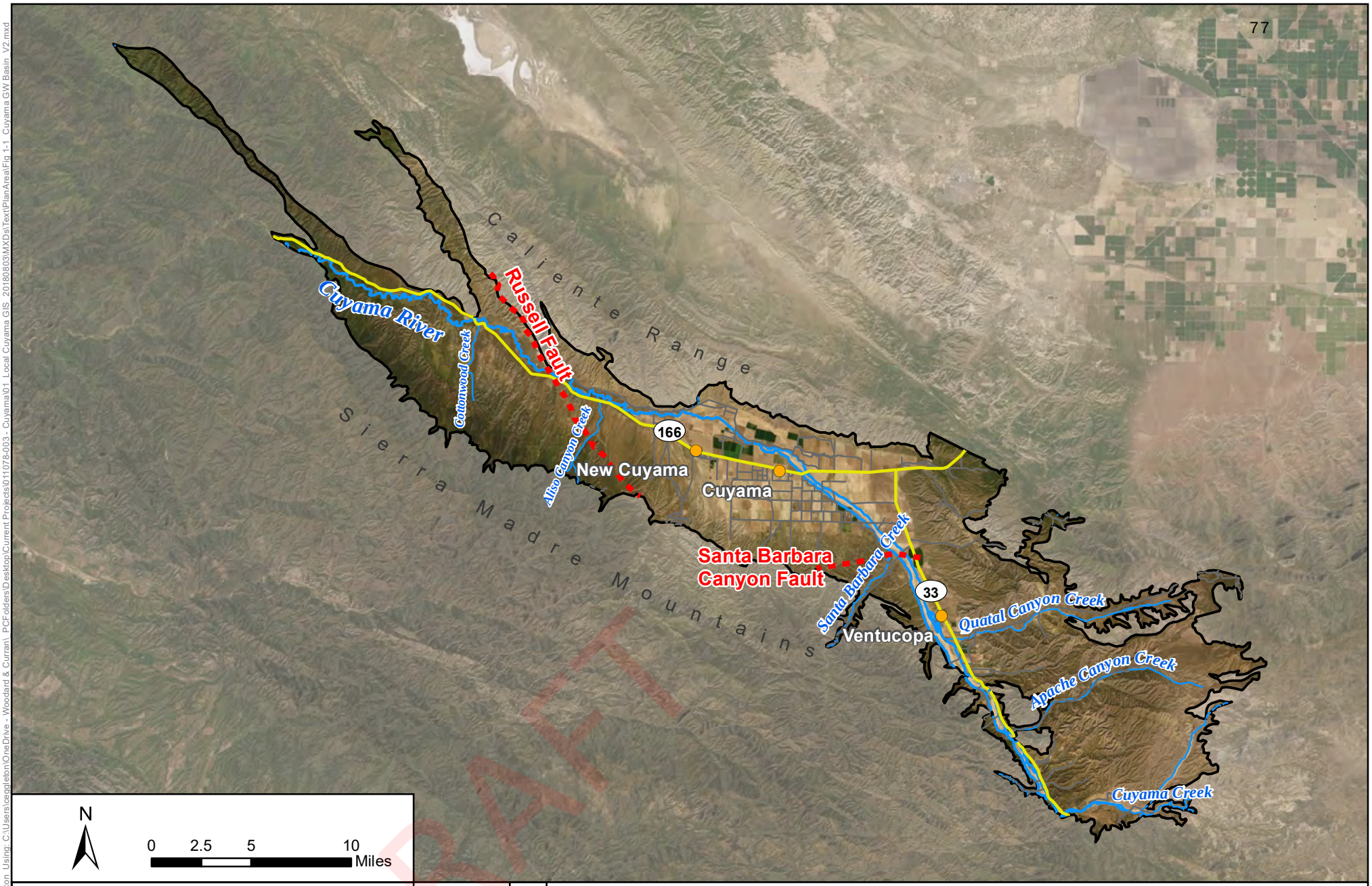


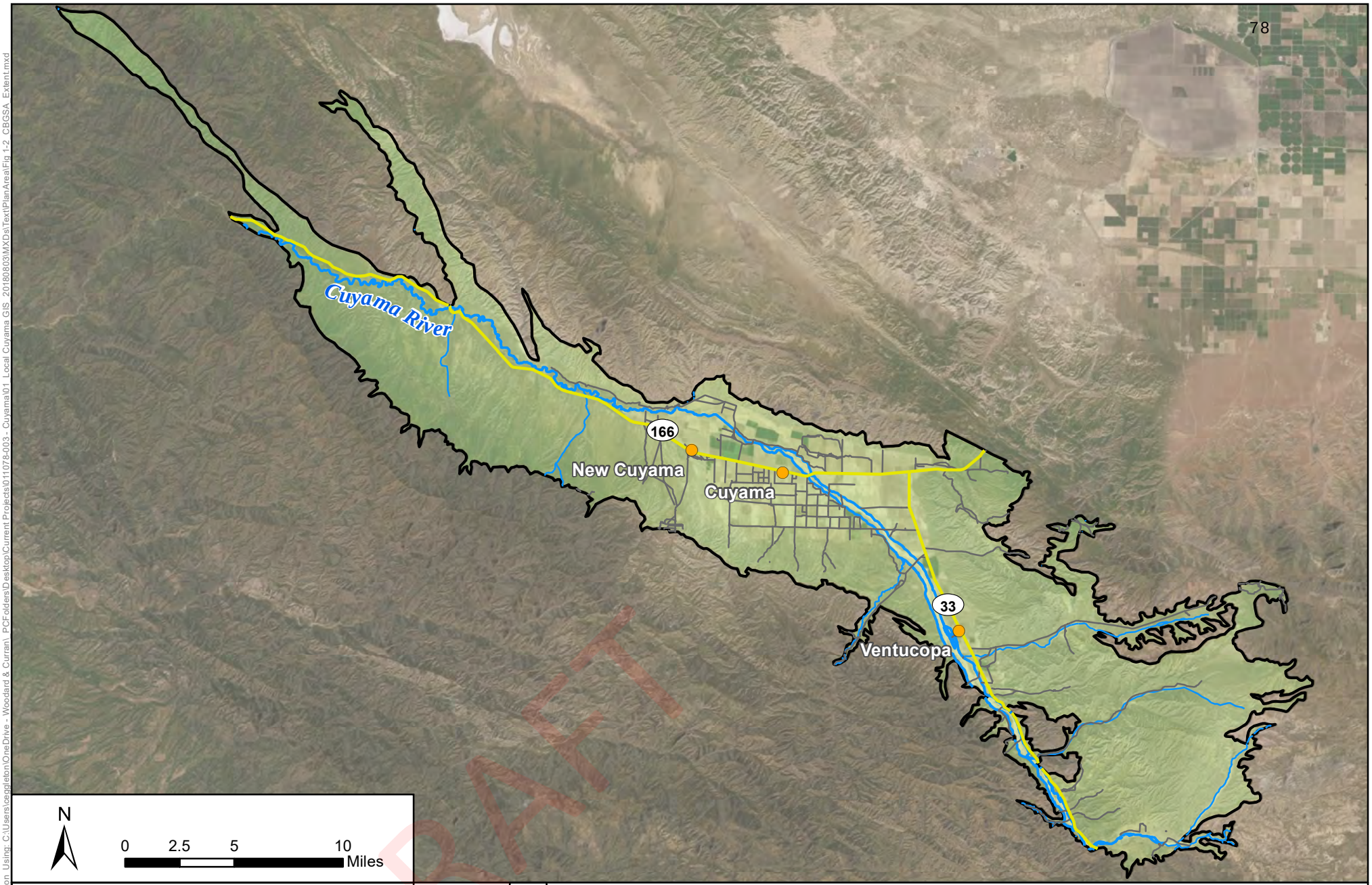
Figure 1-1 - Cuyama Valley Groundwater Basin

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2021

WOODARD &CURRAN



N

0 2.5 5 10 Miles

Figure 1-2 - Cuyama Valley Groundwater Sustainability Agency Boundary

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2021

WOODARD &CURRAN

Legend

- Towns
- Cuyama Basin GSA
- Highways
- Local Roads
- Cuyama River
- Streams/Creeks

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 groundwater levels representative monitoring network that was included in the GSP 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.

2.1.1 Representative Monitoring Network Refinements

As discussed in the 2021 Annual Report, the CBGSA refined and improved the groundwater monitoring network within the Basin by reducing spatial redundant wells from the initial groundwater level representative monitoring network resulting in 52 well in 46 different locations, as shown in **Table 2-1** below.

During 2021, the CBGSA worked with DWR's Technical Support Services (TSS) program to add three new multi-completion wells (with a total of three completions each) using grant funding provided by DWR. In addition, a new well was also added to the network in the vicinity of Santa Barbara Canyon. The revised monitoring network includes 61 wells in 49 locations and is shown in **Figure 2-1**.

The current monitoring network has a monitoring well density of 16.1 wells per 100 square miles when considering each completion. This well density is still greater than the recommended 0.2-10 wells per 100 square miles recommended by Heath (1976) as described in the GSP, *Section 4.5.3 Spatial Density*.

Twelve of the wells in the monitoring network include transducers that provide continuous monitoring. Ten of these transducers were recently added using grant funding from DWR.

Table 2-1: Refined Groundwater Monitoring Network Well List

Opti_ID	Network	Includes a Transducer?	Included in a Multi-Completion Well?	Latitude	Longitude
2	Representative	No	No	34.6985833	-119.3134722
62	Representative	Yes	No	34.829166*	-119.466616*
72	Representative	No	No	34.934603*	-119.689822*
74	Representative	No	No	34.942235*	-119.675109*
77	Representative	Yes	Yes	34.931139*	-119.595234*
85	Representative	No	No	34.819513*	-119.452366*
89	Representative	No	No	34.708085*	-119.37848*
91	Representative	Yes	Yes	34.897694*	-119.54208*
95	Representative	No	No	34.899789*	-119.583875*
96	Representative	No	No	34.89032*	-119.616214*
98	Representative	No	No	34.8839722	-119.6354722
99	Representative	No	Yes	34.899769*	-119.657711*
100	Representative	No	No	34.811832*	-119.456608*
101	Representative	No	No	34.85565*	-119.484574*
102	Representative	Yes	No	34.964658*	-119.704769*
103	Representative	Yes	No	34.927934*	-119.653133*
106	Representative	No	No	34.954879*	-119.787264*
107	Representative	No	No	34.949445*	-119.812449*
110	Monitoring	No	No	34.976685*	-119.793894*
112	Representative	No	No	34.962785*	-119.761096*
114	Representative	No	No	34.978517*	-119.748026*
115	Monitoring	No	No	34.963198*	-119.807102*
118	Representative	No	No	34.975944*	-119.886884*
119	Monitoring	No	No	35.04321*	-119.873055*
121	Monitoring	No	No	34.996523	-119.853474
124	Representative	No	No	34.968831	-119.859639
316	Representative	Yes	Yes	34.897693*	-119.542081*
317	Representative	Yes	Yes	34.897695*	-119.54208*
322	Representative	No	No	34.899771*	-119.657712*
324	Representative	No	Yes	34.89977*	-119.657712*
325	Representative	No	Yes	34.89977*	-119.65771*
420	Representative	Yes	Yes	34.931138*	-119.595235*
421	Representative	Yes	Yes	34.931141*	-119.595235*

Opti_ID	Network	Includes a Transducer?	Included in a Multi-Completion Well?	Latitude	Longitude
474	Representative	No	No	34.940707*	-119.763809*
568	Representative	No	No	34.977355*	-119.756313*
571	Representative	Yes	No	34.979568*	-119.896983*
573	Representative	No	No	34.984849*	-119.805973*
604	Representative	No	No	34.961255*	-119.665*
608	Representative	No	No	34.946425*	-119.618755*
609	Representative	No	No	34.952896*	-119.640085*
610	Representative	No	No	34.905197*	-119.560701*
612	Representative	No	No	34.940453*	-119.594176*
613	Representative	No	No	34.934851*	-119.571774*
615	Representative	No	No	34.94182*	-119.567563*
629	Representative	No	No	34.934806*	-119.530177*
633	Representative	No	No	34.937517*	-119.543251*
830	Representative	No	No	35.054077*	-119.934733*
832	Representative	No	No	35.041341*	-119.8895*
833	Representative	No	No	35.068374*	-119.990842*
836	Representative	No	No	35.055269*	-119.964563*
841	Representative	Yes	No	35.003221*	-119.831741*
845	Representative	Yes	No	35.02238*	-119.849721*
900	Monitoring	No	Yes	35.002893**	-119.81186**
901	Monitoring	No	Yes	35.002845**	-119.811883**
902	Monitoring	No	Yes	35.002846**	-119.811882**
903	Monitoring	No	Yes	34.865465**	-119.495837**
904	Monitoring	No	Yes	34.865466**	-119.495838**
905	Monitoring	No	Yes	34.865466**	-119.495837**
906	Monitoring	No	Yes	34.942695**	-119.691662**
907	Monitoring	No	Yes	34.942696**	-119.691663**
908	Monitoring	No	Yes	34.942696**	-119.691661**

*These well coordinates updated based on survey results conducted during 2021, as discussed in the following subsection.
**These wells were recently installed and therefore were not included in the recent survey. Their metadata is known because source data from DWR was provided.

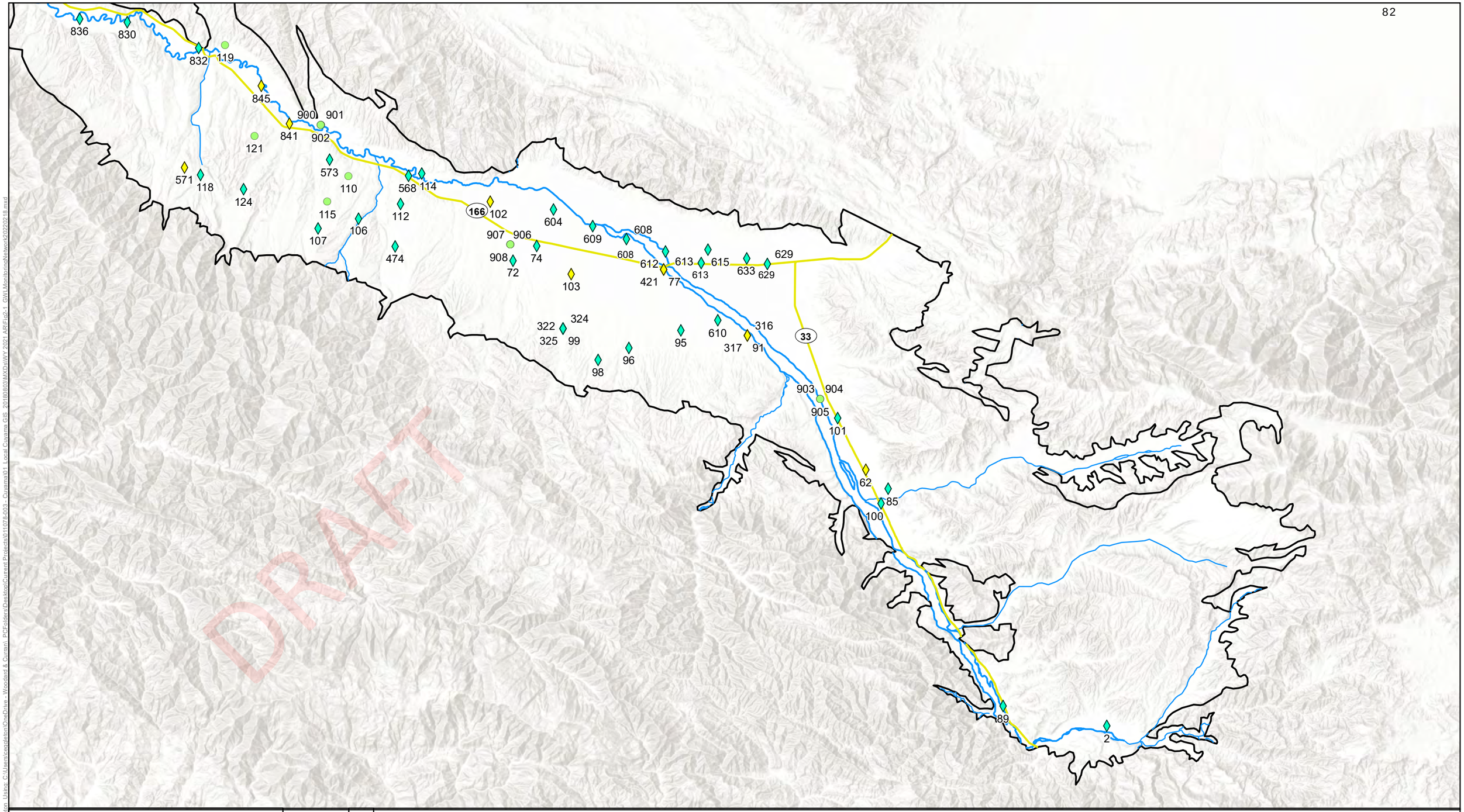


Figure 2-1: Cuyama GW Basin - Refined Groundwater Monitoring Network

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

February 2022

WOODARD &CURRAN

Legend

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

N

0 2.5 5 10 Miles

2.1.2 Well Surveying Results and Subsequent Updates

As described the submitted GSP, the GSA intended to survey groundwater level representative monitoring network wells to ensure data accuracy. Because the data assembled for the development of the GSP included several different data sources and historical data accuracy was unknown, the GSA determined that for those wells in the representative network that surveying should be done.

During the fall of 2021, surveys were conducted at 75 wells within the Basin. Additional wells were intended to be surveyed, but land access agreements were not granted. For these wells, previous estimates of ground-surface elevation will continue to be used going forward. The survey data measured included:

- Latitude/longitude
- General site or well notes
- Elevation of the center of the well
- Elevation of the top of the concrete well pad
- Primary monitoring point elevation ("reference point elevation")
- Secondary monitoring point elevation (if applicable)
- Ground-surface elevation
- Elevation of the top of the well vault (if applicable)

The data collected in the survey allows for the analysis and further processing of historical and recently collected data in each of the surveyed wells. This new metadata, shown in Table 2-2, has been updated in the Cuyama online Opti DMS system, and the GSA is working with DWR to ensure that data submitted in previous uploads through the SGMA Data Portal are also updated appropriately. Notes have been added to each well within Opti explaining when, how, and by how much these data corrections have been performed for public transparency.

Data has been updated using the updated reference point elevations for each surveyed well, more technically described as a vertical datum correction or update. While the depth to water measurements does not change, groundwater elevation values were updated based on the vertical datum corrections. For example, if a well had a recorded reference point elevation of 3,500 ft above mean sea level (amsl), but the survey found the refence point elevation was in fact 3,501.2 ft amsl, then each groundwater level measurement was adjusted accordingly. Therefore, if that same well had a groundwater measurement of 100 ft below ground surface (bgs) or 3,400 ft amsl, then the new measurement would be 100 ft bgs or 3,401.2 ft amsl. **Table 2-2** includes the vertical datum correction.

These vertical datum corrections and updates to the historical data does not impact or alter the GSP in any significant way. Minimum thresholds and measurable objectives described in the submitted GSP were calculated using depth to water, which are not affected by the survey results. While the well survey may cause the elevations of these thresholds to change by a small amount, the same changes are applied to groundwater level measurements at each well, with the result that there are no differences in regard to groundwater level versus threshold comparisons for assessing basin sustainability. Updated minimum threshold and measurable objective elevations are provided in **Table 2-3**.

Although the survey results and vertical datum correction does not have a significant or immediate impact on the wells or Basin management, the survey allows the GSA to increase its data accuracy. Data accuracy will help improve understanding of the Basin, provide more accurate model calibrations, and refine baseline conditions for comparison as GSP implementation moves forward.

Table 2-2: Groundwater Level

Representative Monitoring Network Wells Survey Results and Vertical Datum Correction

Opti_ID	Original GSE	Survey Latitude	Survey Longitude	Well Head Center Elevation	Concrete Pad Elevation	Reference Point Elevation	Secondary Reference Point Elevation	Survey Ground Surface Elevation	Top of Well Vault Elevation	Vertical Datum Correction Difference
2	3720.2	Could not be surveyed								
62	2921.1	34.829166	-119.466616	2920.94	2919.37	2920.12		2919.05		1.0
72	2171.4	34.934603	-119.689822	2176.94	2171.42	2171.68		2169.68		-0.2
74	2192.6	34.942235	-119.675109	2193.12	2191.99	2192.74		2191		-0.1
77	2285.9	34.931139	-119.595234	2282.62		2282.62		2283.29	2283.16	3.3
85	3046.9	34.819513	-119.452366	3049.92	3049.12	3049.39		3048.75		-2.5
89	3461.4	34.708085	-119.37848	3435.94		3455.56		3434.97		5.9
91	2473.9	34.897694	-119.54208	2478.32		2478.32		2479.16	2479.05	-4.4
95	2449.1	34.899789	-119.583875	2457.92	2457.23	2457.64		2456.99		-8.6
96	2606.4	34.89032	-119.616214	2609.49		2609.13		2608.05		-2.8
98	2687.6	Could not be surveyed								
99	2512.6	34.899769	-119.657711	2503.22		2503.22		2503.93	2504.14	9.4
100	3003.7	34.811832	-119.456608	3009.45	3008.69	3008.89		3007.97		-5.1
101	2741.4	34.85565	-119.484574	2752.33	2748.38	2748.52		2747.61		-7.1
102	2046.0	34.964658	-119.704769	2044.47	2043.58	2043.69		2042.87		2.3
103	2288.8	34.927934	-119.653133	2288.11	2287.57	2288.14		2286.65		0.6
106	2326.5	34.954879	-119.787264	2318.75	2318.29	2318.85		2318.11		7.7
107	2482.3	34.949445	-119.812449	2493.67		2493.75		2492.89		-11.5
110	2046.4	34.976685	-119.793894	2053.6	2051.69	2052.3		2051.47		-5.9
112	2139.0	34.962785	-119.761096	2131.37		2130.53		2129.03		8.5
114	1925.1	34.978517	-119.748026	1928.73		1927.29		1926.47		-2.2
115	2276.1	34.963198	-119.807102	2278.78		2278.37		2276.31		-2.3
118	2270.0	34.975944	-119.886884	2264.42		2264.03		2263.45		6.0

Opti_ID	Original GSE	Survey Latitude	Survey Longitude	Well Head Center Elevation	Concrete Pad Elevation	Reference Point Elevation	Secondary Reference Point Elevation	Survey Ground Surface Elevation	Top of Well Vault Elevation	Vertical Datum Correction Difference
119	1713.4	35.04321	-119.873055	1702.33		1702.15		1701.09		11.2
124	2286.9	Could not be surveyed								
316	2473.9	34.897693	-119.542081	2478.37		2478.37		2479.16	2479.05	-4.5
317	2473.9	34.897695	-119.54208	2478.41		2478.41		2479.16	2479.05	-4.5
322	2512.6	34.899771	-119.657712	2503.22		2503.22		2503.93	2504.14	9.4
324	2512.6	34.89977	-119.657712	2503.21		2503.21		2503.93	2504.14	9.4
325	2512.6	34.89977	-119.65771	2503.14		2503.14		2503.93	2504.14	9.4
420	2285.9	34.931138	-119.595235	2282.63		2282.63		2283.29	2283.16	3.3
421	2285.9	34.931141	-119.595235	2282.63		2282.63		2283.29	2283.16	3.3
474	2368.7	34.940707	-119.763809	2366.75		2366.64		2365.22		2.0
568	1904.7	34.977355	-119.756313	1915.82	1912.74	1914.14		1912.09		-9.4
571	2306.7	34.979568	-119.896983	2317.77	2316.57	2317.02		2316.21		-10.3
573	2084.0	34.984849	-119.805973	2083.86	2083.16	2083.56		2081.62		0.5
604	2124.7	34.961255	-119.665	2124.82	2117.81	2118.29		2117.4		6.4
608	2223.7	34.946425	-119.618755	2215.86	2214.33	2214.58	2215.96	2214.3		9.1
609	2167.0	34.952896	-119.640085	2174.7	2167.1	2167.62	2168.56	2166.35		-0.6
610	2441.9	34.905197	-119.560701	2442.3	2441.83	2442		2440.38		-0.1
612	2266.3	34.940453	-119.594176	2279.49	2272.7	2273.43		2271.87		-7.1
613	2330.3	34.934851	-119.571774	2334.73	2328.57	2329.3		2327.64		1.0
615	2327.3	34.94182	-119.567563	2329.97	2323.67	2324.01		2322.95		3.3
629	2378.9	34.934806	-119.530177	2384.52	2379.24	2379.76		2379.19		-0.8
633	2363.9	34.937517	-119.543251	2371.3	2364.36	2364.84		2364.31		-1.0
830	1571.0	35.054077	-119.934733	1562.53		1562.21		1561.55		8.7
832	1629.7	35.041341	-119.8895	1639.53		1640.86		1639.62		-11.1
833	1457.2	35.068374	-119.990842	1458.4	1456.81	1457.45		1456.06		-0.3

Opti_ID	Original GSE	Survey Latitude	Survey Longitude	Well Head Center Elevation	Concrete Pad Elevation	Reference Point Elevation	Secondary Reference Point Elevation	Survey Ground Surface Elevation	Top of Well Vault Elevation	Vertical Datum Correction Difference
836	1485.8	35.055269	-119.964563	1511.18	1509.82	1510.32		1509.02		-24.5
841	1760.9	35.003221	-119.831741	1764.95	1763.43	1763.53		1762.08		-2.6
845	1711.8	35.02238	-119.849721	1714.74	1713.05	1713.08		1711.89		-1.3
84	2923.2	34.827438	-119.466547	2925.39	2923.33	2924.5		2923.03		-1.3
108	2629.5	Could not be surveyed								
116	2328.6	34.926721	-119.728094	2322.23	2321.95	2322.4		2321.64		6.2
128	3720.7	Could not be surveyed								
467	2224.4	34.938348	-119.65291	2234.11	2228.38	2228.7		2227.2		-4.3
601	2074.2	34.965474	-119.684202	2075.94	2071.17	2072.11		2071.1		2.1
603	2096.8	34.966881	-119.675179	2091.44	2085.09	2085.49		2085.04		11.3
614	2337.1	34.934857	-119.568091	2340.78	2334.51	2335.3	2334.86	2334.47		1.8
618	2162.8	34.955416	-119.643536	2159.29	2157.8	2158.05		2156.81		4.8
619	2306.5	34.938245	-119.581423	2311.55	2305.74	2306.1		2305.48		0.4
620	2432.3	34.905031	-119.568545	2435.24	2429.77	2430.15		2429.5		2.2
621	2126.1	34.960753	-119.655356	2140.01	2134.23	2134.51	2134.8	2134.02		-8.4
623	2288.3	34.941945	-119.586625	2294.24	2288.77	2289.68		2288.06		-1.4
627	2279.1	34.927648	-119.64601	2276.65	2276.53	2276.95		2275.73		2.2
628	2388.2	34.936287	-119.52604	2394.4		2389.09		2387.71		-0.9
630	2371.5	34.934439	-119.539166	2378.49	2371.91	2372.79		2371.73		-1.3
631	2367.4	34.937386	-119.534314	2373.26	2365.35	2366.13		2365.17		1.3
635	2356.4	34.934448	-119.558016	2361.84		2354.91		2354.62		1.4
636	2348.0	34.93449	-119.562449	2354.89	2349.3	2349.92	2350.28	2349.03		-1.9
637	2110.0	34.966758	-119.658803	2123.79	2117.46	2118.38		2116.77		-8.4
638	2436.8	34.905122	-119.56447	2443.21	2435.67	2436.39		2435.02		0.5
640	2238.8	34.94526	-119.604771	2237.55	2236.06	2236.35		2235.08		2.4

Opti_ID	Original GSE	Survey Latitude	Survey Longitude	Well Head Center Elevation	Concrete Pad Elevation	Reference Point Elevation	Secondary Reference Point Elevation	Survey Ground Surface Elevation	Top of Well Vault Elevation	Vertical Datum Correction Difference
641	2204.2	34.947711	-119.628494	2204.28	2202.44	2203.83		2201.8		0.4
642	2231.6	34.94924	-119.607379	2235.07	2233.2	2234.37		2231.82		-2.8
644	2143.4	34.959038	-119.648801	2147.37	2145.52	2145.54		2144.93		-2.1
831	1556.8	35.048818	-119.93885	1156.46	1557.13	1556.78		1556.78		0.0
834	1507.9	35.052221	-119.966532	1510.77	1509.62	1510.35		1509.19		-2.4
835	1554.5	35.044117	-119.964617	1561.43		1560.39		1560.13		-5.8

Table 2-3: Updated Groundwater Level Threshold Depths and Elevations with Vertical Datum Corrections

Well	*Original GSE*	*Surveyed GSE*	*Minimum Threshold (Depth)*	*Measurable Objective (Depth)*	*Minimum Threshold (Elevation)*	*Measurable Objective (Elevation)*
2	*3720.2*	*Unavailable*	*72*	*55*	*3648*	*3665*
62	*2921.1*	*2919.05*	*182*	*142*	*2737*	*2777*
72	*2171.4*	*2169.68*	*169*	*124*	*2001*	*2046*
74	*2192.6*	*2191*	*256*	*243*	*1935*	*1948*
77	*2285.9*	*2283.29*	*450*	*400*	*1833*	*1883*
84	*2923.2*	*2923.03*	-	-	*N/A*	*N/A*
85	*3046.9*	*3048.75*	*233*	*147*	*2816*	*2902*
89	3461.4	3434.97	64	44	3371	3391
91	2473.9	2479.16	625	576	1854	1903
95	2449.1	2456.99	573	538	1884	1919
96	2606.4	2608.05	333	325	2275	2283
98	2687.6	Unavailable	450	439	2238	2249
99	2512.6	2503.93	311	300	2193	2204
100	3003.7	3007.97	181	125	2827	2883
101	2741.4	2747.61	111	81	2637	2667
102	2046.0	2042.87	235	197	1808	1846
103	2288.8	2286.65	290	235	1997	2052
106	2326.5	2318.11	154	141	2164	2177
107	2482.3	2492.89	91	72	2402	2421
108	2629.5	Unavailable	165	136	2464	2494
112	2139.0	2129.03	87	85	2042	2044
114	1925.1	1926.47	47	45	1879	1881
118	2270.0	2263.45	124	57	2139	2206
119	1713.4	1701.09	203	153	1498	1548
124	2286.9	Unavailable	73	57	2214	2230

Well	*Original GSE*	*Surveyed GSE*	*Minimum Threshold (Depth)*	*Measurable Objective (Depth)*	*Minimum Threshold (Elevation)*	*Measurable Objective (Elevation)*
316	2473.9	2479.16	623	574	1856	1905
317	2473.9	2479.16	623	573	1856	1906
322	2512.6	2503.93	307	298	2197	2206
324	2512.6	2503.93	311	299	2193	2205
325	2512.6	2503.93	300	292	2204	2212
420	2285.9	2283.29	450	400	1833	1883
421	2285.9	2283.29	446	398	1837	1885
474	2368.7	2365.22	188	169	2177	2196
568	1904.7	1912.09	37	36	1875	1876
571	2306.7	2316.21	144	121	2172	2196
573	2084.0	2081.62	118	68	1964	2014
604	2124.7	2117.4	526	487	1591	1630
608	2223.7	2214.3	436	407	1778	1807
609	2167.0	2166.35	458	421	1708	1745
610	2441.9	2440.38	621	591	1819	1849
612	2266.3	2271.87	463	440	1809	1832
613	2330.3	2327.64	503	475	1825	1853
615	2327.3	2322.95	500	468	1823	1855
620	2432.3	2429.5	606	566	1824	1864
629	2378.9	2379.19	559	527	1820	1852
633	2363.9	2364.31	547	493	1817	1871
830	1571.0	1561.55	59	56	1503	1506
831	1556.8	1556.78	77	52	1480	1505
832	1629.7	1639.62	45	30	1595	1610
833	1457.2	1456.06	96	24	1360	1432
834	1507.9	1509.19	84	42	1425	1467

Well	*Original GSE*	*Surveyed GSE*	*Minimum Threshold (Depth)*	*Measurable Objective (Depth)*	*Minimum Threshold (Elevation)*	*Measurable Objective (Elevation)*
835	1554.5	1560.13	55	36	1505	1524
836	1485.8	1509.02	79	36	1430	1473
841	1760.9	1762.08	203	153	1559	1609
845	1711.8	1711.89	203	153	1509	1559

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 fall 2018 and spring and fall in 2020 and 2021. For this Annual Report, analysis was conducted to incorporate data from October 2020 to December 2021 that 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 2021 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 2021.

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 March-May 2021 were used to develop the spring contours and from October 2021 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 2021. Data 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 an 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 2021 and more clearly shows a depression in the central portion of the Basin greater than 450 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 the 2020 and 2021 Annual Reports.

Figure 2-4 shows the groundwater elevation contours for fall of 2021. As in **Figure 2-3**, 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 2020 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 2021. 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 2019 conditions and previous Annual Reports.

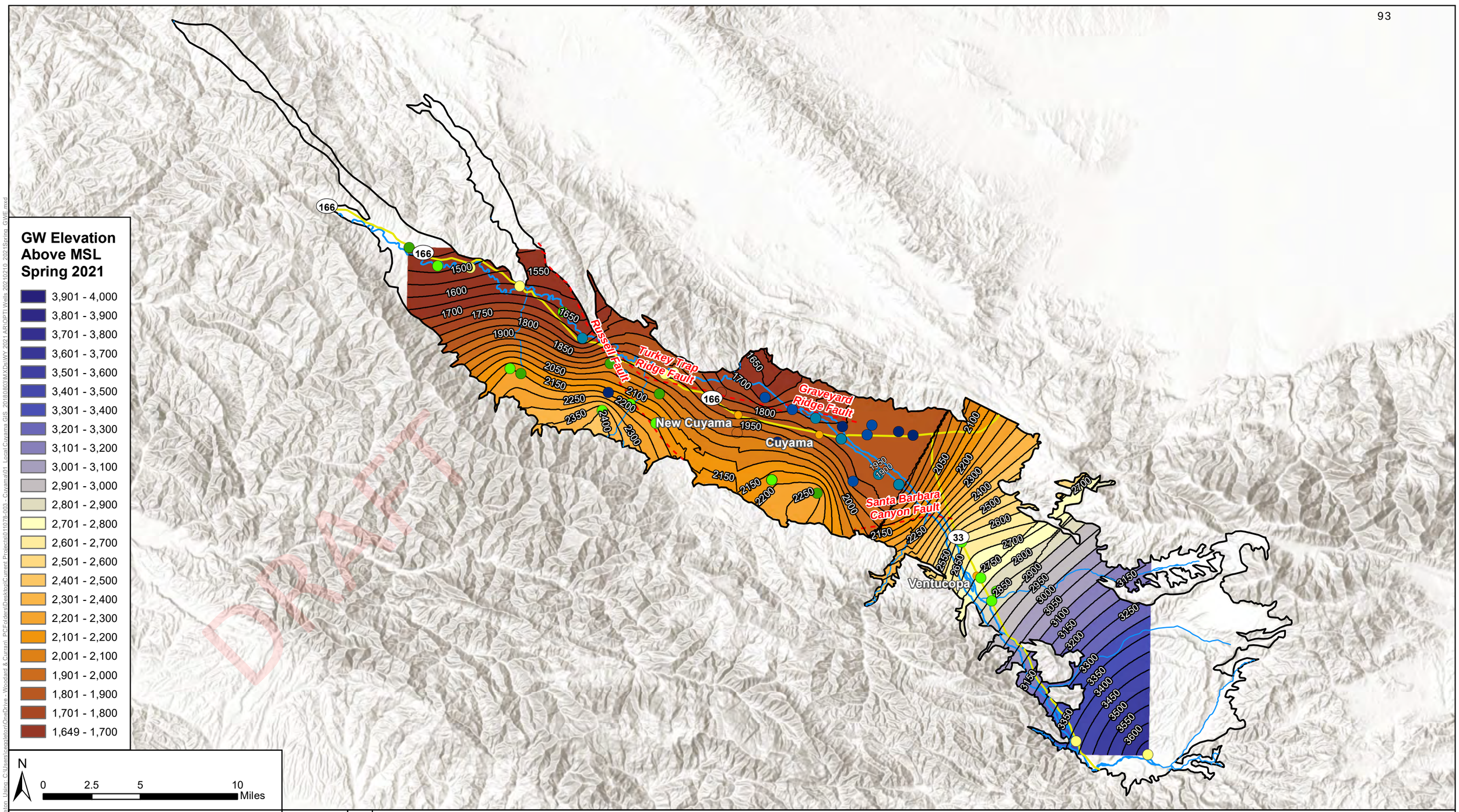


Figure 2-3: Cuyama GW Basin Spring 2021 Groundwater Elevation

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

December 2021

WOODARD &CURRAN

Legend

- Cuyama Basin
- Cuyama River
- Faults
- Groundwater Elevation Above MSL

Well Depth Below Ground Surface Elevation

- Unknown
- 0 - 200 ft
- 200 - 400 ft
- 400 - 600 ft
- 600 - 800 ft
- 800 - 1000 ft
- 1000 - 1200 ft

Contours were interpolated using data measured from 2/1/2021 - 4/30/2021 due to limited data availability.

Contours Interval: 50 ft.

Depth to Water (ft.)
Spring 2021

- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 300
- 300 - 350
- 350 - 400
- 400 - 450
- 450 - 500
- 500 - 550
- 550 - 600
- 600 - 650
- 650 - 700

N

0 2.75 5.5 11 Miles

Figure 2-4: Cuyama GW Basin Spring 2021 Depth to Water

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

December 2021

WOODARD &CURRAN

Legend

- Cuyama Basin
- Cuyama River
- Faults
- Groundwater Depth-to-Water Contours below Groundsurface

Well Depth Below Ground Surface Elevation

- Unknown
- 0 - 200 ft
- 200 - 400 ft
- 400 - 600 ft
- 600 - 800 ft
- 800 - 1000 ft
- 1000 - 1200 ft

Contours were interpolated using data measured from 2/1/2021 - 4/30/2021 due to limitated data availability.

Contours Interval: 50 ft.

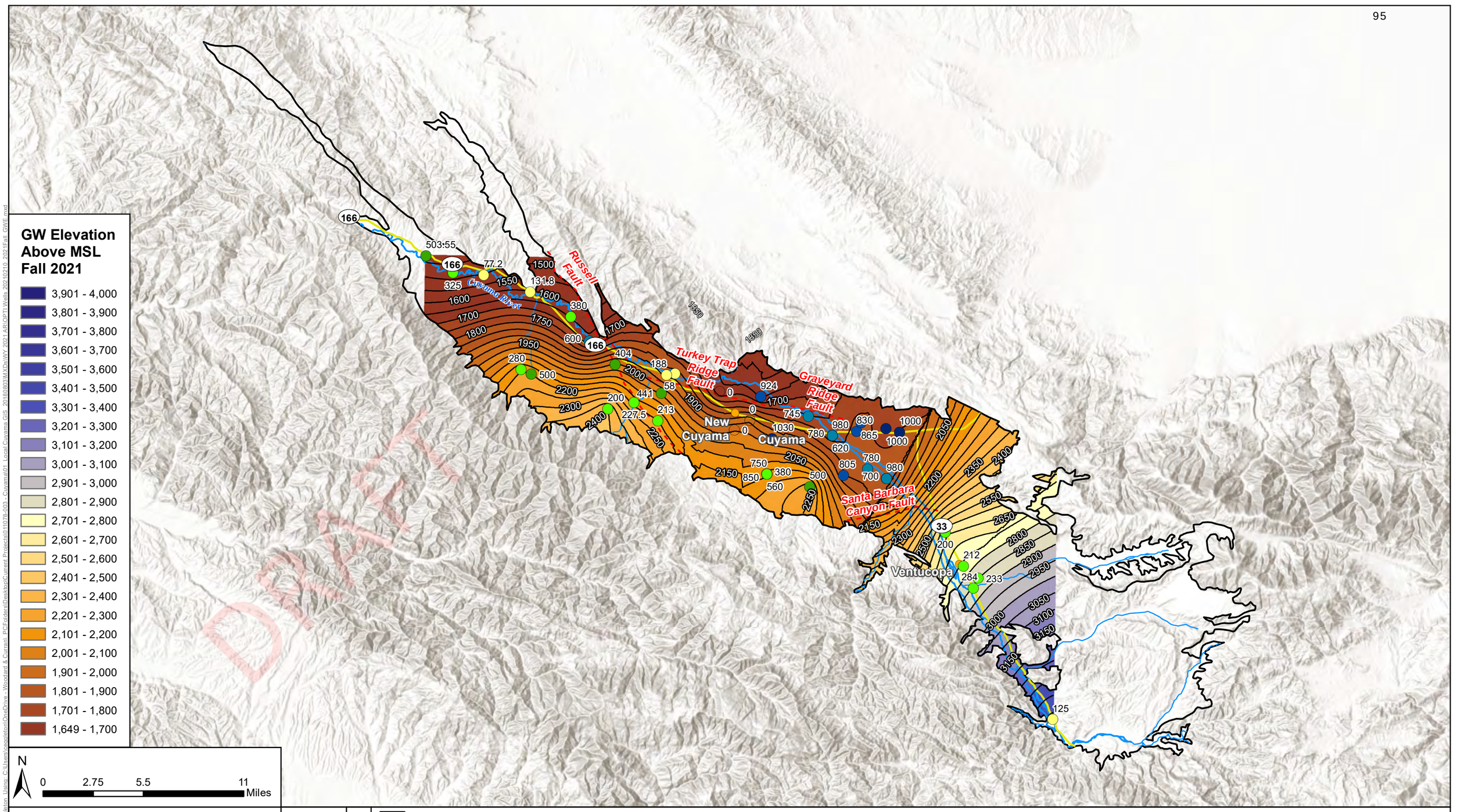


Figure 2-5: Cuyama GW Basin Fall 2021 Groundwater Elevation

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

December 2021

WOODARD &CURRAN

Legend

- Cuyama Basin
- Cuyama River
- Faults
- Groundwater Elevation Above MSL

Well Depth Below Ground Surface Elevation

- Unknown
- 0 - 200 ft
- 200 - 400 ft
- 400 - 600 ft
- 600 - 800 ft
- 800 - 1000 ft
- 1000 - 1200 ft

Contours were interpolated using data measured from 9/1/2021 - 11/30/2021 due to limited data availbility.

Contours Interval: 50 ft.

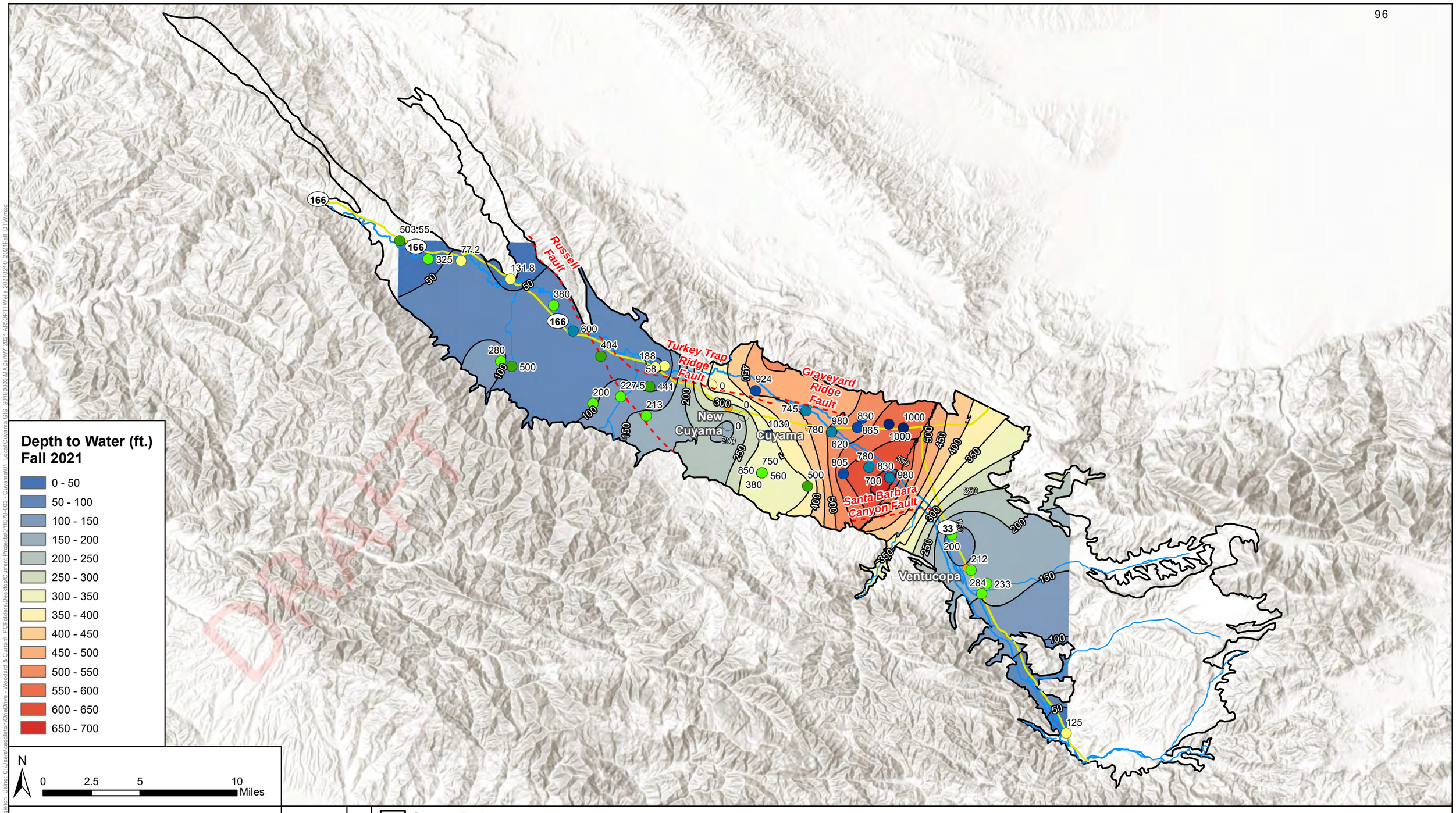


Figure 2-6: Cuyama GW Basin Fall 2021 Depth to Water

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

December 2021

WOODARD &CURRAN

Legend

- Cuyama Basin
- Cuyama River
- Faults
- Groundwater Depth-to-Water Contours below Groundsurface

Well Depth Below Ground Surface Elevation

- Unknown
- 0 - 200 ft
- 200 - 400 ft
- 400 - 600 ft
- 600 - 800 ft
- 800 - 1000 ft
- 1000 - 1200 ft

Contours were interpolated using data measured from 9/1/2021 - 11/30/2021 due to limited data availability.

Contours Interval: 50 ft.

2.3 Hydrographs

Groundwater hydrographs were developed for each 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 well are presented in Appendix A.[3]

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 2-4** 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 2-4: Groundwater Trends by Threshold Regions

Threshold Region	Groundwater Trend	Example Well(s)
Northwestern Region	Slight downward trend influenced by seasonal fluctuations. This is expected as recent changes in land use have begun to pump groundwater. Levels are still approximately 80 ft above the Measurable Objective.	841 (**Figure 2-7**)
Western Region	Levels in this region have either stayed relatively flat or slightly increased.	571 (Error! Reference source not found.)
Central Region	Levels have historically had a steady downward trend with some seasonal fluctuations. This pattern remains with trends continuing downward and, in some cases, levels surpassing minimum thresholds.	74 and 91 (**Figure 2-9 & Figure 2-10**)
Eastern Region	This region has seen an overall decline over several decades, however, recent groundwater trends appear to be approaching equilibrium.	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**)

[3] Hydrographs in the appendix for this report include those that have recent monitoring data but will be removed based on monitoring network refinements described in this report. Subsequent Annual Reports for the Cuyama Basin will not include these hydrographs.

Northwestern Region

Central Region

Western Region

Badlands Region

Eastern Region

Southeastern Region

Russell Fault

Santa Barbara Canyon Fault

Ventucopa

833 836 830 832 845 841 117 571 118 124 573 568 114 102 112 106 107 474 604 609 74 72 103 608 615 612 77 613 633 629 325 322 324 99 96 98 95 610 317 91 101 62 85 100 89 2

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

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

January 2019

WOODARD &CURRAN

Legend

- Cuyama Basin
- Representative Wells (Refined)
- Towns
- Example Hydrograph Wells
- Faults
- Highways
- Cuyama River
- Streams

Threshold Regions

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

N

0 2.5 5 10 Miles

Figure 2-7: Example Well Hydrographs – Northwestern Region

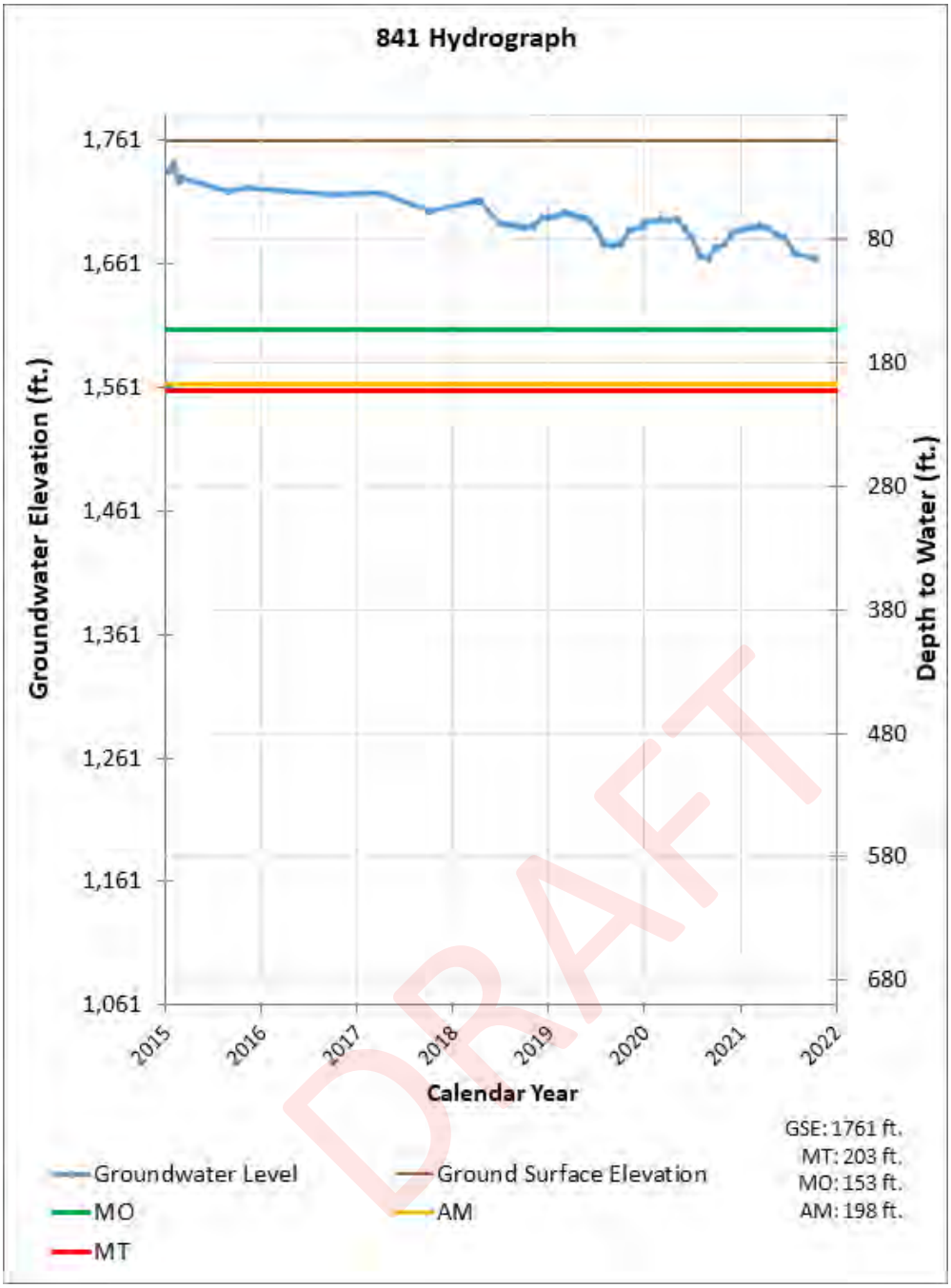


Figure 2-8: Example Well Hydrographs – Western Region

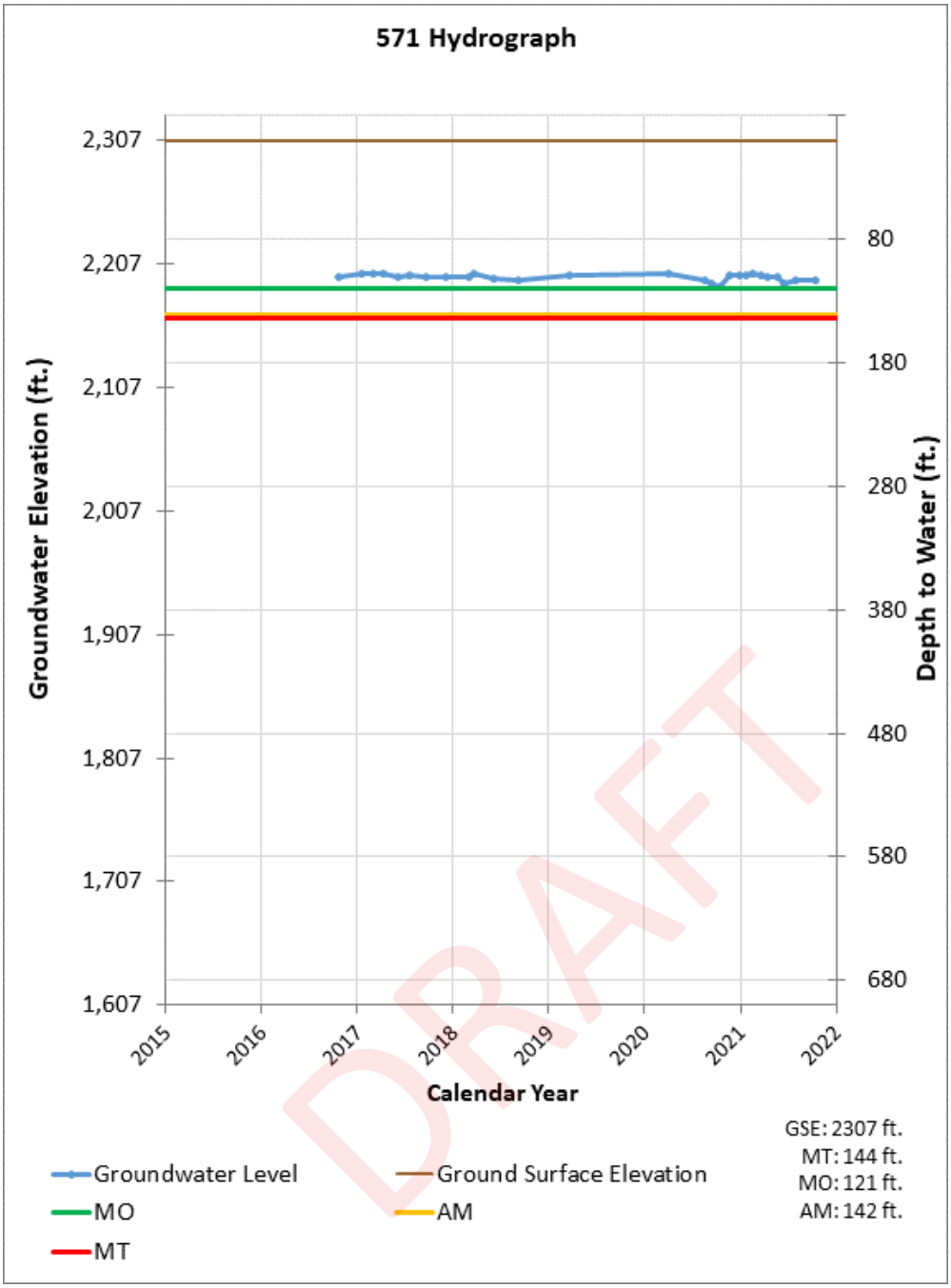


Figure 2-9: Example Well Hydrographs – Central Region

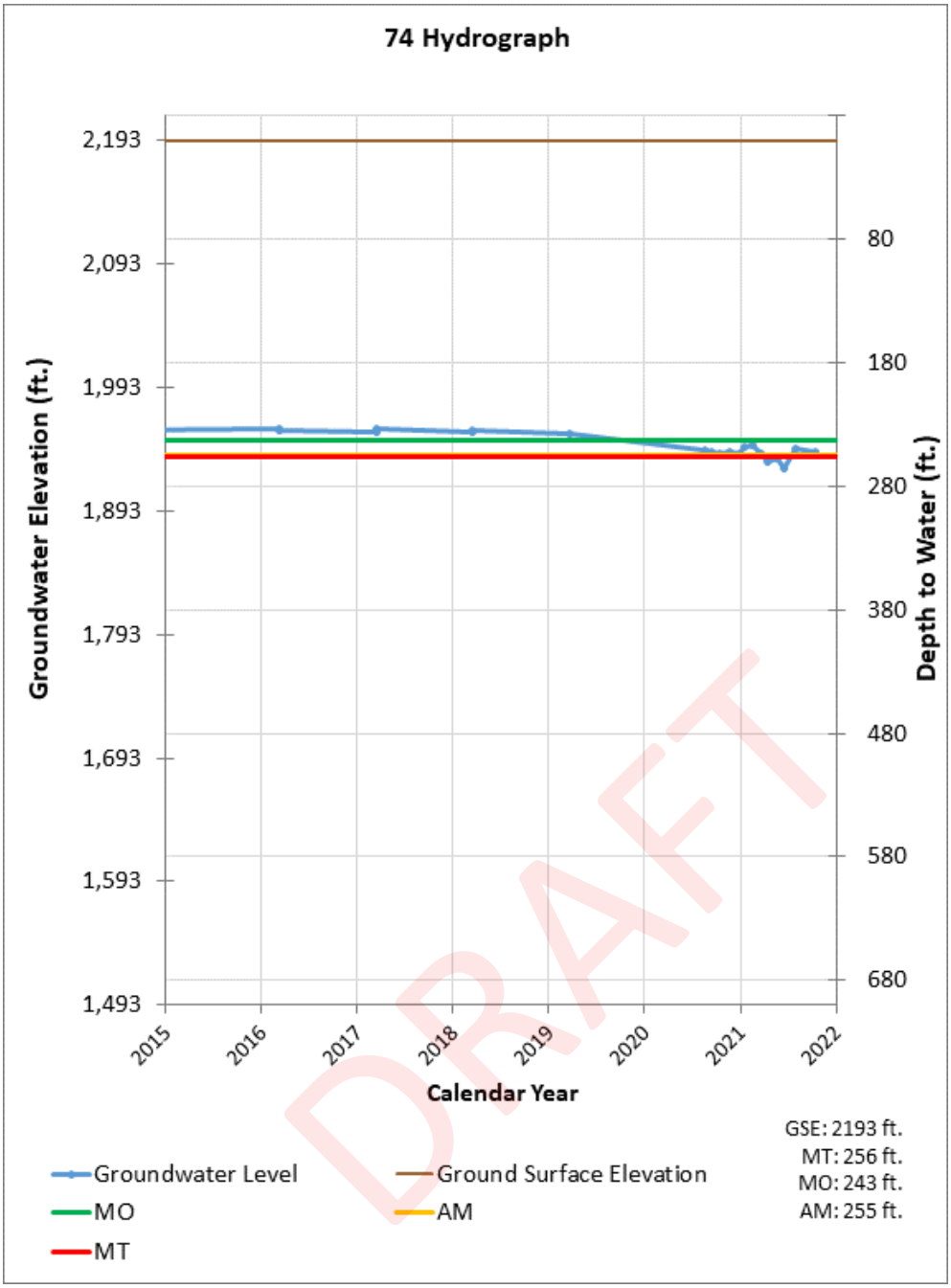


Figure 2-10: Example Well Hydrographs – Central Region

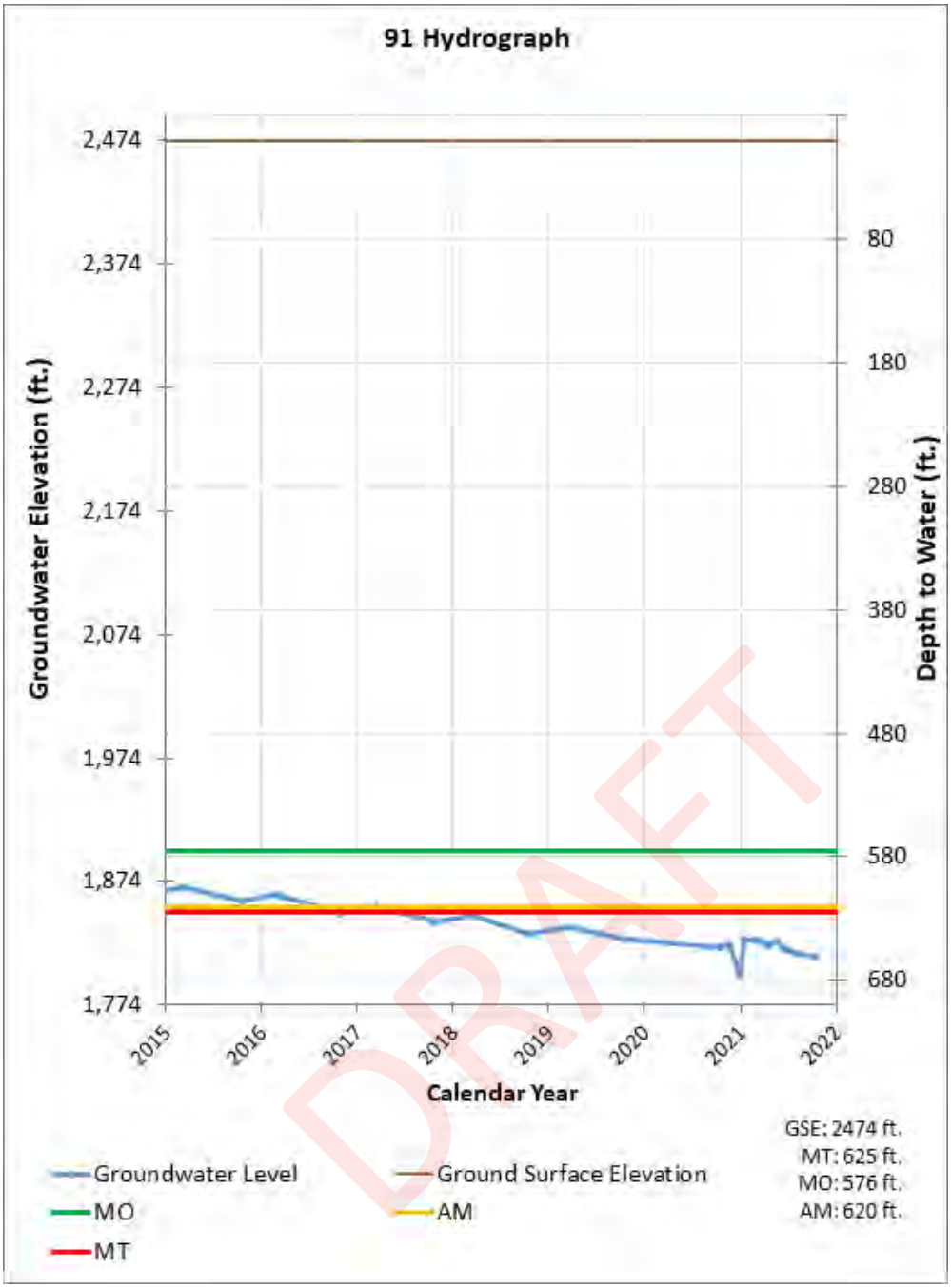


Figure 2-11: Example Well Hydrographs – Eastern Region

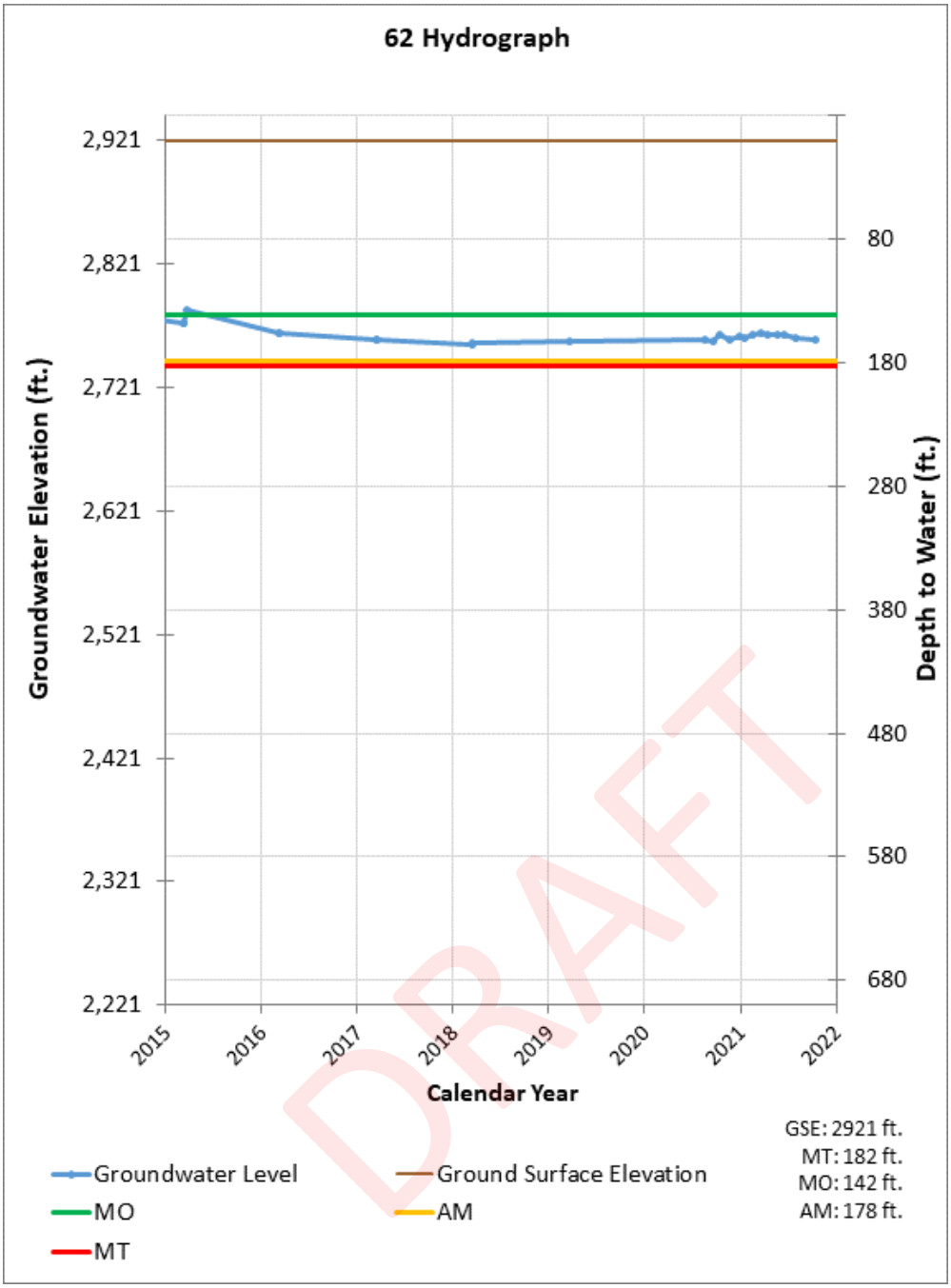
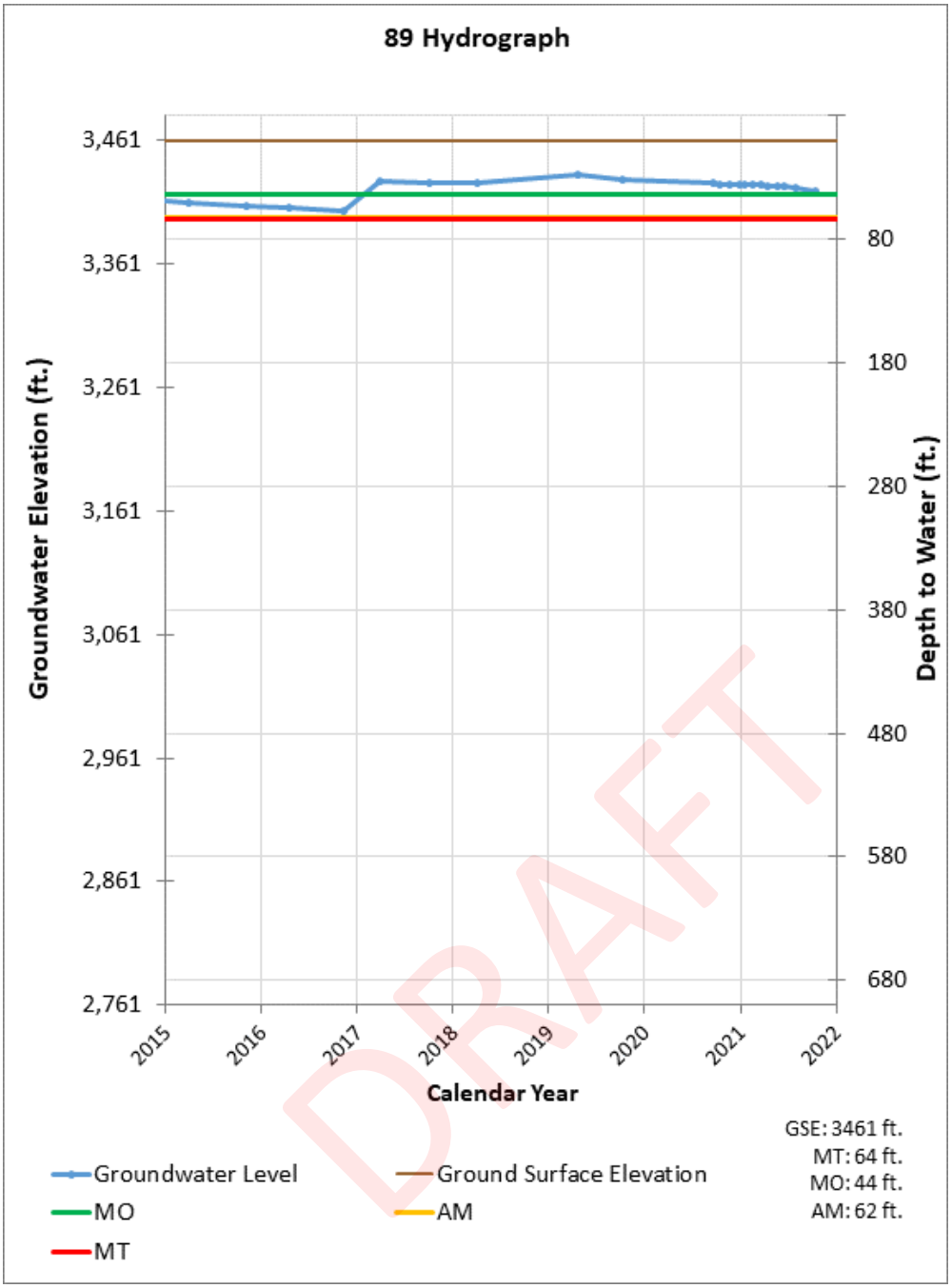


Figure 2-12: Example Well Hydrographs – Southeastern Region



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%. 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 past three Annual Reports, the CBWRM model was extended to include the 2018 through 2021 water years, utilizing updated land use, temperature, and precipitation[4] data from those years.

Figure 3-1 shows the annual time series of groundwater pumping for the water years 1998 through 2021. The CBWRM estimates a total groundwater extraction amount of 59,300 AF in the Cuyama Basin in the 2021 water year. 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.

[4] It should be noted that 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.

Figure 3-1: Annual Groundwater Extraction in the Cuyama Basin in Water Years 1998-2021

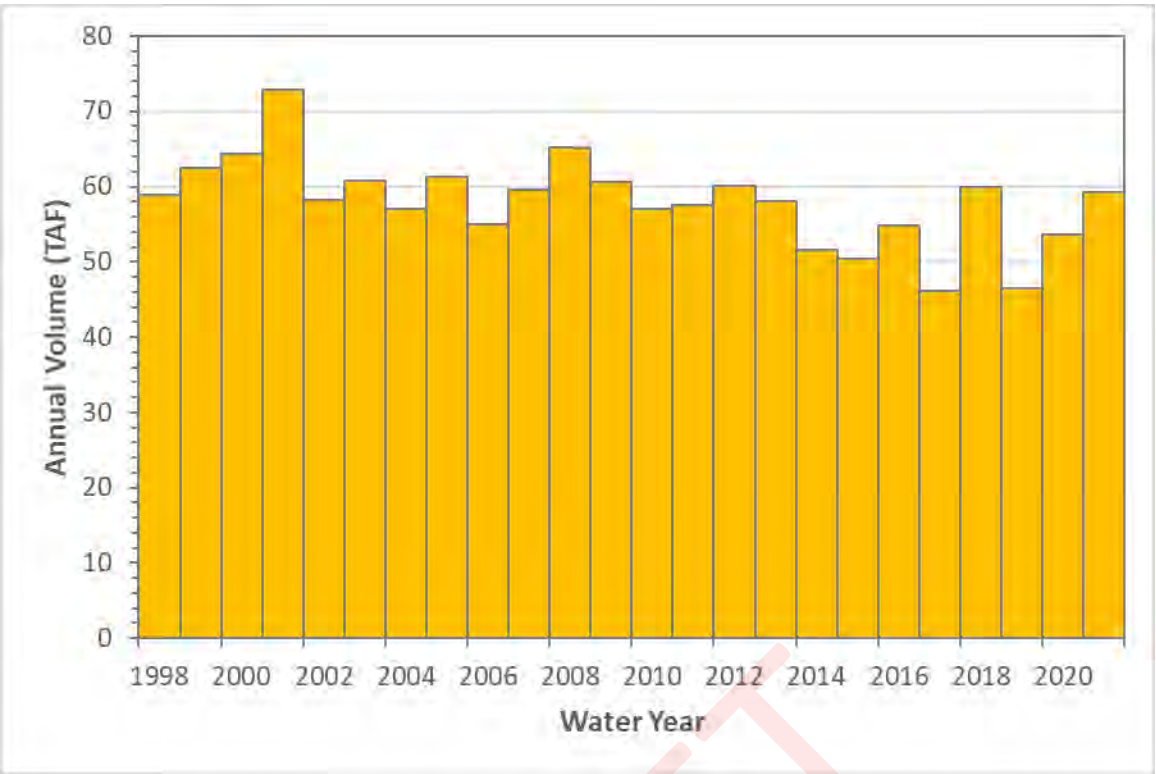


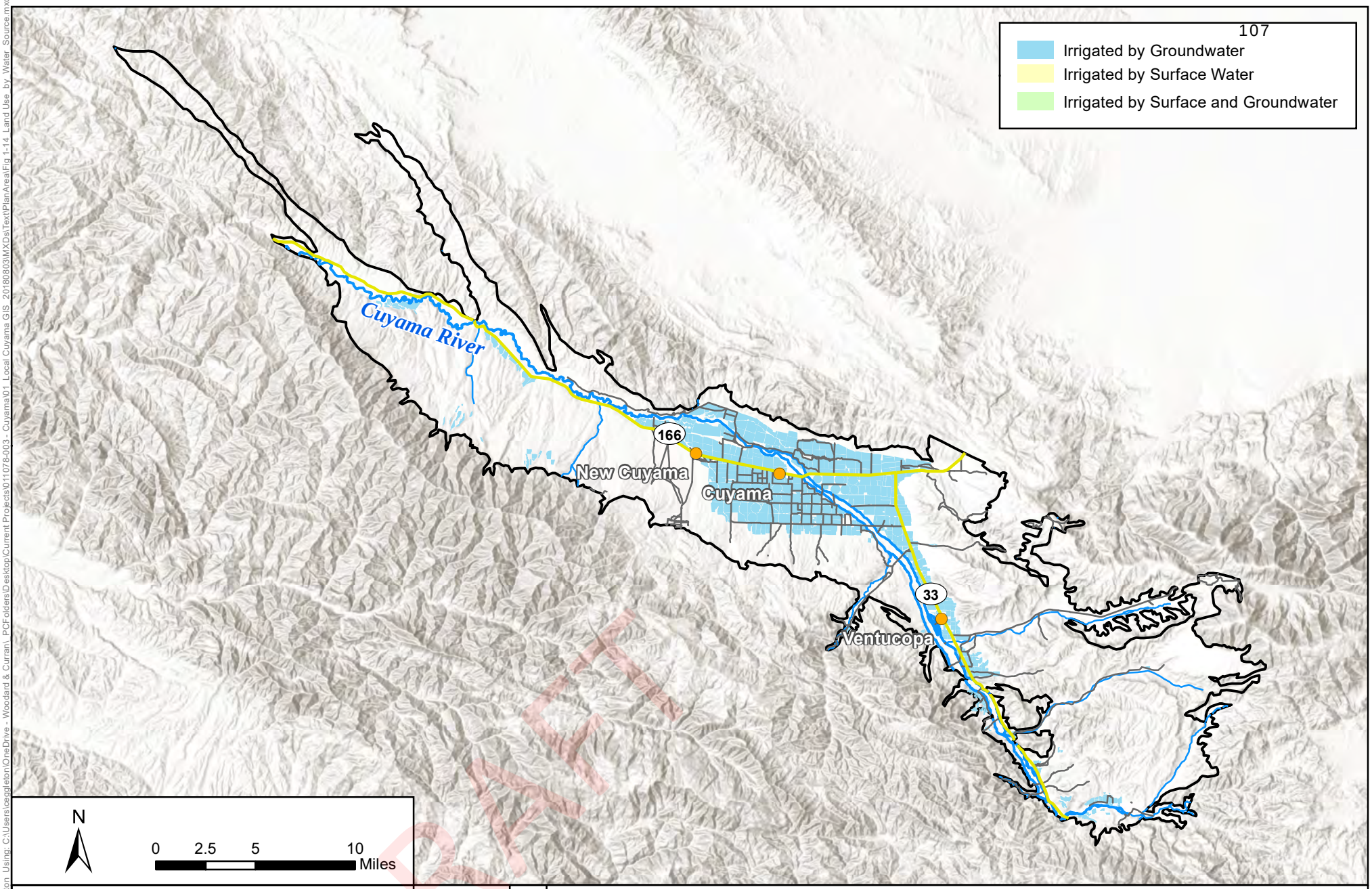
Figure 3-2 shows the locations where groundwater is applied in the Basin. The locations of groundwater use have not changed since completion of the GSP.

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.



N

0 2.5 5 10 Miles

Figure 3-2 - Land Use by Water Source

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2021

WOODARD &CURRAN

Legend

- Cuyama Basin
- Towns
- Highways
- Local Roads
- Cuyama River
- Streams/Creeks

Source: California Department of Water Resources Statewide Crop Mapping, 2016 dataset. https://gis.water.ca.gov/app/CADWRLandUseViewer/

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 2020 and fall 2021. 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 2021 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 year are shown in **Table 4-1**. The CBWRM estimates reductions in groundwater storage of 14,800 AF in 2019, 23,600 AF in 2020, and 40,000 AF in 2021.

Table 4-1: Groundwater Budget Estimates for Water Years 2019, 2020 and 2021

Component	Water Year 2019 (AFY)	Water Year 2020 (AFY)	Water Year 2021 (AFY)
Inflows			
Deep percolation	26,200	25,700	18,100
Stream seepage	3,900	2,800	-200
Subsurface inflow	1,600	1,500	1,400
Total Inflow	31,700	30,000	19,300
Outflows			
Groundwater pumping	46,500	53,600	59,300
Total Outflow	46,500	53,600	59,300
Change in Storage	**-14,800**	**-23,600**	**-40,000**

26.2 ft.
-2 ft.
-3.9 ft.
-2.7 ft.
-0.9 ft.
-9.4 ft.
-0.5 ft.
-3.7 ft.
-1.4 ft.
-49.9 ft.
-0.6 ft.
-0.3 ft.
-8.2 ft.
8.2 ft.
New Cuyama
3.7 ft.
1.4 ft.
2.2 ft.
-5.1 ft.
-22.1 ft.
-7.6 ft.
-80.9 ft.
-17.4 ft. (M)
-5.1 ft. (D)
-9 ft. (M)
-7.9 ft. (D)
0.9 ft.
-6.6 ft.
-2.2 ft.
-2 ft. (S)
-2 ft. (M)
-7.2 ft. (D)
0.5 ft.
-3.2 ft.
2.5 ft.
-0.1 ft.
-5.1 ft.
166
33
300

Change in Groundwater Levels, Fall 2020 to 2021 (ft.)

- -100 to -50
- -50 to -20
- -20 to -10
- -10 to -5
- -5 to 0
- 0 to 5
- 5 to 10
- 10 to 20
- 20 to 50
- 50 to 100

0 1.5 3 6 Miles

Figure 4-1: Cuyama GW Basin Fall 2020 to 2021 GWL Change

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

January 2022

WOODARD &CURRAN

Legend

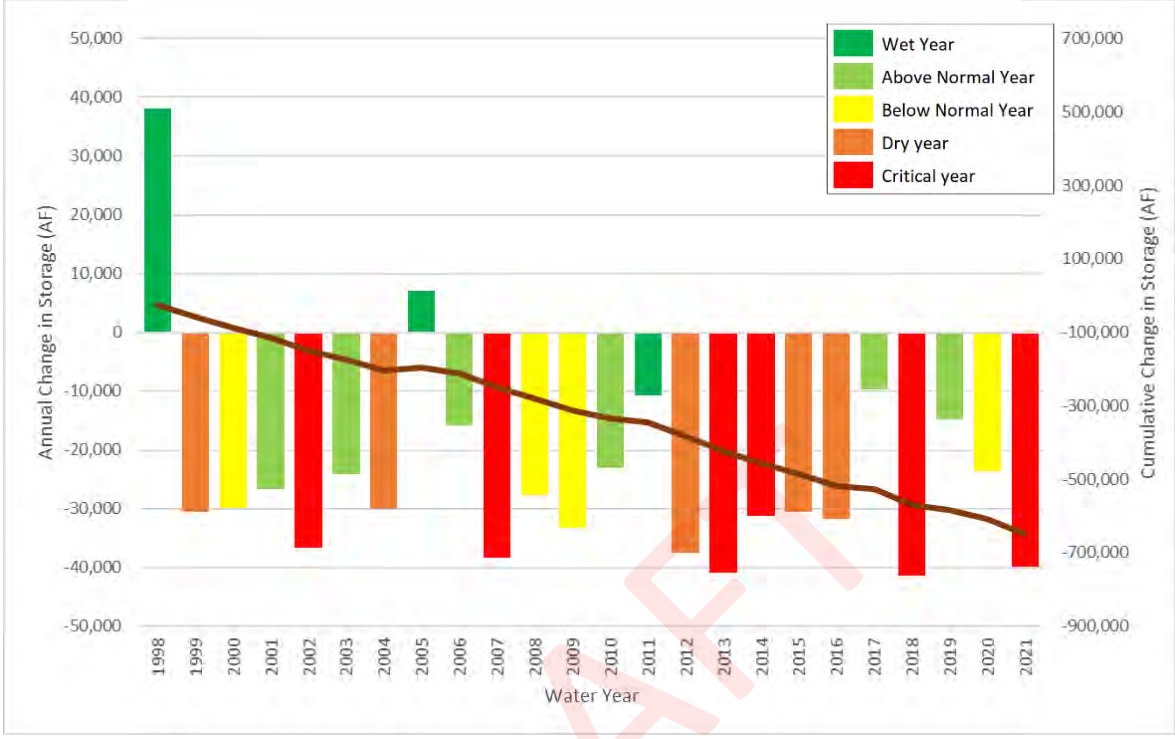
- Cuyama Basin
- Cuyama River
- Fall 2020-2021 Overlapping Wells

Well labels are the change in groundwater elevations from Fall 2020 to 2021.

Rasters have been developed as an estimation tool. Areas of overlapping interpolation data for Fall 2020 and Fall 2021 are interpolated using data measured from September 1st and November 30th of each year due to limiated data avilability. It should be noted this information should be used with individual well hydrographs to make a more informative analysis of groundwater conditions.

Figure 4-2 shows the historical change in groundwater storage by year, water year type,[5] and cumulative water volume in each year for the period from 1998 through 2021. 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



[5] 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.

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, all of which are representative, and are listed in **Table 5-1** and shown on **Figure 5-1**.

The CBGSA began collecting groundwater quality data in early 2021 and has collected TDS measurements at 23 wells, all of which are part of the groundwater quality representative monitoring network. The results are listed in **Table 5-1** and shown on **Figure 5-2**. Of the 23 wells measured in water year 2021, five wells exceeded their measurable objective, and three wells exceeded the minimum threshold and 2025 interim milestone. Therefore, 22% of measured wells exceeded their measurable objective and 13% exceeded their minimum threshold. However, 64% of wells were not sampled do to limit access. Furthermore, since the measurement at many of these wells was the first one taken in many years, 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 intends to reevaluate the groundwater quality representative monitoring network based on the well information, site access, and landowner participation moving forward to ensure that the representative monitoring network both provides adequate coverage and representative data for the Basin while ensuring continued and consistent monitoring is conducted over the implementation horizon. This may also include reassessing threshold values and consideration of the proper translation of measured electrical conductivity (EC) versus TDS.

The CBGSA is currently pursuing grant funding to fund quarterly monitoring of groundwater levels and annual monitoring of groundwater quality for total dissolved solids (TDS) at existing monitoring locations for three years, as well as one-time testing of groundwater quality for nitrate and arsenic at existing groundwater quality representative monitoring network locations.

The CBGSA also intends to leverage and make use of existing monitoring programs for nitrates and arsenic (in particular ILP for nitrates and USGS for arsenic). To supplement the understanding of nitrate and arsenic concentrations in the basin, the GSP intends to perform an additional measurement of nitrate and arsenic at each water quality well identified in the GSP (GSP Figure 4-20) during calendar year 2022. This will provide a baseline constituent level in all groundwater quality representative monitoring network locations that can be utilized for future basin planning. Additional measurements may be considered by the GSA in the future in anticipation of future five-year updates.

Table 5-1: Groundwater Quality Monitoring Network Well List and TDS Results

Opti ID	Measurement Date	TDS Measurement (mg/L)	MO (mg/L)	MT (mg/L)	2025 Interim Milestone (mg/L)
61	---	---	585	615.2	615
72	2/25/2021	559	996	1,023	1,023
73	---	---	805	855.9	856
74	2/25/2021	1260	1,500	1,833	1,833
76	2/25/2021	1270	1,500	2,306.90	2,307
77	2/16/2021	1070	1,500	1,592	1,592
79	3/17/2021	1790	1,500	2,320	2,320
81	---	---	1,500	2,788	2,788
83	3/17/2021	1120	1,500	1,726	1,726
85	---	---	618	1,391.20	1,391
86	---	---	969	974.7	975
87	---	---	1,090	1,164.80	1,165
88	2/25/2021	330	302	302	302
90	---	---	1,500	1,593	1,593
91	---	---	1,410	1,487	1,487
94	3/17/2021	964	1,050	1,245	1,245
95	2/15/2021	1290	1,500	1,866	1,866
96	2/25/2021	1210	1,500	1,632	1,632
98	---	---	1,500	2,400	2,400
99	2/16/2021	1010	1,490	1,562	1,562
101	---	---	1,500	1,693	1,693
102	2/25/2021	905	1,500	2,351	2,351
130	---	---	1,500	1,855	1,855
131	---	---	1,500	1,982	1,982
157	3/17/2021	1360	1,500	2,360	2,360
196	---	---	851	903.7	904
204	2/26/2021	364	253	268.6	269
226	---	---	1,500	1,844	1,844
227	---	---	1,500	2,230	2,230
242	2/26/2021	826	1,470	1,518	1,518
269	---	---	1,500	1,702	1,702
309	---	---	1,410	1,509	1,509
316	---	---	1,380	1,468	1,468

Opti ID	Measurement Date	TDS Measurement (mg/L)	MO (mg/L)	MT (mg/L)	2025 Interim Milestone (mg/L)
317	2/25/2021	692	1,260	1,337	1,337
318	---	---	1,080	1,152	1,152
322	2/16/2021	1120	1,350	1,386	1,386
324	2/25/2021	488	746	777.2	777
325	2/25/2021	746	1,470	1,569	1,569
400	3/17/2021	1350	918	975.6	976
420	---	---	1,430	1,490	1,490
421	2/25/2021	797	1,500	1,616	1,616
422	---	---	1,500	1,942	1,942
424	---	---	1,500	1,588	1,588
467	3/17/2021	1140	1,500	1,764	1,764
568	2/15/2021	872	871	1,191.40	1,191
702	---	---	110	2,074.40	2,074
703	---	---	400	4,096.80	4,097
710	---	---	1,040	1,040	1,040
711	---	---	928	928	928
712	---	---	977	977.5	978
713	---	---	1,200	1,200	1,200
721	---	---	1,500	2,170	2,170
758	---	---	900	954.3	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

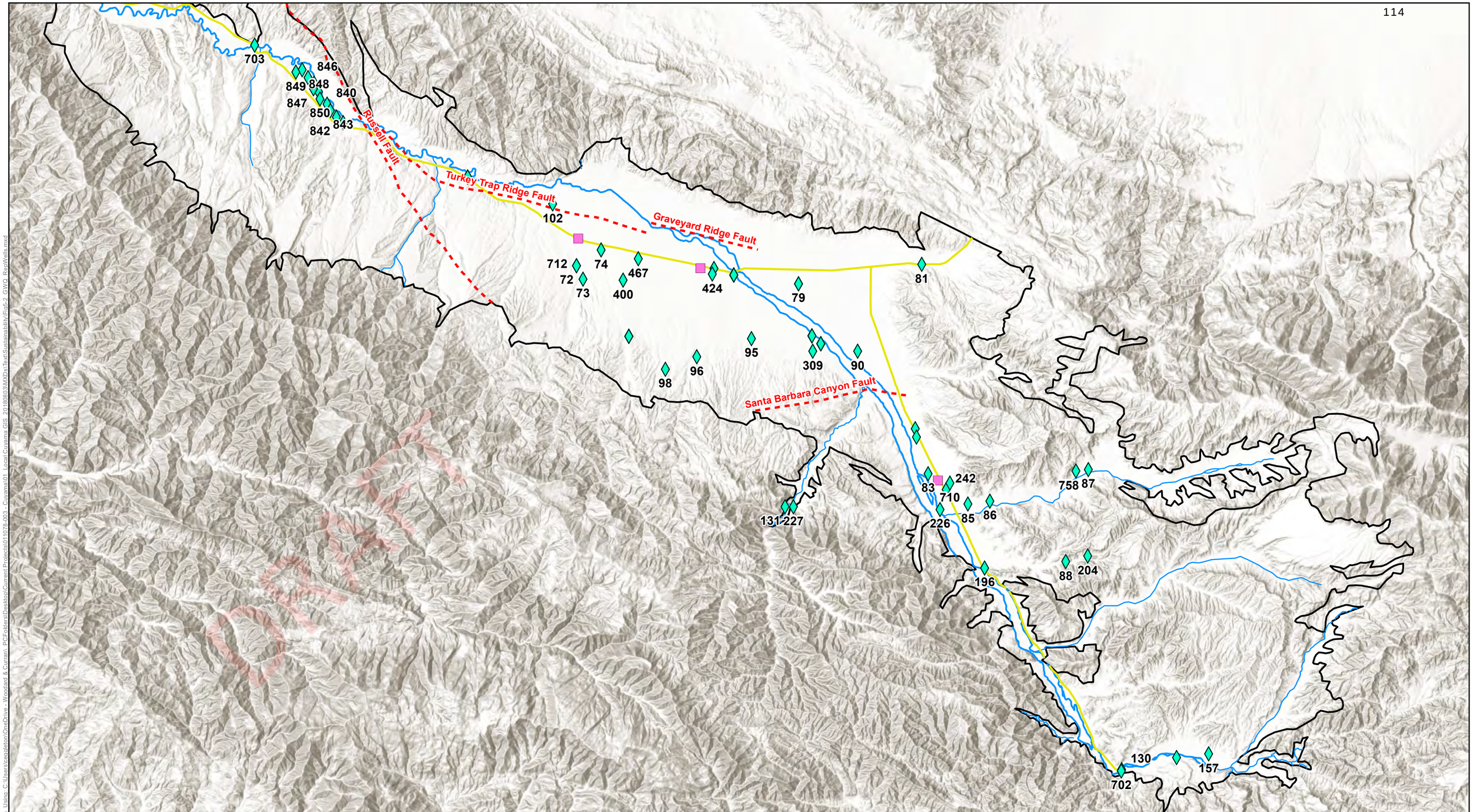


Figure 5-1: Cuyama GW Basin Groundwater Quality Representative Wells

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

April 2019

WOODARD &CURRAN

Legend

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

N

0 1.75 3.5 7 Miles

166

33

N

0 1.25 2.5 5 Miles

Figure 5-2: 2021 Groundwater Quality Measurements

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

January 2022

WOODARD &CURRAN

Legend

Total Dissolved Solids (TDS) (mg/L)

- < 500
- 500 - 750
- 750 - 1000
- 1000 - 1250
- 1250 - 1500
- 1500 - 1750
- 1750 - 2

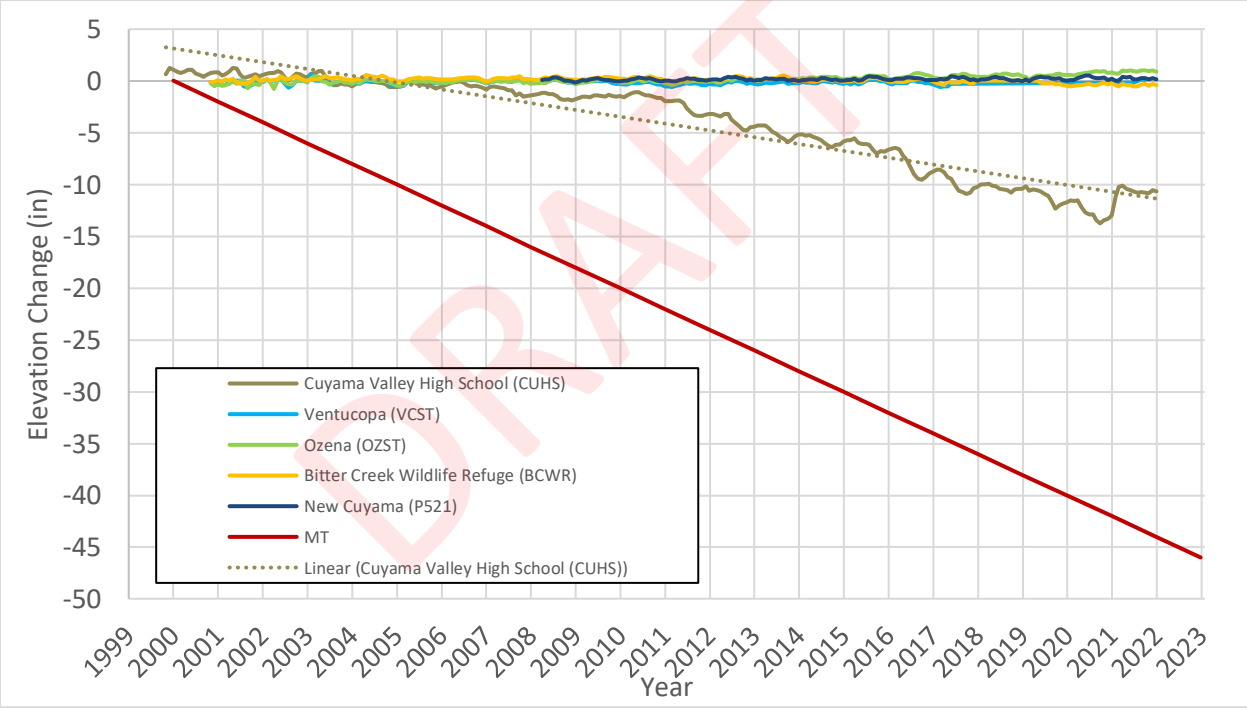
Section 6. Land Subsidence

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 2021 was downloaded from UNAVCO[6] and the subsidence trend for CUHS was recalculated. Subsidence rates during 2021 actually reflected a positive change in ground surface elevation, and current subsidence rates in the central portion of the Basin are now -16.4 mm per year or -0.65 inches per year. This is rate is still below the minimum threshold, and thus undesirable results for subsidence are not occurring in the Basin.

Figure 6-1: Subsidence Monitoring Data



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

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 monthly groundwater condition reports based on the data collected to monitoring groundwater levels. Current data collection occurs monthly with corresponding reports, however, at its January 2021 meeting, the CBGSA Board determined to shift to quarterly monitoring starting in October 2021 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) taken in October 2021 at each well and compares them to their respective 2025 IMs. As is shown in the table, 33 wells are currently above their IM, while 16 are below, relative to the most recent measurement. Eleven wells did not have data available either in November or December, either because an access agreement has not granted, or the well was inaccessible. As there are still four years before 2025, the CBGSA will use its regular groundwater condition reports to closely monitor the Basin's progress towards sustainability and its IMs.

Table 7-1: Measured Depths to Groundwater in November & December 2020 Compared to 2025 Interim Milestones

Well	Region	Oct-21 DTW (feet)	2025 IM (feet)	Status
72	Central	178	169	Below IM
74	Central	252	256	Above IM
77	Central	498	450	Below IM
91	Central	665	625	Below IM
95	Central	604	573	Below IM
96	Central	334	333	Below IM
98	Central	-	450	Unknown
99	Central	359	311	Below IM
102	Central	378	235	Below IM
103	Central	327	290	Below IM
112	Central	85	87	Above IM
114	Central	47	47	Above IM
316	Central	665	623	Below IM
317	Central	665	623	Below IM
322	Central	369	307	Below IM
324	Central	348	311	Below IM
325	Central	314	300	Below IM
420	Central	511	450	Below IM
421	Central	507	446	Below IM
422	Central	-	444	Unknown
474	Central	163	188	Above IM
568	Central	39	37	Below IM
604	Central	480	526	Above IM
608	Central	462	436	Below IM
609	Central	-	458	Unknown
610	Central	631	621	Below IM
612	Central	-	463	Unknown
613	Central	524	503	Below IM
615	Central	514	500	Below IM
620	Central	-	606	Unknown
629	Central	578	559	Below IM
633	Central	579	547	Below IM
62	Eastern	160	182	Above IM
85	Eastern	200	233	Above IM
100	Eastern	152	181	Above IM
101	Eastern	110	111	Above IM
840	Northwestern	-	203	Unknown
841	Northwestern	98	203	Above IM
843	Northwestern	-	203	Unknown
845	Northwestern	70	203	Above IM
849	Northwestern	-	203	Unknown
2	Southeastern	-	72	Unknown
89	Southeastern	35	64	Above IM

Well	Region	Oct-21 DTW (feet)	2025 IM (feet)	Status
106	Western	143	154	Above IM
107	Western	91	91	Above IM
108	Western	-	165	Unknown
117	Western	-	160	Unknown
118	Western	59	124	Above IM
123	Western	-	31	Unknown
124	Western	-	73	Unknown
127	Western	-	42	Unknown
571	Western	124	144	Above IM
573	Western	71	118	Above IM
830	Far-West Northwestern	60	59	Below IM
831	Far-West Northwestern	-	77	Unknown
832	Far-West Northwestern	39	45	Above IM
833	Far-West Northwestern	26	96	Above IM
834	Far-West Northwestern	-	84	Unknown
835	Far-West Northwestern	-	55	Unknown
836	Far-West Northwestern	38	79	Above IM

7.2 Funding to Support GSP Implementation

On May 5, 2021, the CBGSA Board held a rate hearing and set a groundwater extraction fee of $39 per acre-foot for FY 21-22. The fee was based on user-reported water usage totaling 28,000 acre-feet and the Fiscal Year 2021-2022 budget totaling $1.3 million, a portion of which was met with existing funds. For FY 21-22 and FY 22-23, the CBGSA will administer the annual fee based on crop factors but will transition to metered data for the administration of the FY 23-24 fee.

Additionally, the CBGSA unsuccessfully applied for Proposition 68 SGM Implementation Grant funding from DWR in January of 2021 to support implementation activities, with a total requested grant amount was $5,000,000.

The CBGSA has recently submitted a proposal to DWR for $7.6 million in funding under the Critically Overdrafted Basin (COD) SGMA Implementation grant opportunity, with funding requested for the following activities over the next three years:

- Ongoing Monitoring and Enhancements
- Project and Management Action Implementation
- GSP Implementation and Outreach Activities
- Improving Understanding of Basin Water Use

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 2020-2021 water year.

- CBGSA Board meetings: November 4, January 13, March 3, May 5, July 7, August 18, and September 1, and November 3
- Standing Advisory Committee (SAC) meetings: October 29, January 7, February 25, April 29, July 1, August 11, and August 26

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	Conceptual project evaluated in 2015	• 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	Initial Feasibility Study completed in 2016	• 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	Preliminary studies/planning complete	• 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	Preliminary coordination begun	• Pumping Allocation Study completed: 2022 • Allocations implemented: 2023 through 2040	• Plan: $300,000 • Implementation: $150,000 per year
Adaptive Management	Not yet begun	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.

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.

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.

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

As noted in last year's Annual Report, the CCSD received a grant award from DWR's IRWM program to install a new production well. Work to install this well is currently underway.

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

On May 5, 2021, the CBGSA Board adopted a resolution delegating the implementation of management actions in the Central Management Area to the Cuyama Basin Water District (CBWD). However, on August 5, 2021, the CBWD informed the CBGSA it was disinclined to pursue delegation at this time. On August 17, 2021, an adjudication was filed by two large growers in the basin. Therefore, CBGSA staff has taken over the implementation of pumping reductions in the Central Management Area and is working with the Board and stakeholders to implement pumping allocations in the Central Management Area starting in January 2023.

7.6 Adaptive Management

With several wells in the basin trending towards undesirable results, the CBGSA Board undertook an effort 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. To support the understanding of potential impacts, a form was added to the CBGSA website to allow landowners to report issues that occur with wells due to groundwater level declines. Potential actions that have been considered by the Board include restricting pumping in individual wells, adjusting minimum thresholds or

the undesirable result criteria identified in the GSP, and accelerating basin-wide pumping reductions. However, the CBGSA Board has determined that additional data collection and analysis is needed, and no specific actions have been taken. The CBGSA will continue to evaluate potential actions going forward.

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

As described in the previous annual reports, on December 4, 2019, the CBGSA Board approved a task to begin implementation of the groundwater levels monitoring network. As part of this task, well information sheets were prepared for each well in the monitoring network to allow for implementation of regular monitoring at each well. This work was completed in early 2021, and monthly groundwater data were collected at each well in the monitoring network through July 2021. Starting in October 2021, the CBGSA transitioned to quarterly monitoring at each well.

As described in Section 2.1 above, the CBGSA has begun to refine the groundwater monitoring network to be more efficient, manageable, and economical for monitoring while retaining reliability and adequate representation of the Basin. The refined monitoring network is included in **Table 2-1** and **Figure 2-1**.

In addition, under a Category 1 grant from DWR, continuous monitoring equipment was installed in 10 additional wells in early 2021. These wells are also identified in **Table 2-1** and **Figure 2-1** shows the locations selected for installation.

The CBGSA worked with DWR's Technical Support Services (TSS) to install three new multi-completion monitoring wells within the Basin during 2021. These wells are identified in **Table 2-1**, with locations shown in **Figure 2-1**.

Finally, as described above the CBGSA completed a survey of all the groundwater level monitoring network wells in 2021. This included re-measuring latitudes, longitudes, elevations, and other metadata associated with each well. Groundwater level measurement data collected before this survey has been adjusted and will be reuploaded to DWR to adequately reflect the resulting differences in elevations.

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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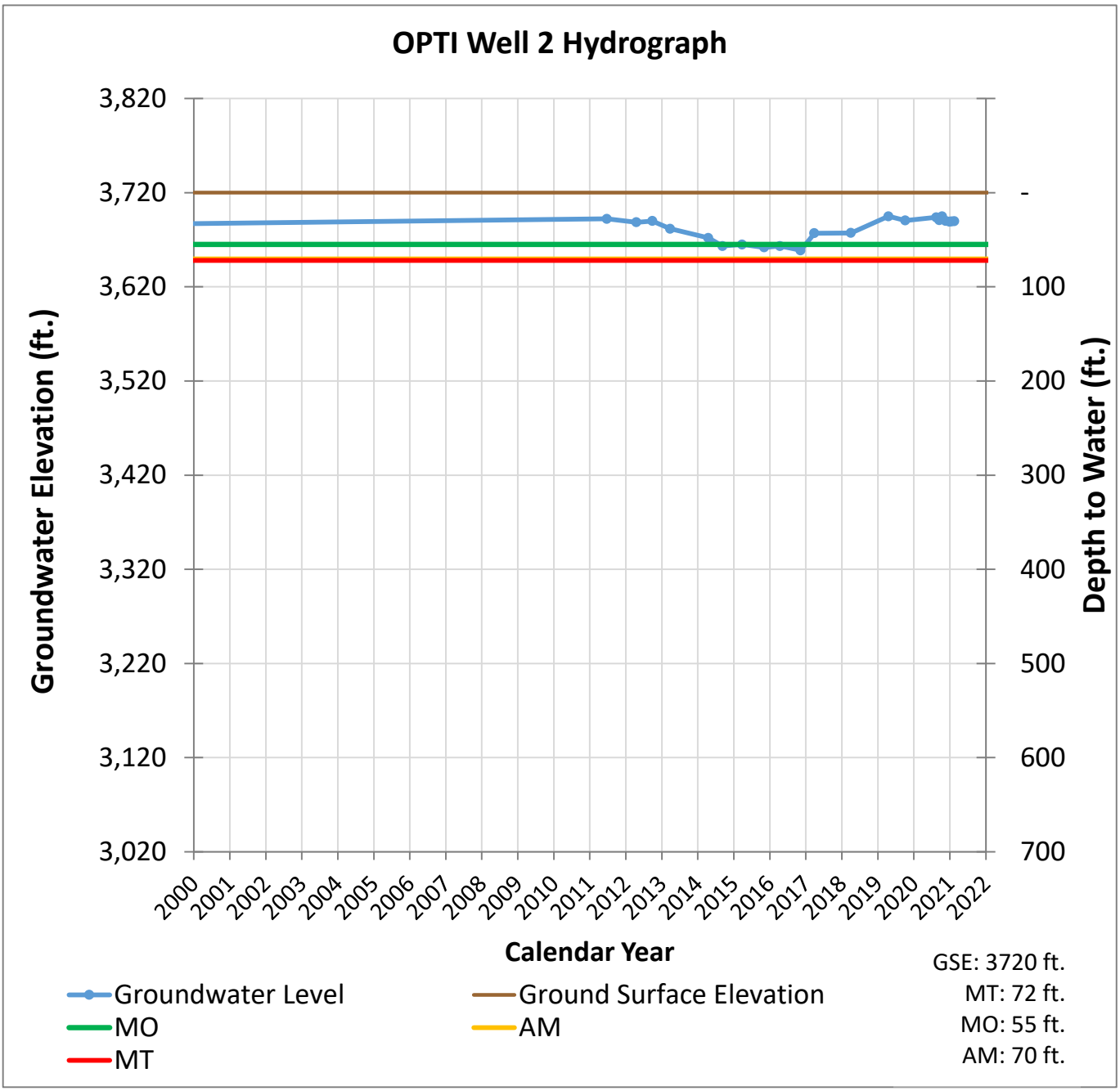
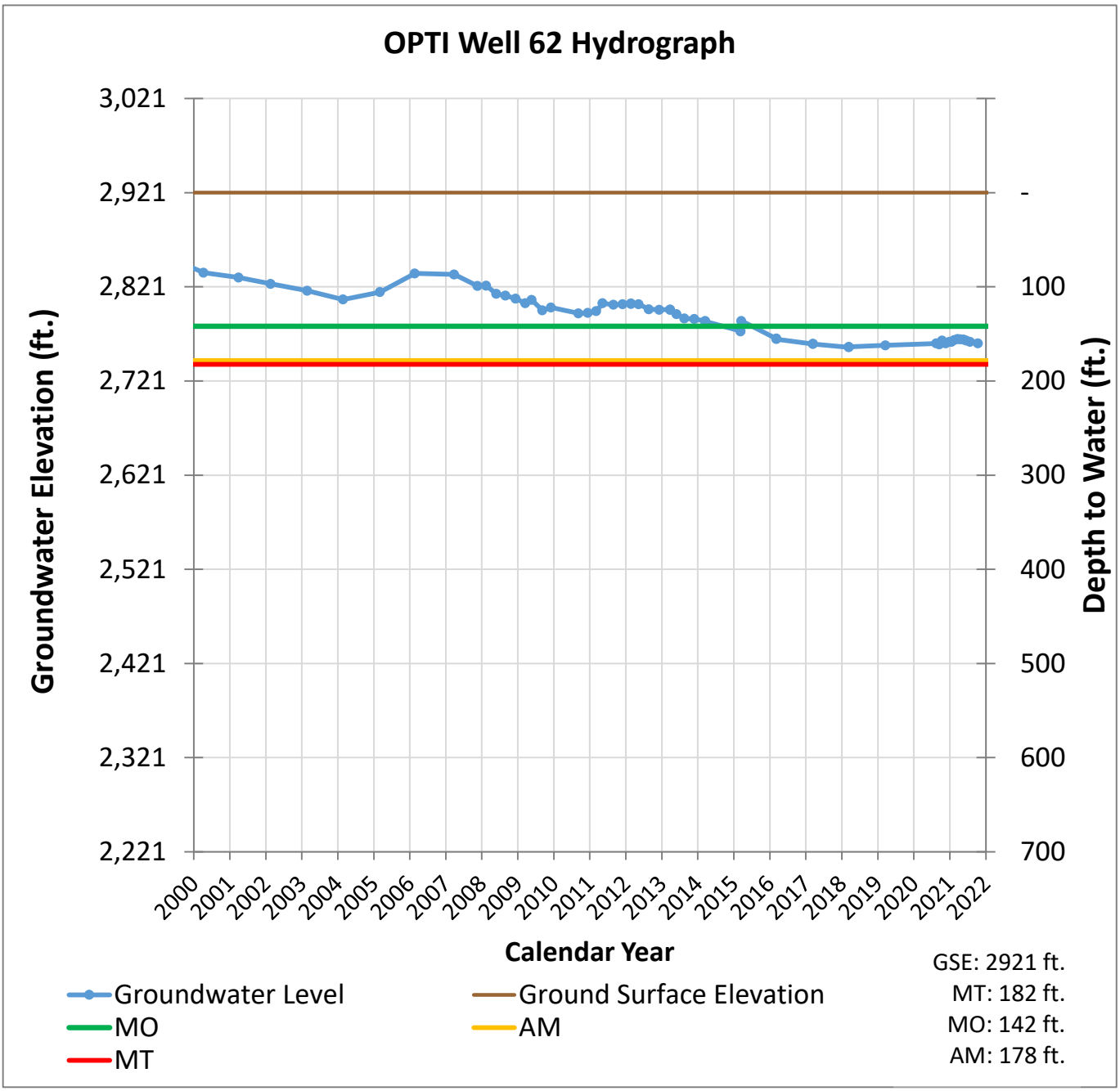
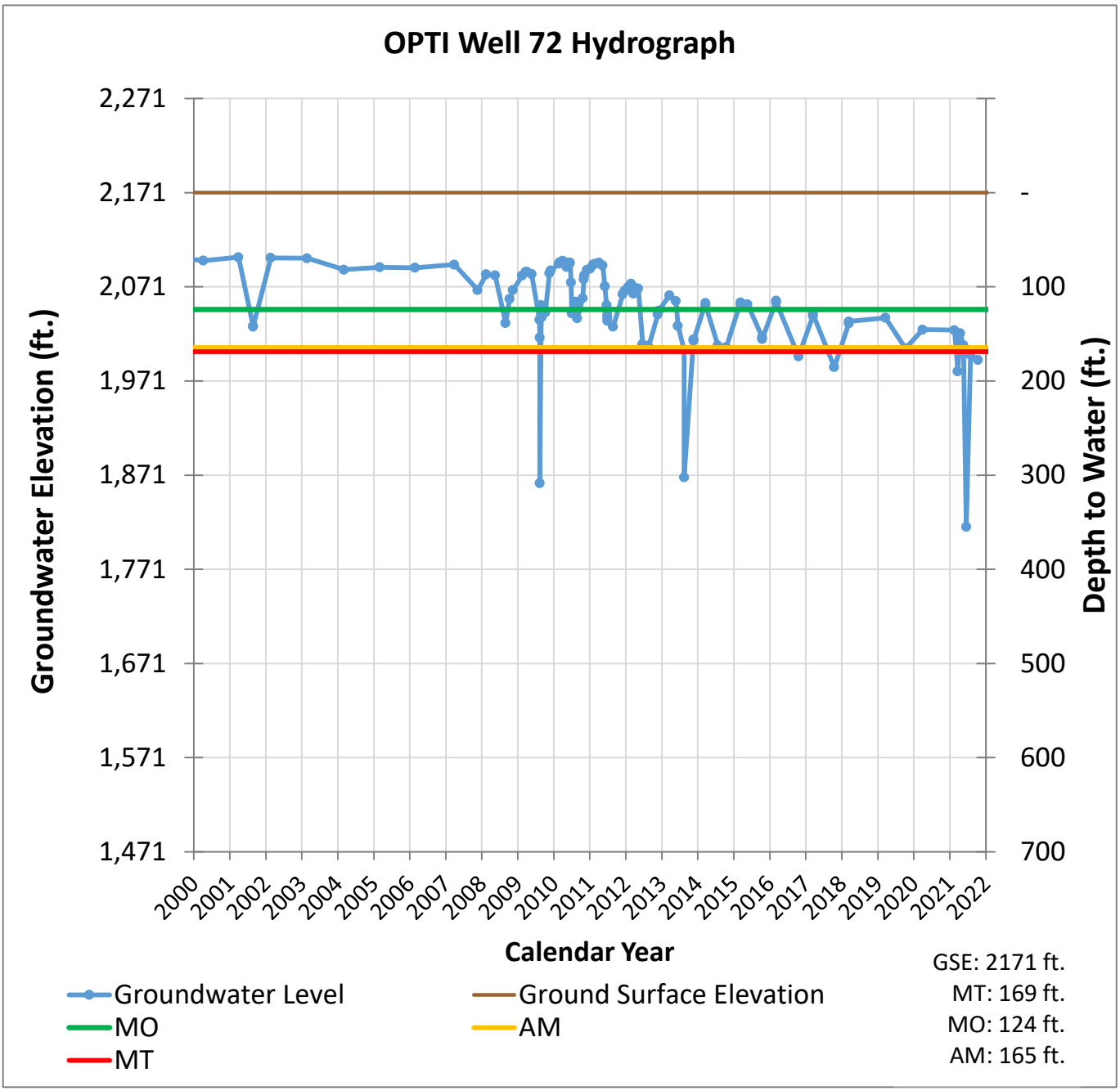
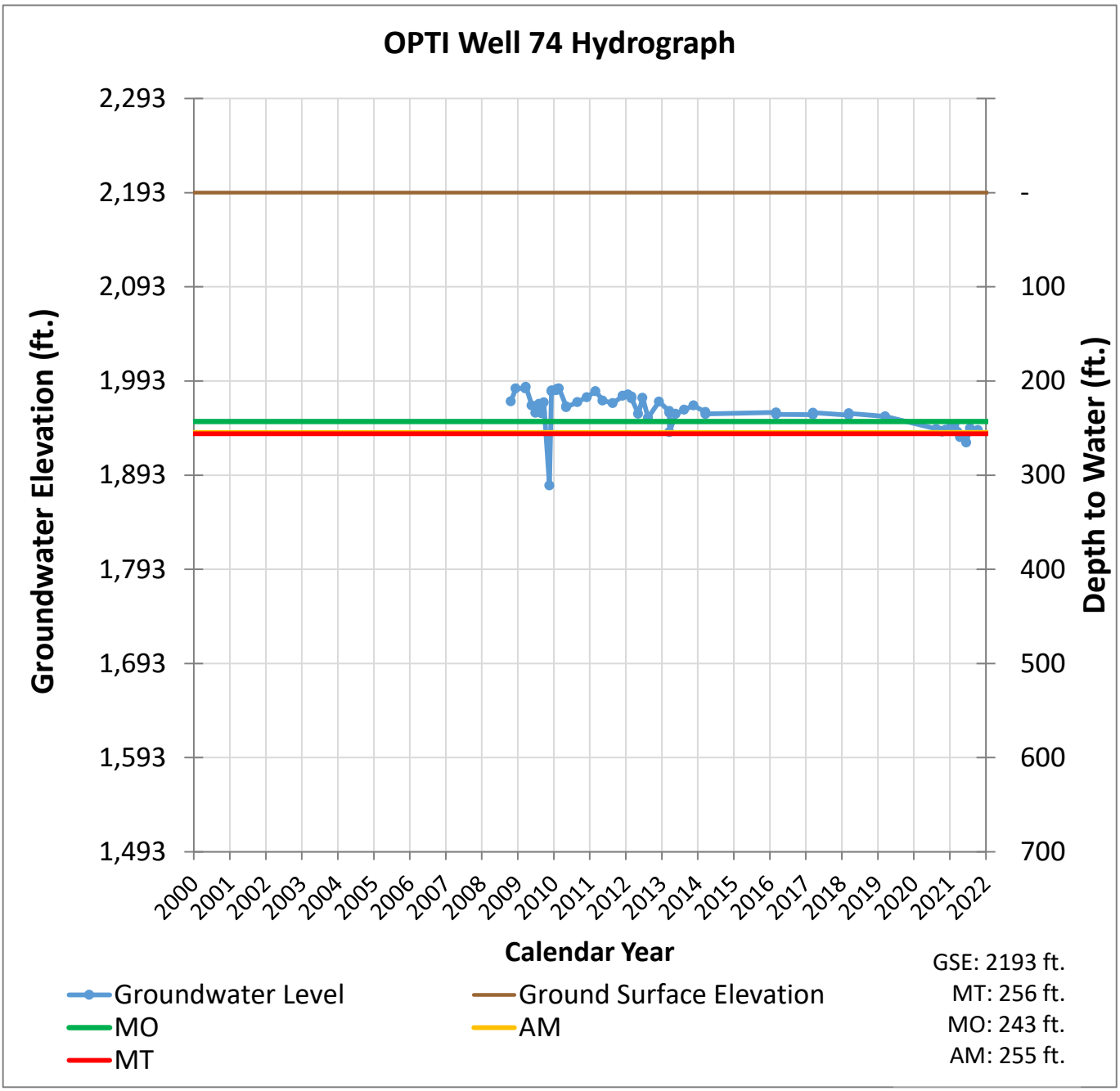
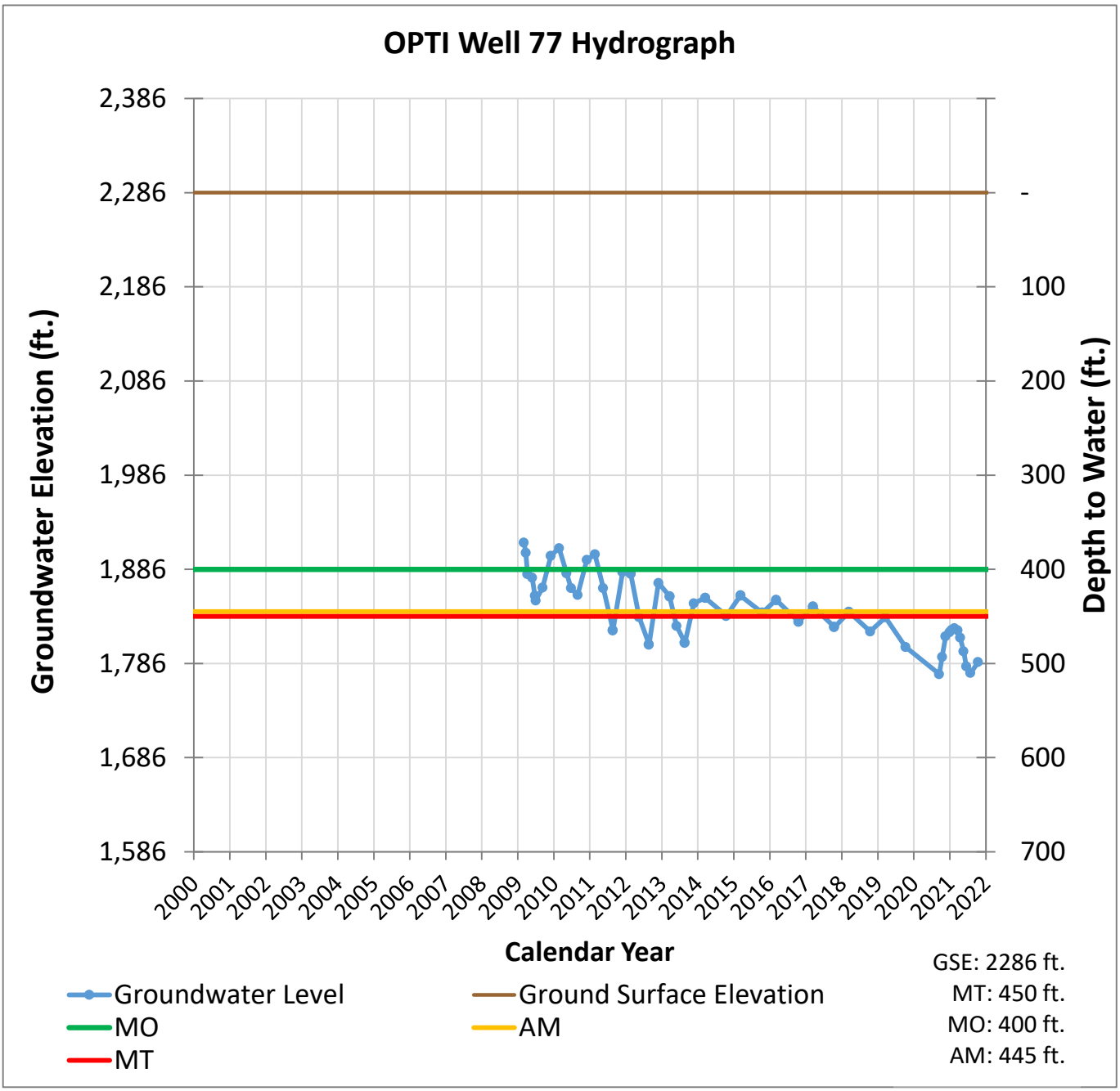
Appendix A
Updated Hydrographs for Representative Wells

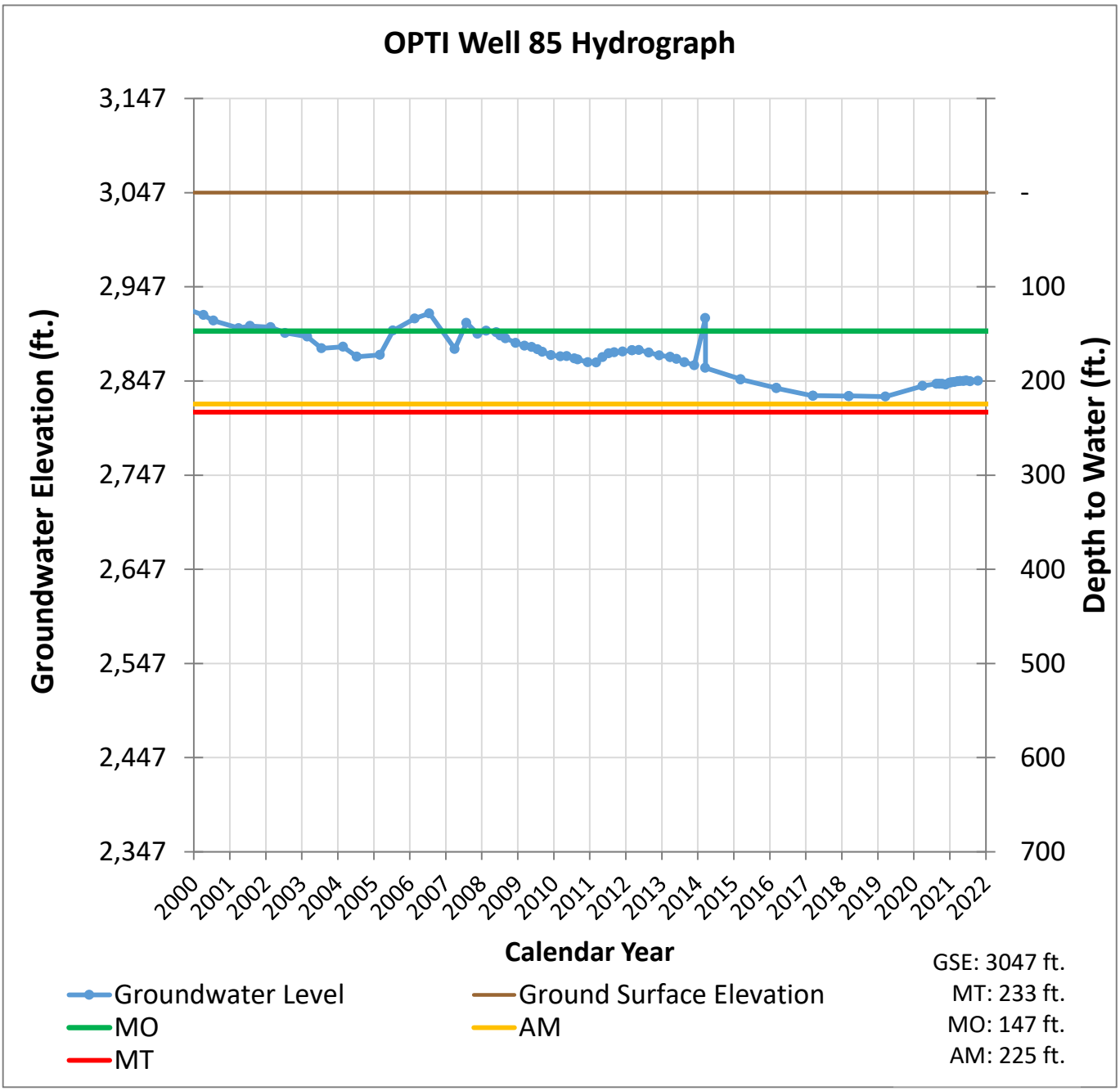

OPTI Well 2 Hydrograph
Groundwater Elevation (ft.)
3,820
3,720
3,620
3,520
3,420
3,320
3,220
3,120
3,020
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3720 ft.
MT: 72 ft.
MO: 55 ft.
AM: 70 ft.

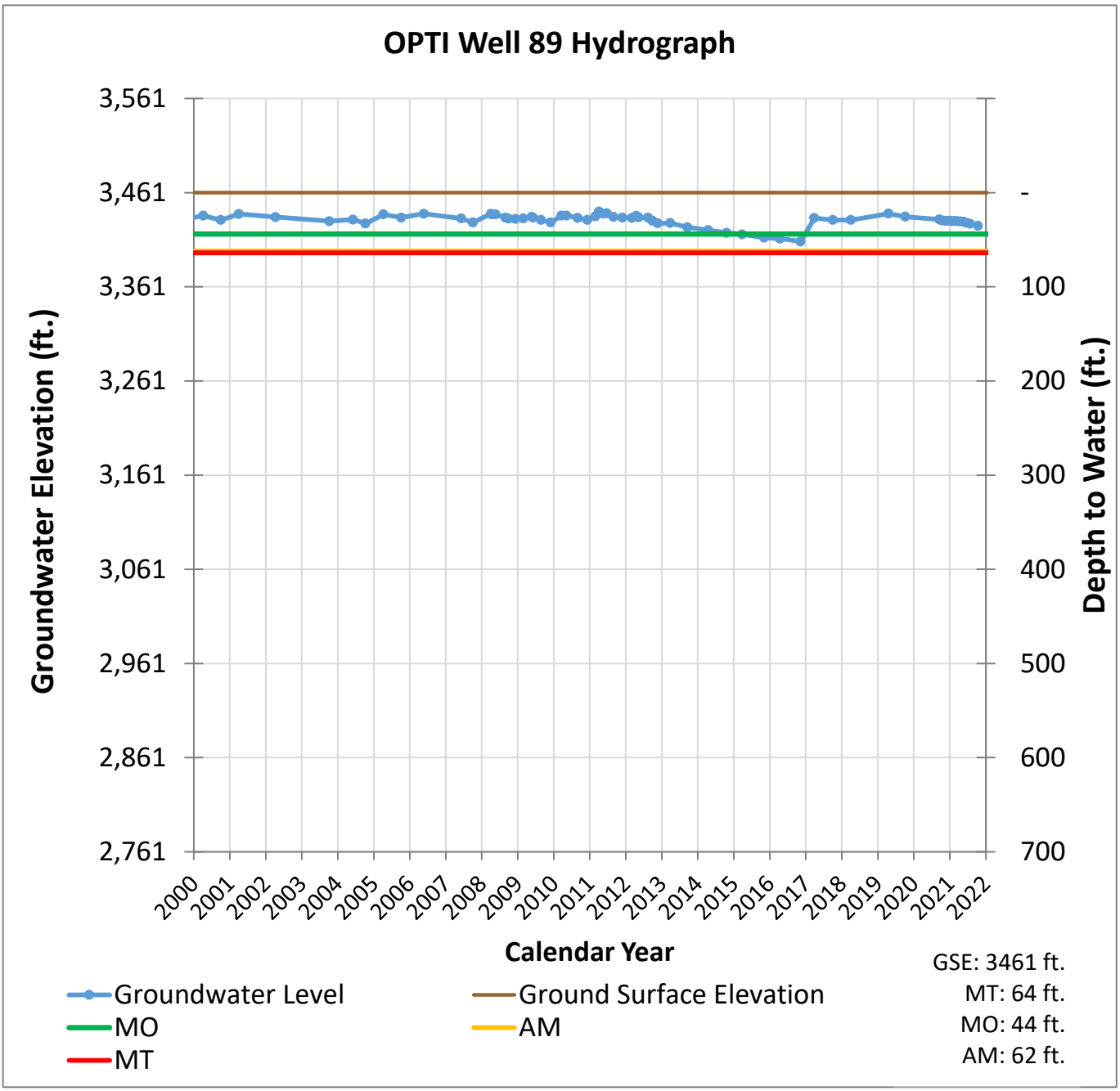

OPTI Well 62 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
3,021
2,921
2,821
2,721
2,621
2,521
2,421
2,321
2,221
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2921 ft.
MT: 182 ft.
MO: 142 ft.
AM: 178 ft.

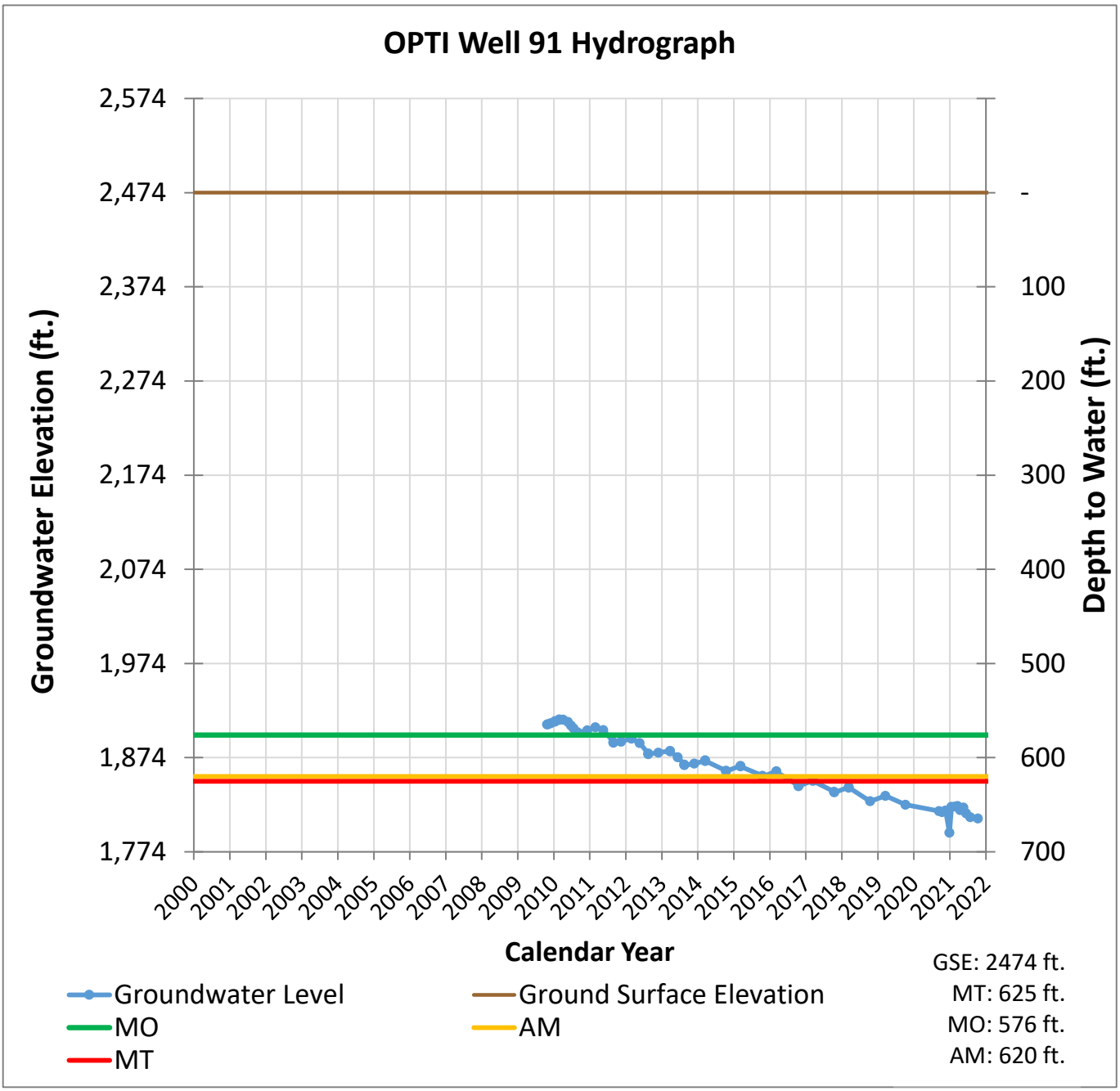

OPTI Well 72 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,271
2,171
2,071
1,971
1,871
1,771
1,671
1,571
1,471
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2171 ft.
MT: 169 ft.
MO: 124 ft.
AM: 165 ft.

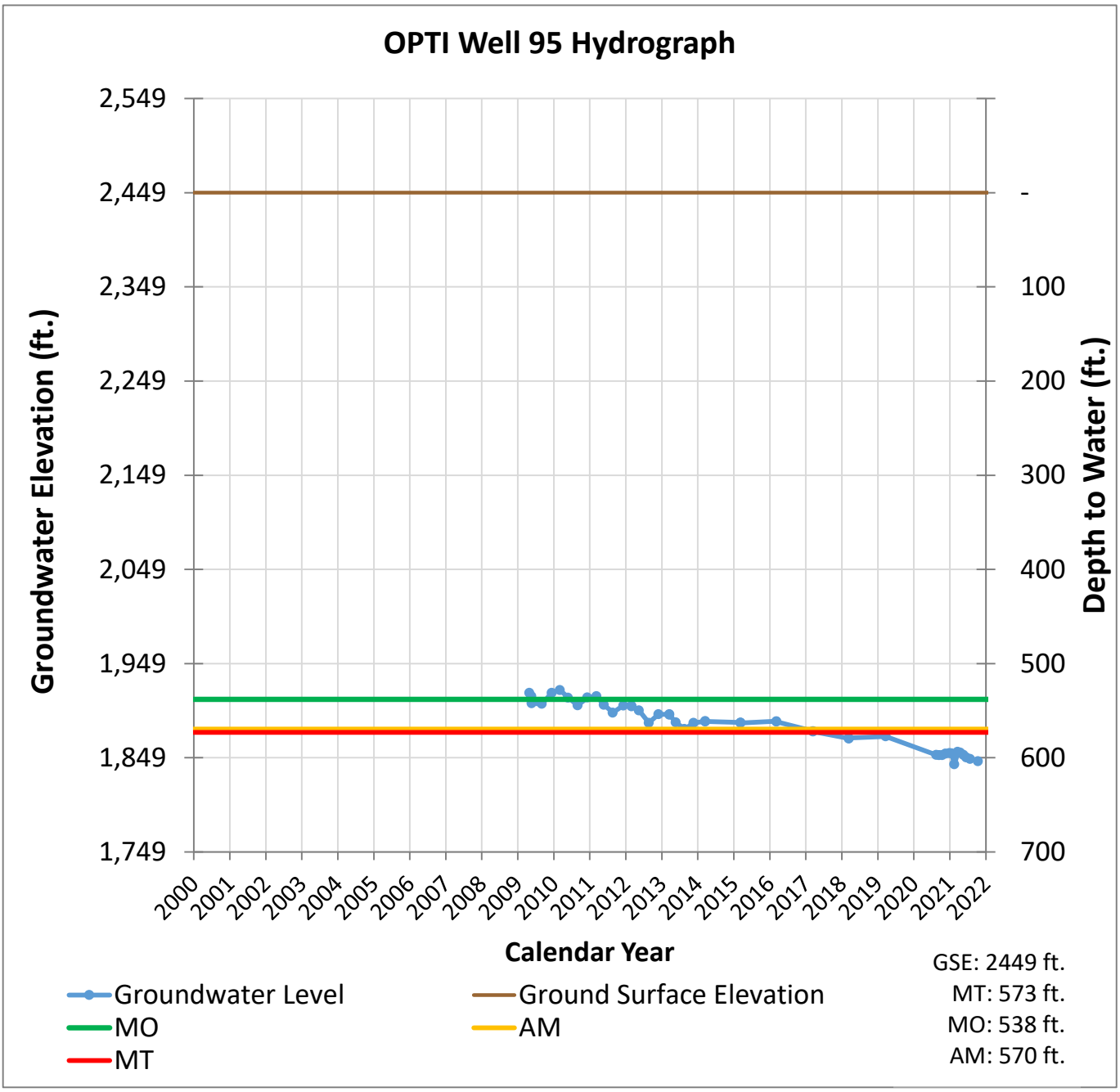

OPTI Well 74 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,293
2,193
2,093
1,993
1,893
1,793
1,693
1,593
1,493
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2193 ft.
MT: 256 ft.
MO: 243 ft.
AM: 255 ft.

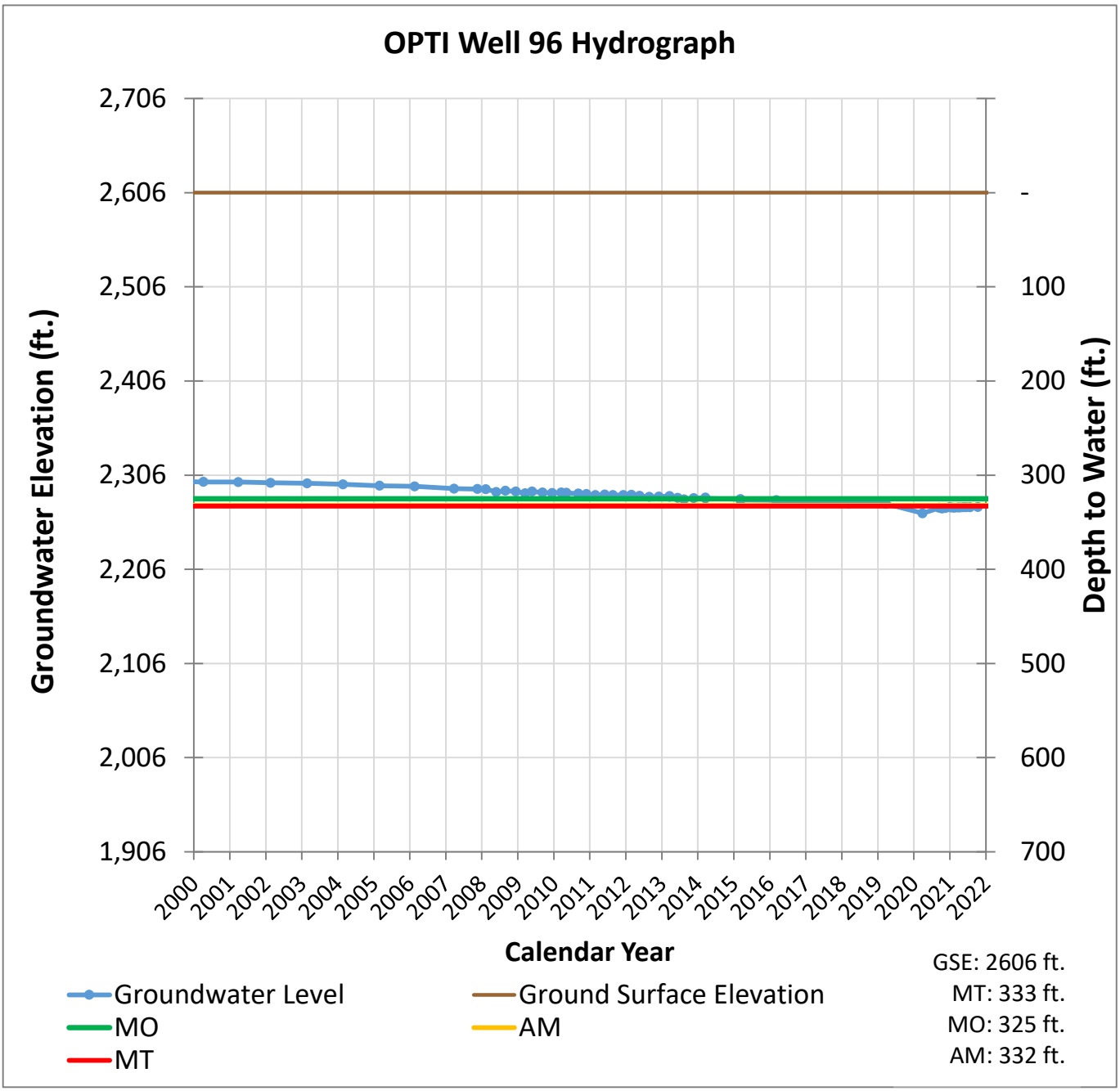

OPTI Well 77 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,386
2,286
2,186
2,086
1,986
1,886
1,786
1,686
1,586
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 450 ft.
MO: 400 ft.
AM: 445 ft.

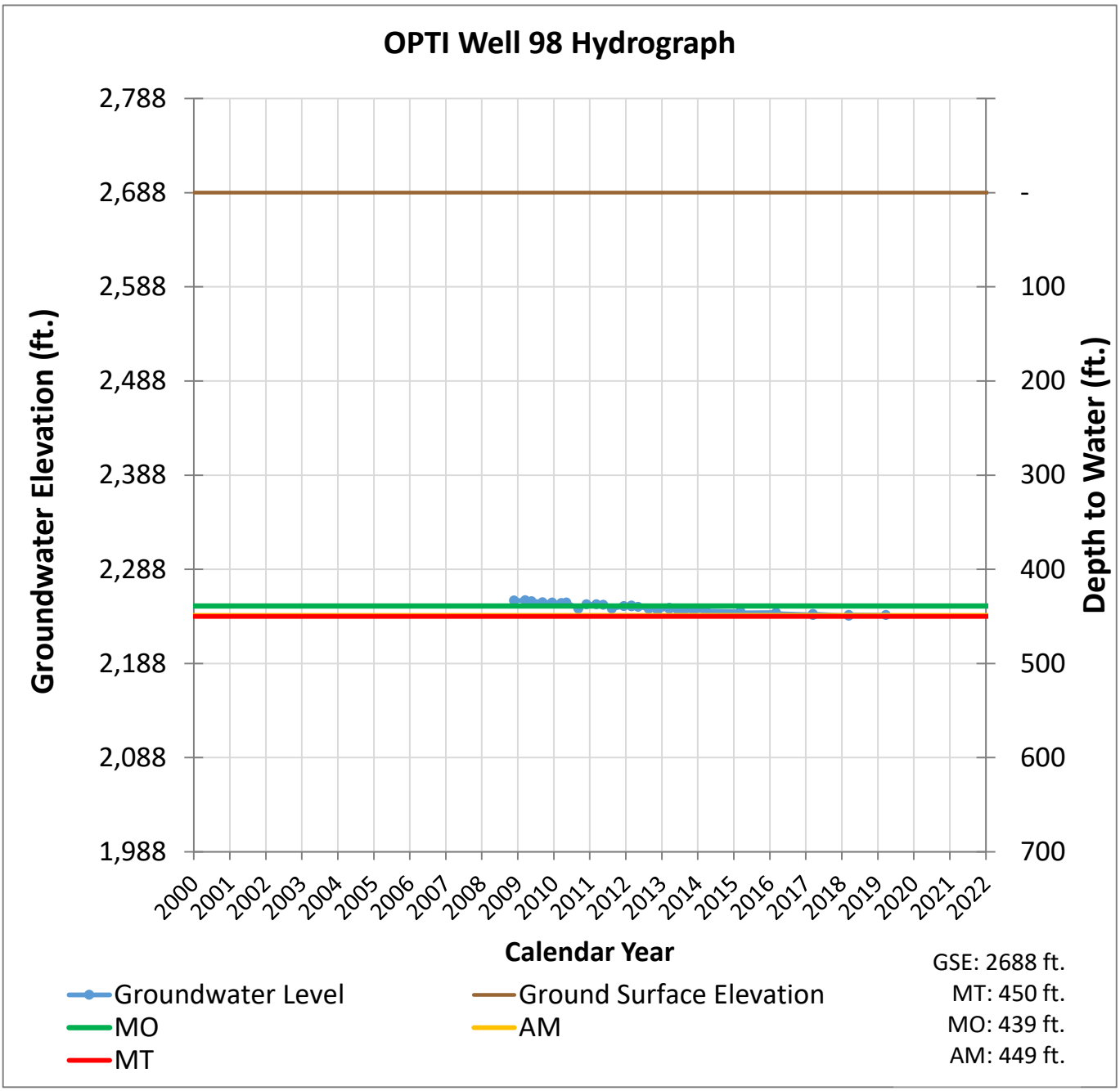

OPTI Well 85 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
3,147
3,047
2,947
2,847
2,747
2,647
2,547
2,447
2,347
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3047 ft.
MT: 233 ft.
MO: 147 ft.
AM: 225 ft.

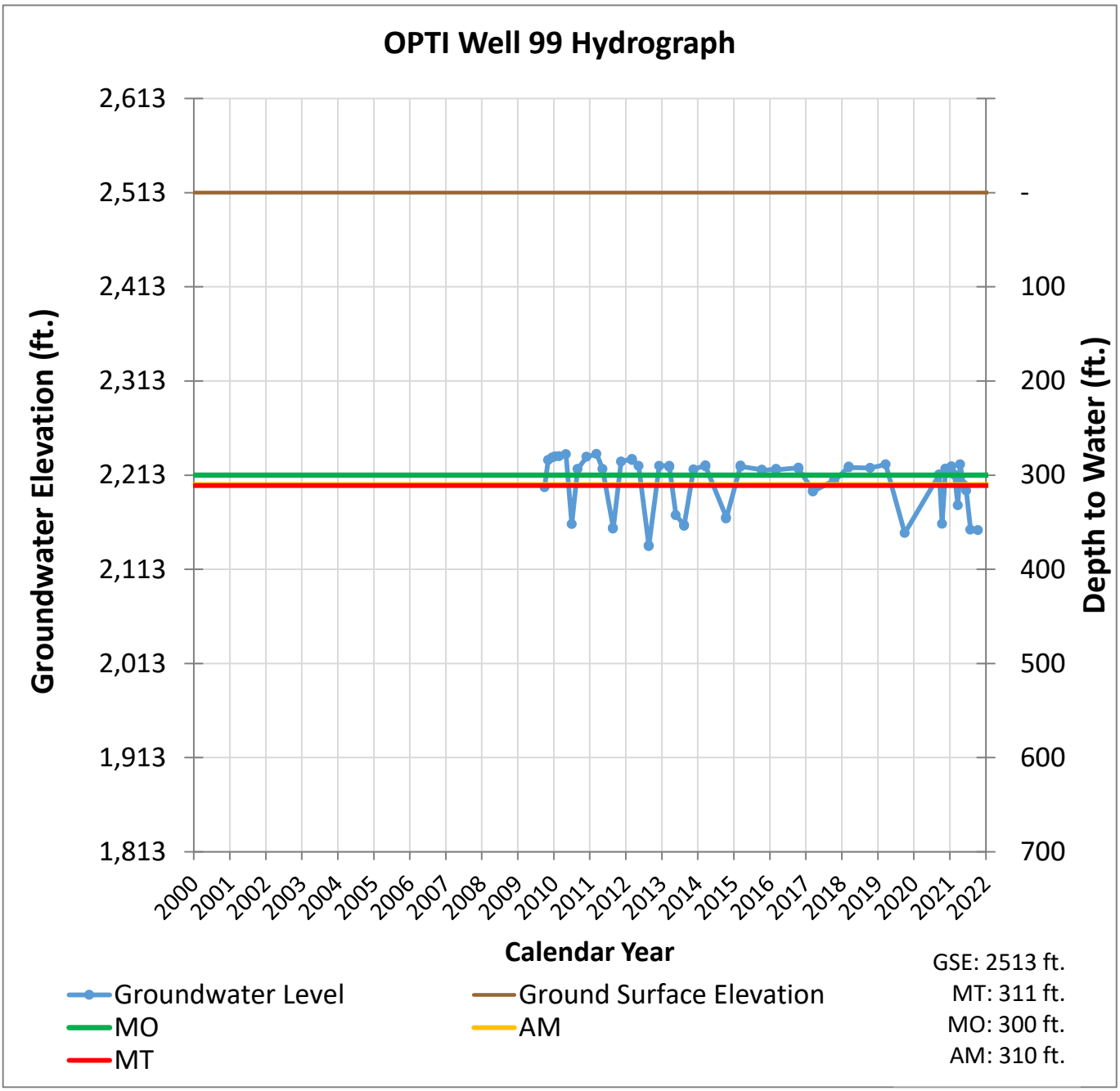

OPTI Well 89 Hydrograph
Groundwater Elevation (ft.)
3,561
3,461
3,361
3,261
3,161
3,061
2,961
2,861
2,761
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3461 ft.
MT: 64 ft.
MO: 44 ft.
AM: 62 ft.

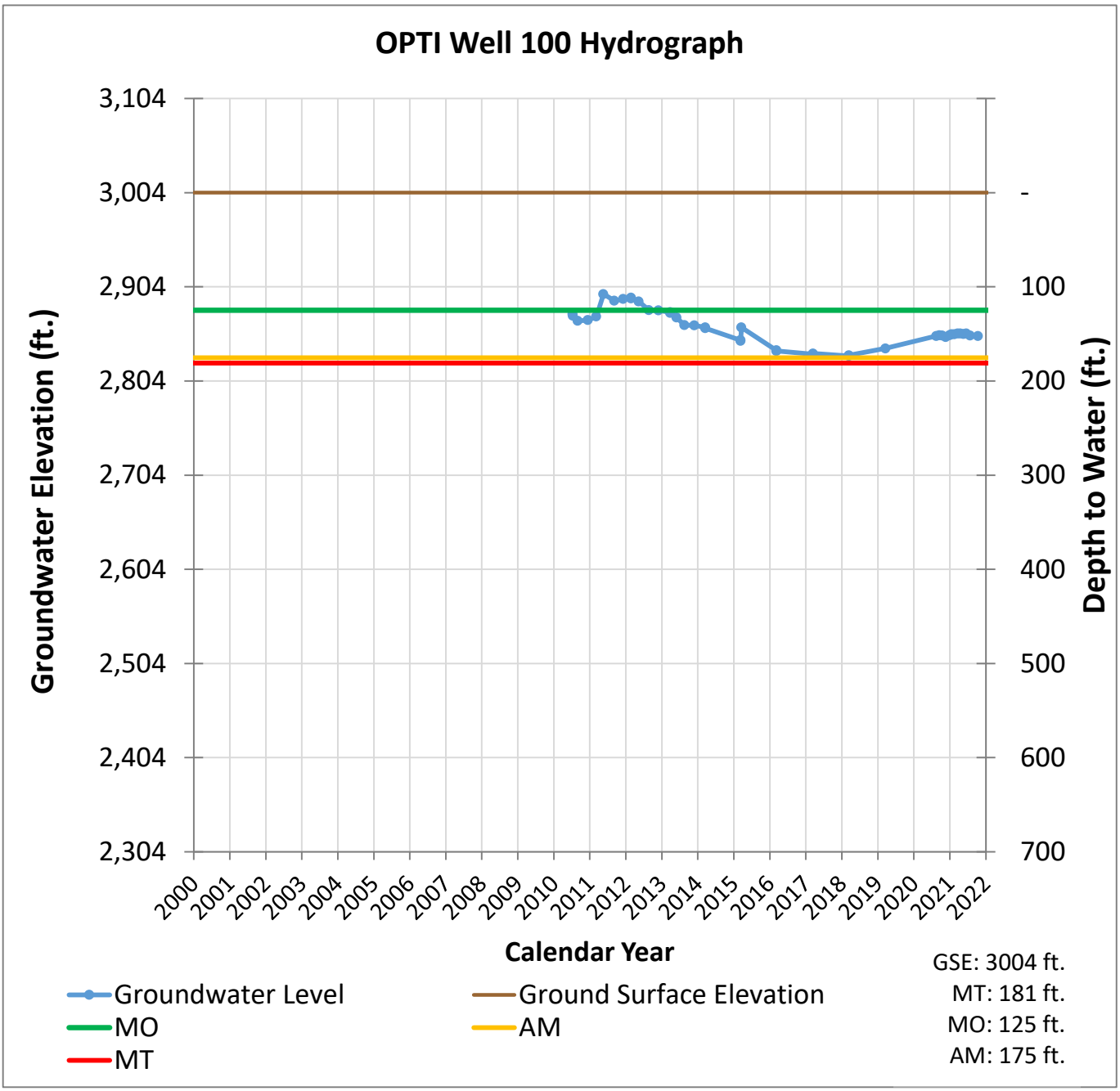

OPTI Well 91 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,574
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 625 ft.
MO: 576 ft.
AM: 620 ft.

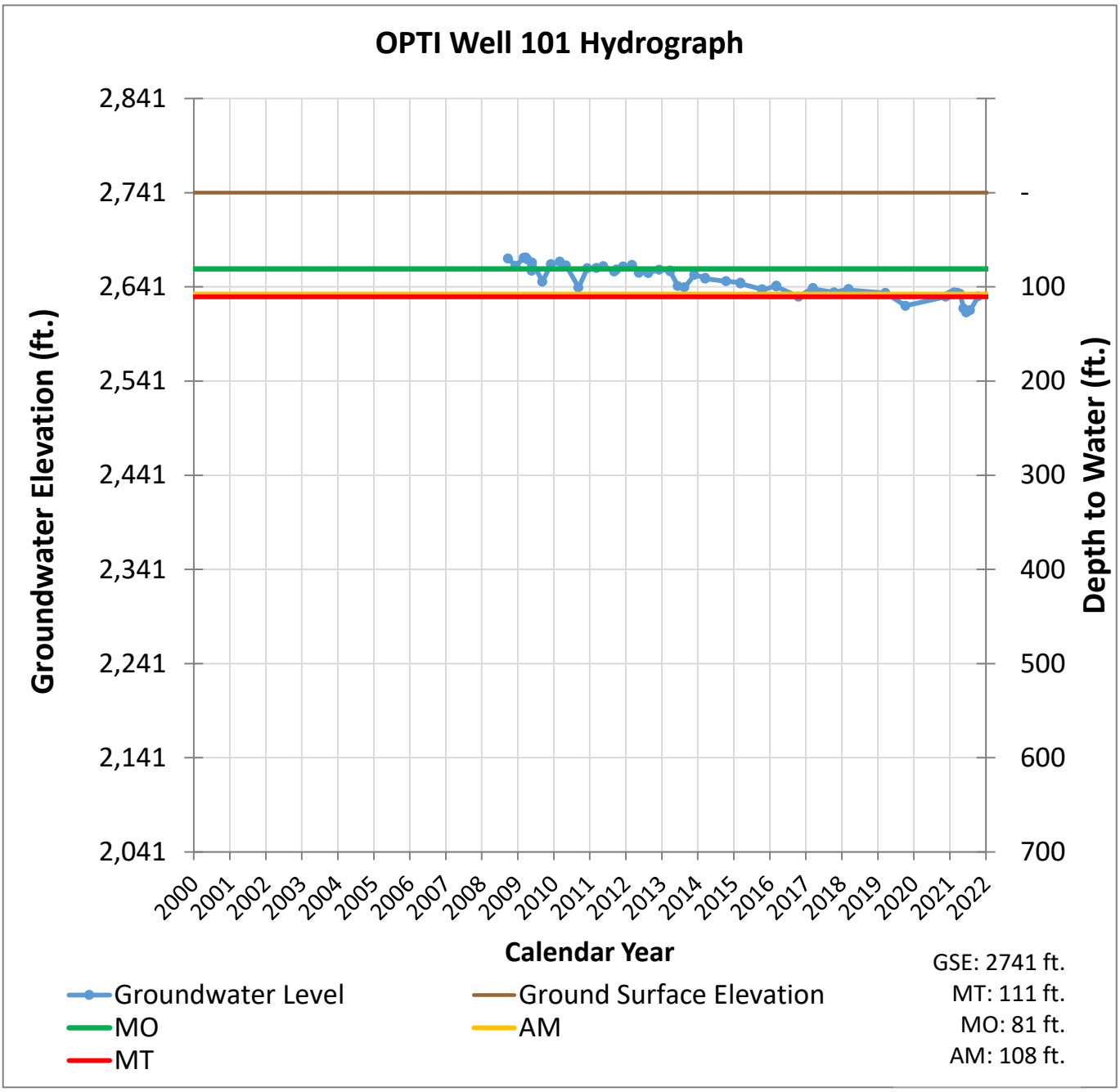

OPTI Well 95 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,549
2,449
2,349
2,249
2,149
2,049
1,949
1,849
1,749
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2449 ft.
MT: 573 ft.
MO: 538 ft.
AM: 570 ft.

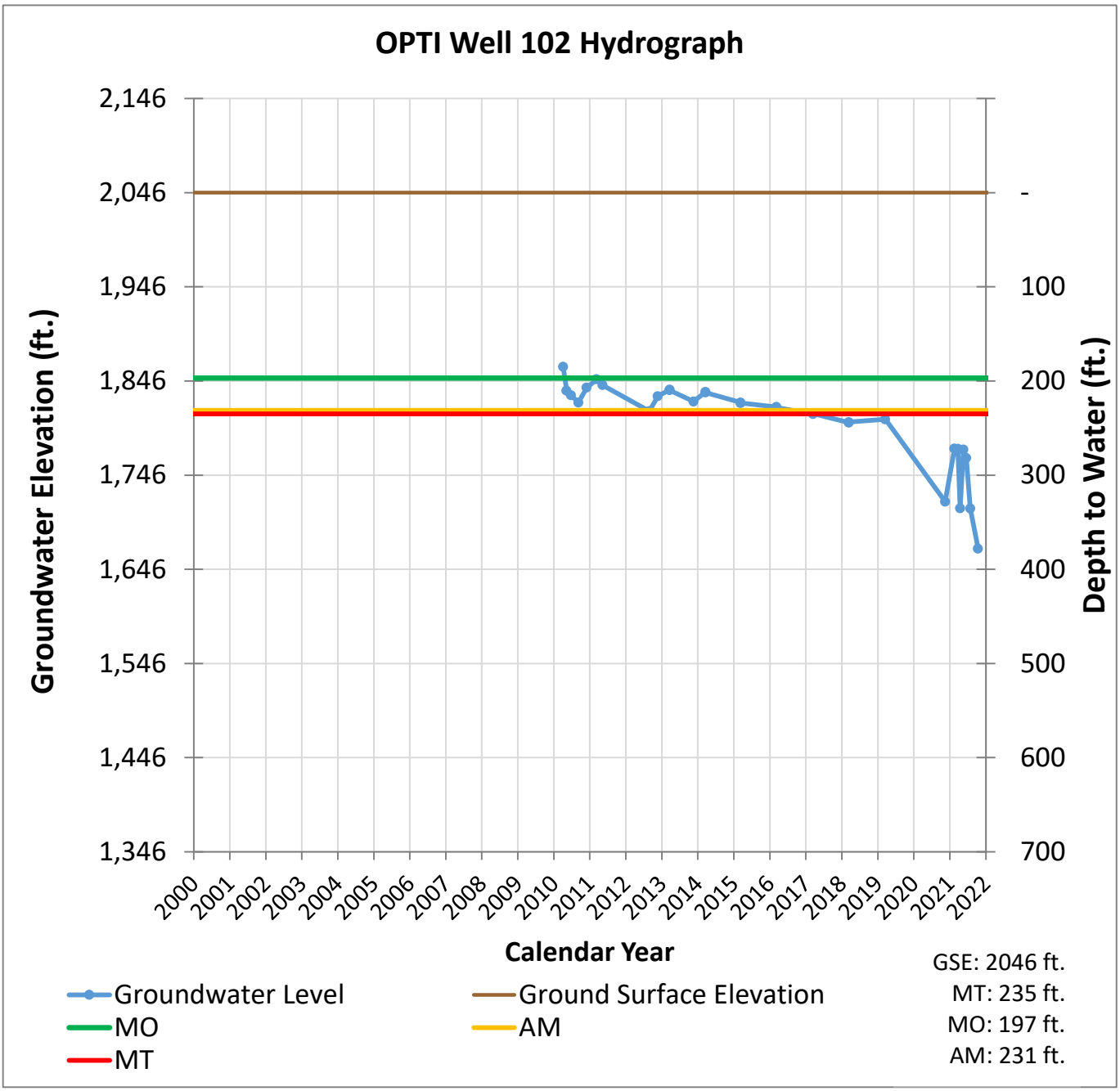

OPTI Well 96 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,706
2,606
2,506
2,406
2,306
2,206
2,106
2,006
1,906
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2606 ft.
MT: 333 ft.
MO: 325 ft.
AM: 332 ft.

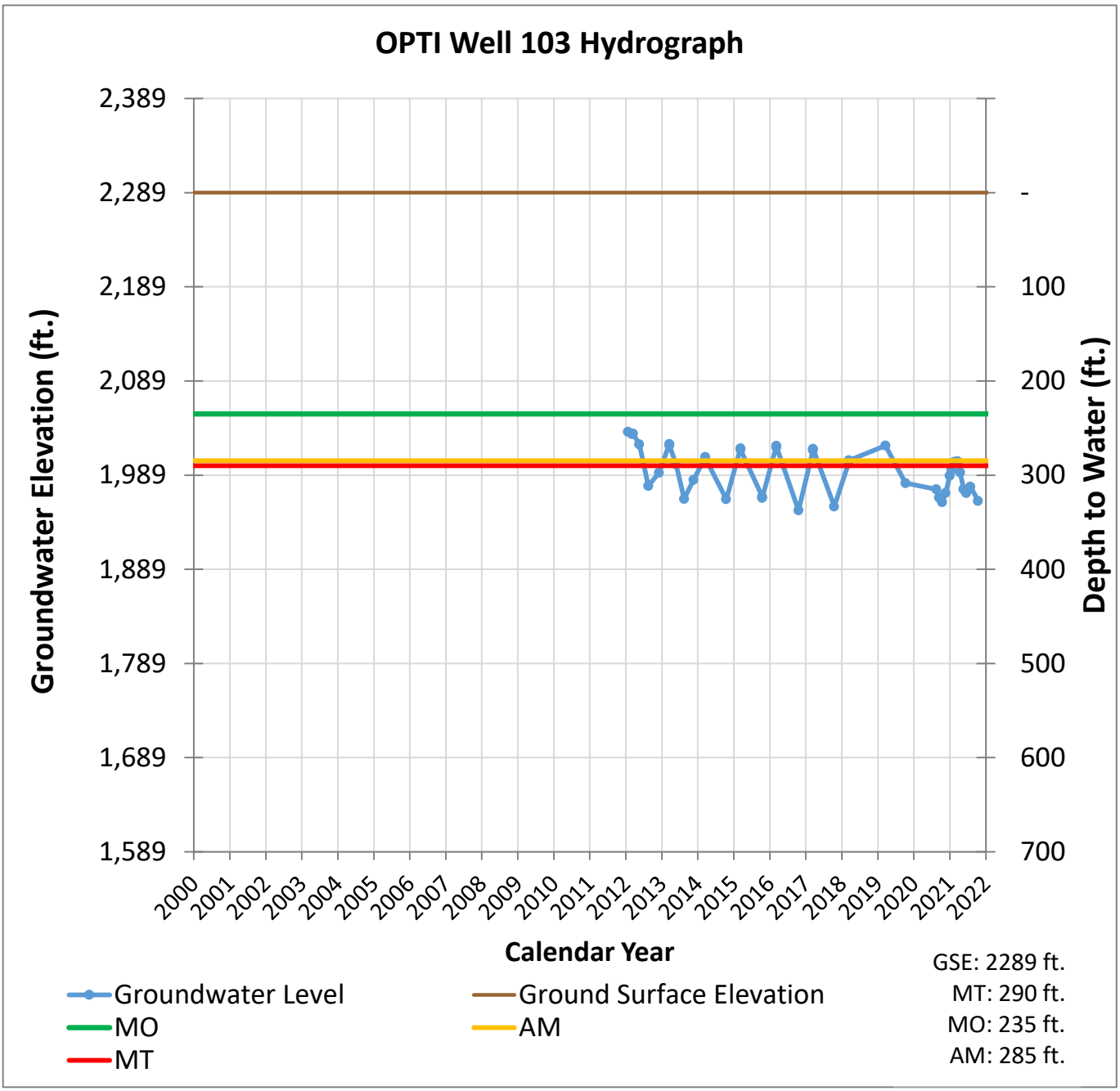

OPTI Well 98 Hydrograph
Groundwater Elevation (ft.)
2,788
2,688
2,588
2,488
2,388
2,288
2,188
2,088
1,988
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2688 ft.
MT: 450 ft.
MO: 439 ft.
AM: 449 ft.

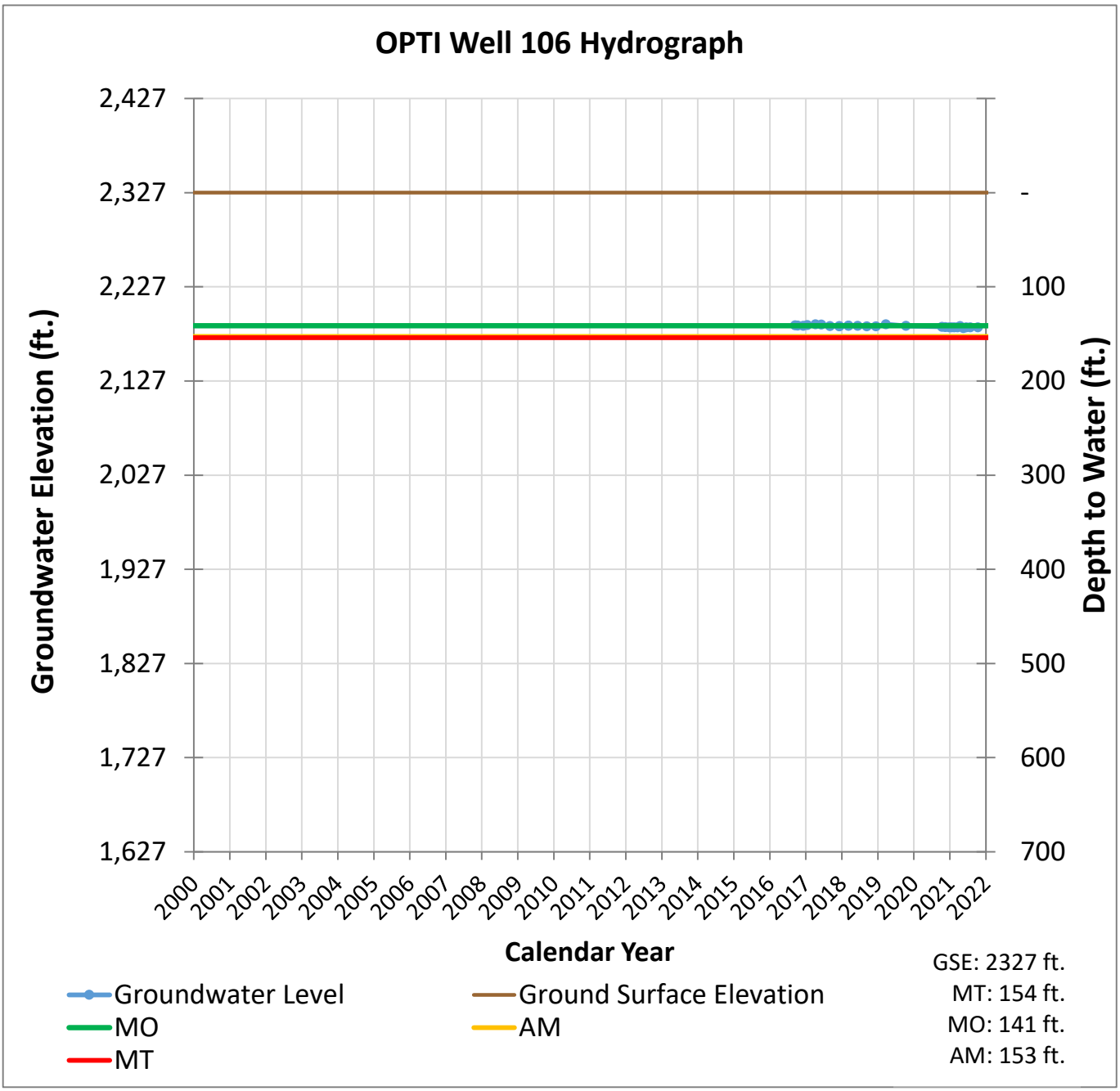

OPTI Well 99 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,613
2,513
2,413
2,313
2,213
2,113
2,013
1,913
1,813
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 311 ft.
MO: 300 ft.
AM: 310 ft.

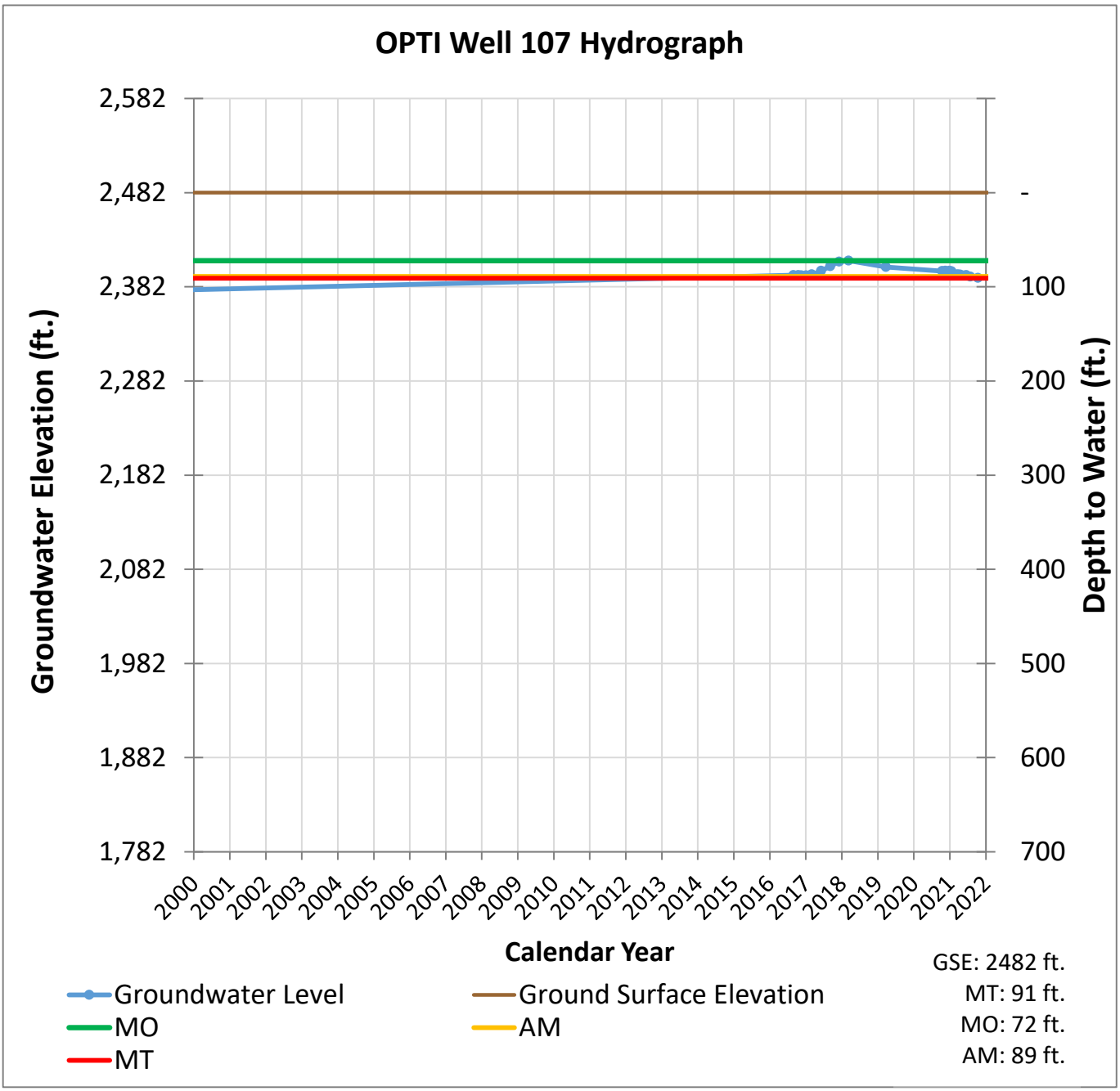

OPTI Well 100 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
3,104
3,004
2,904
2,804
2,704
2,604
2,504
2,404
2,304
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 3004 ft.
MT: 181 ft.
MO: 125 ft.
AM: 175 ft.

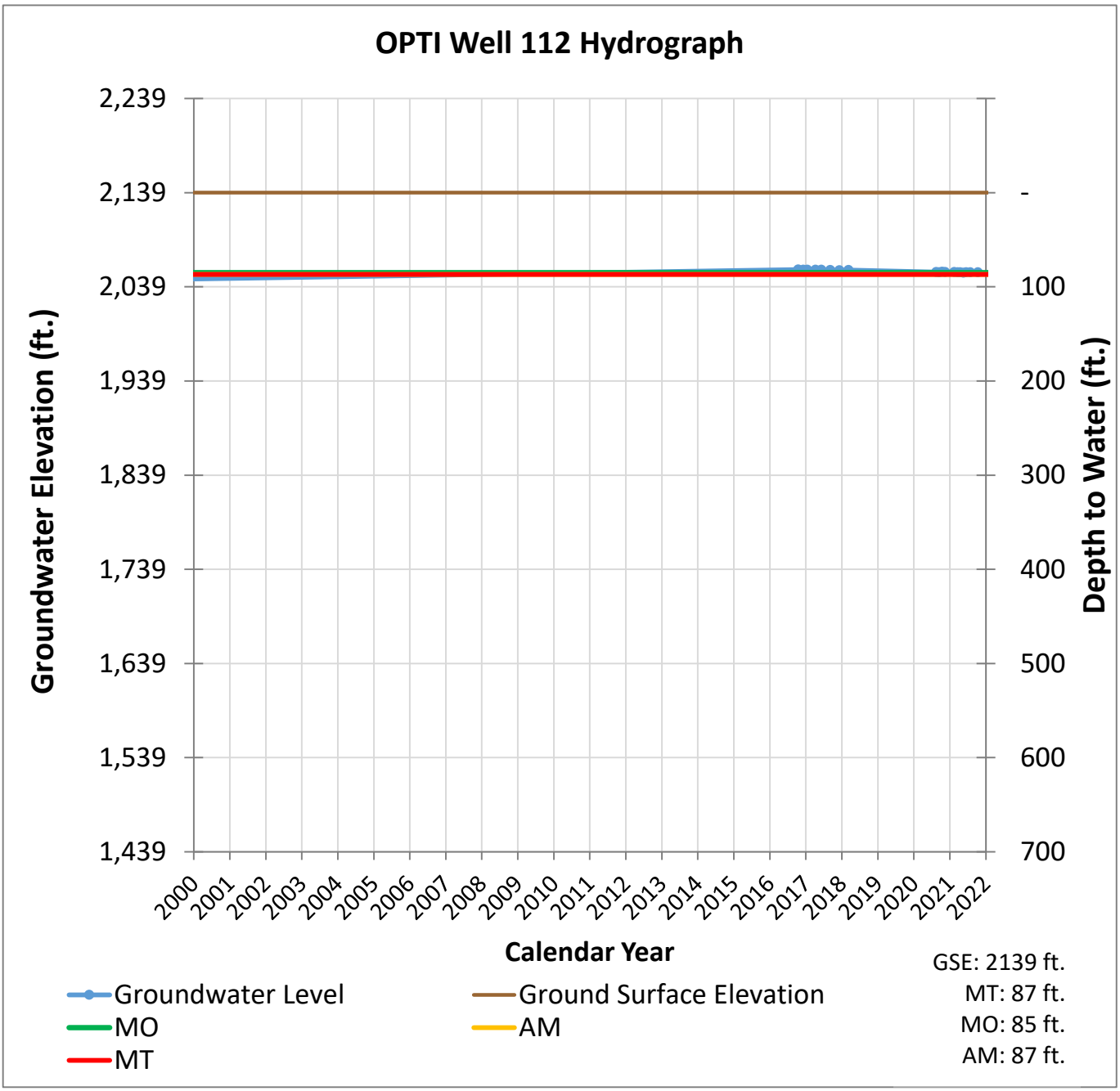

OPTI Well 101 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,841
2,741
2,641
2,541
2,441
2,341
2,241
2,141
2,041
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2741 ft.
MT: 111 ft.
MO: 81 ft.
AM: 108 ft.

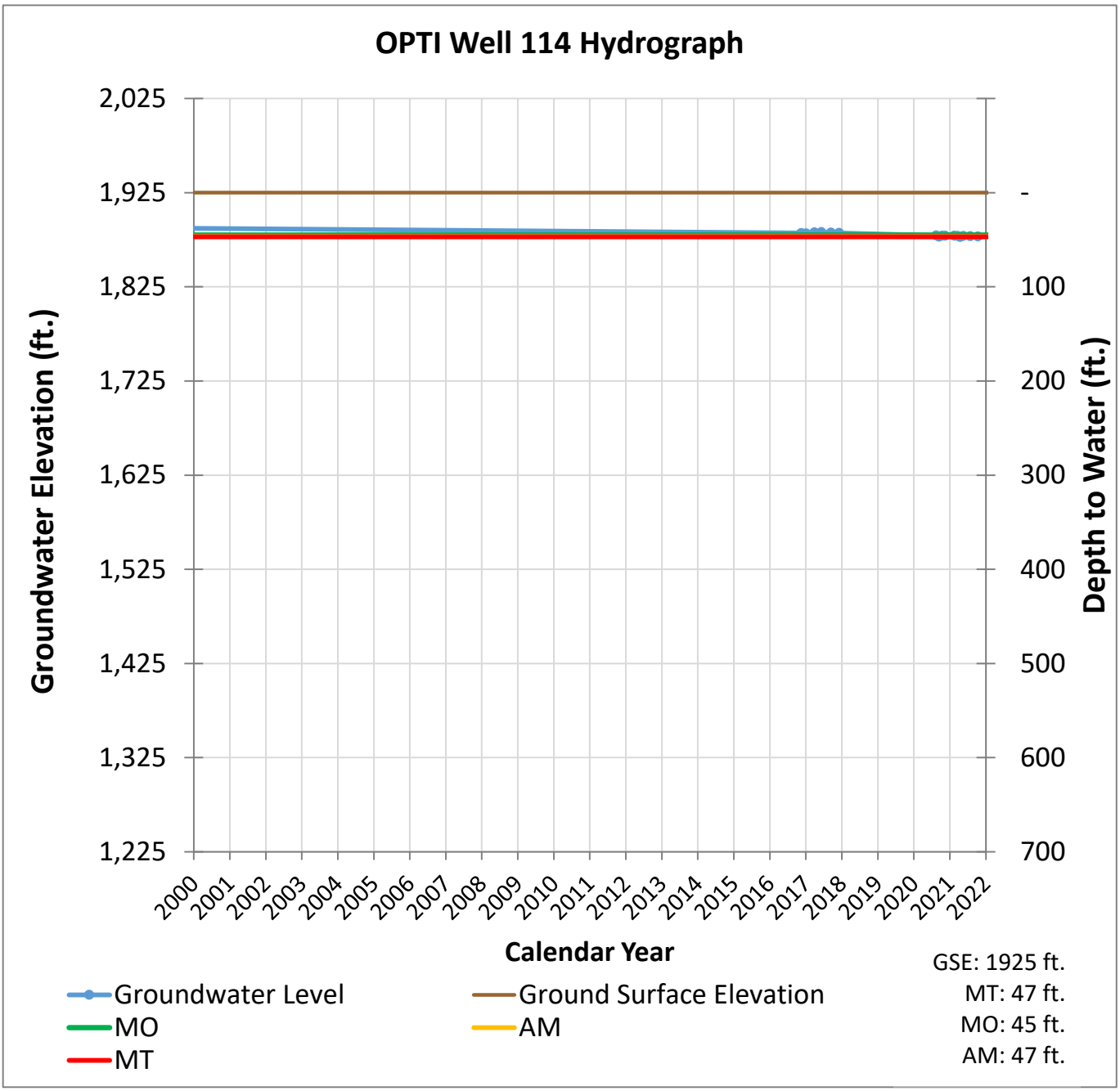

OPTI Well 102 Hydrograph
Groundwater Elevation (ft.)
2,146
2,046
1,946
1,846
1,746
1,646
1,546
1,446
1,346
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2046 ft.
MT: 235 ft.
MO: 197 ft.
AM: 231 ft.

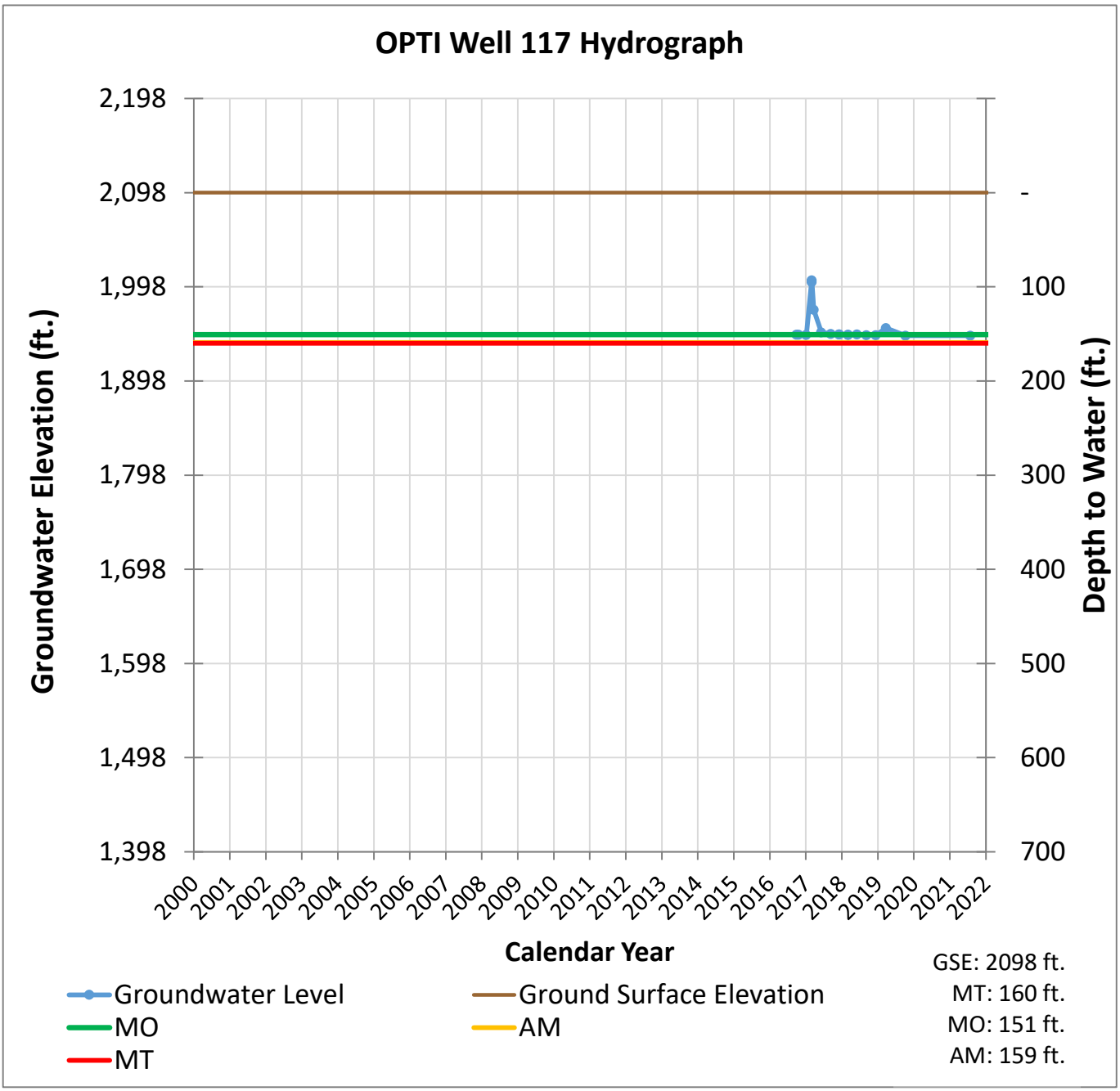

OPTI Well 103 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,389
2,289
2,189
2,089
1,989
1,889
1,789
1,689
1,589
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2289 ft.
MT: 290 ft.
MO: 235 ft.
AM: 285 ft.

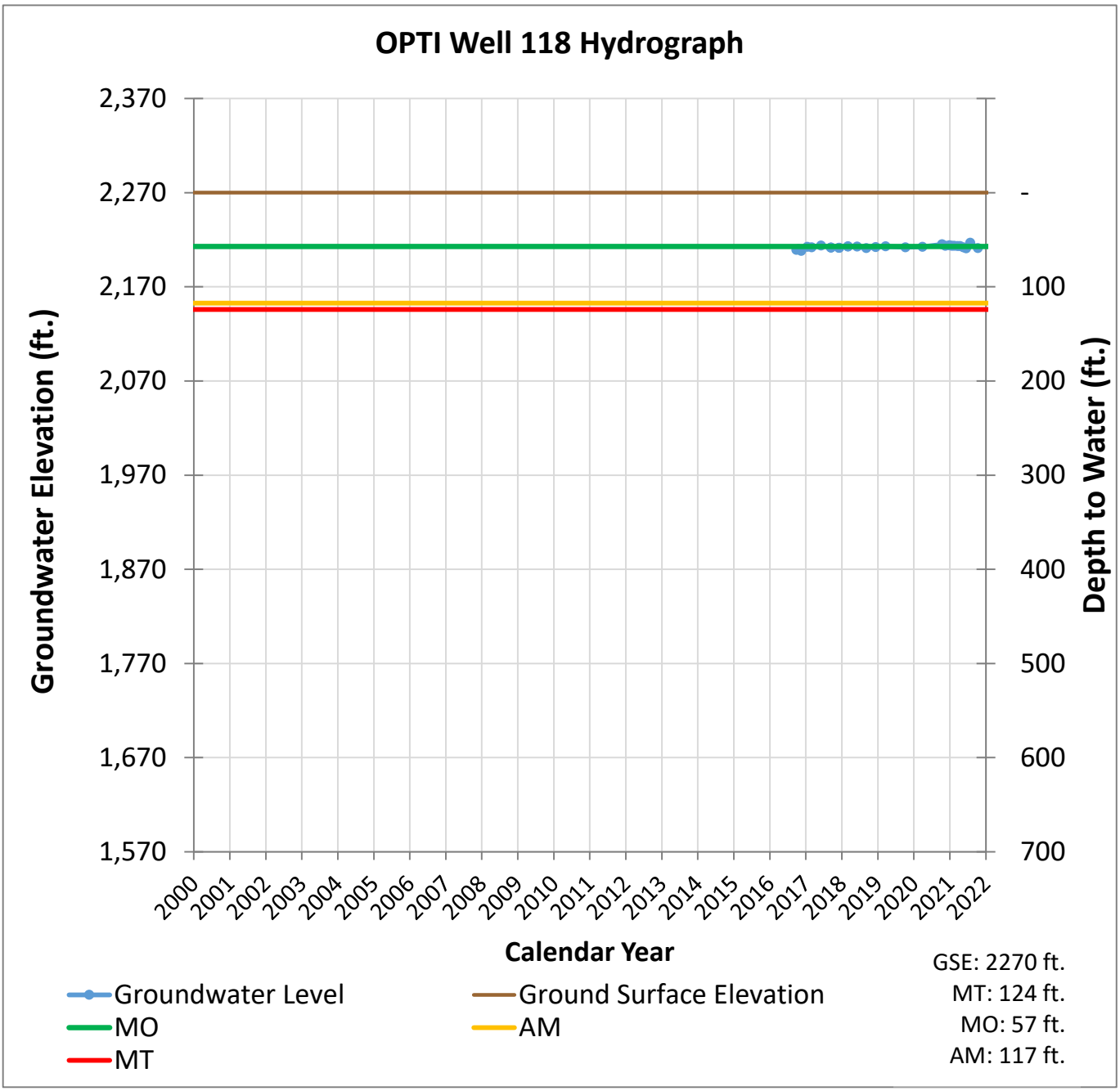

OPTI Well 106 Hydrograph
Groundwater Elevation (ft.)
2,427
2,327
2,227
2,127
2,027
1,927
1,827
1,727
1,627
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2327 ft.
MT: 154 ft.
MO: 141 ft.
AM: 153 ft.

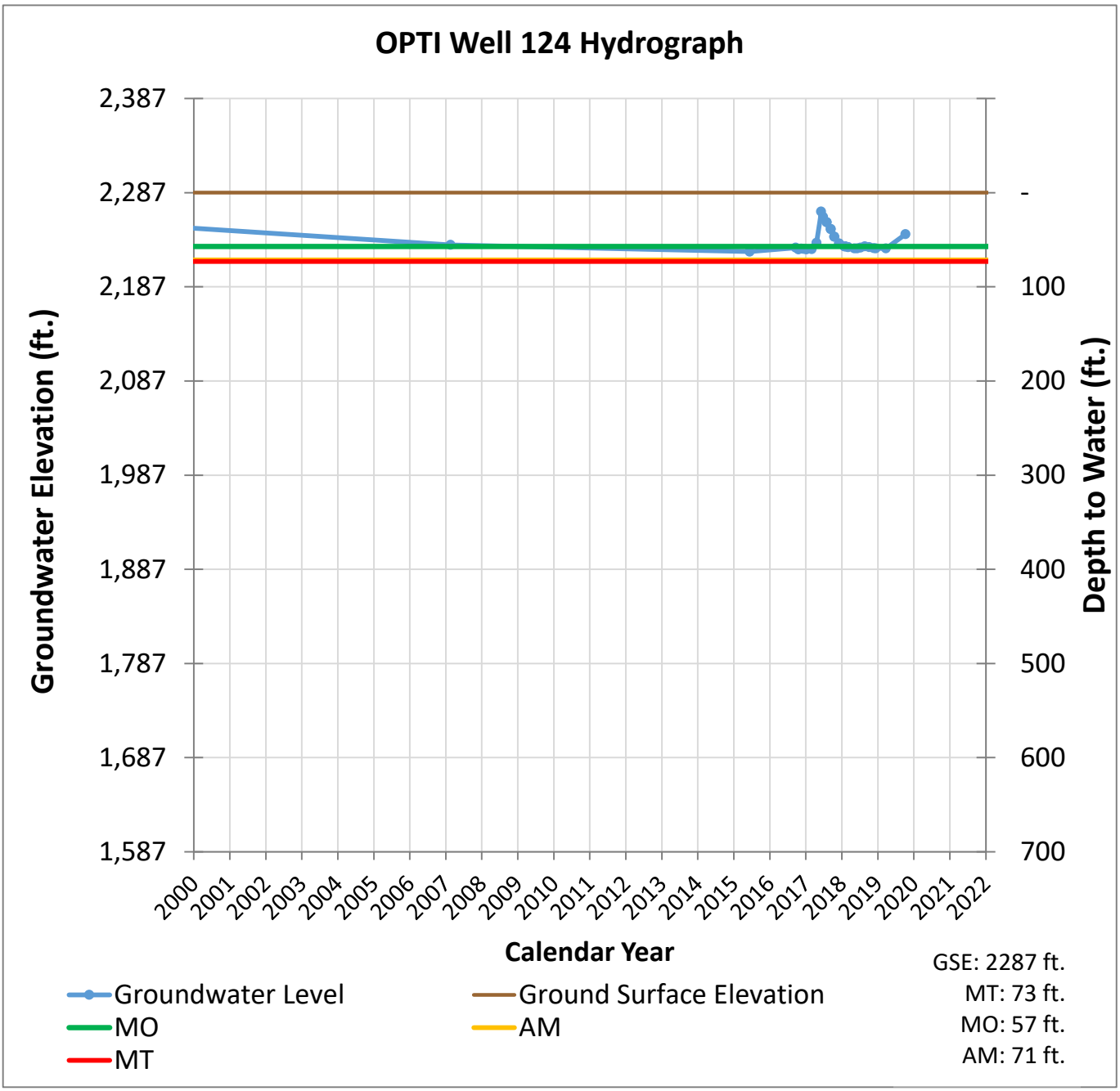

OPTI Well 107 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,582
2,482
2,382
2,282
2,182
2,082
1,982
1,882
1,782
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2482 ft.
MT: 91 ft.
MO: 72 ft.
AM: 89 ft.

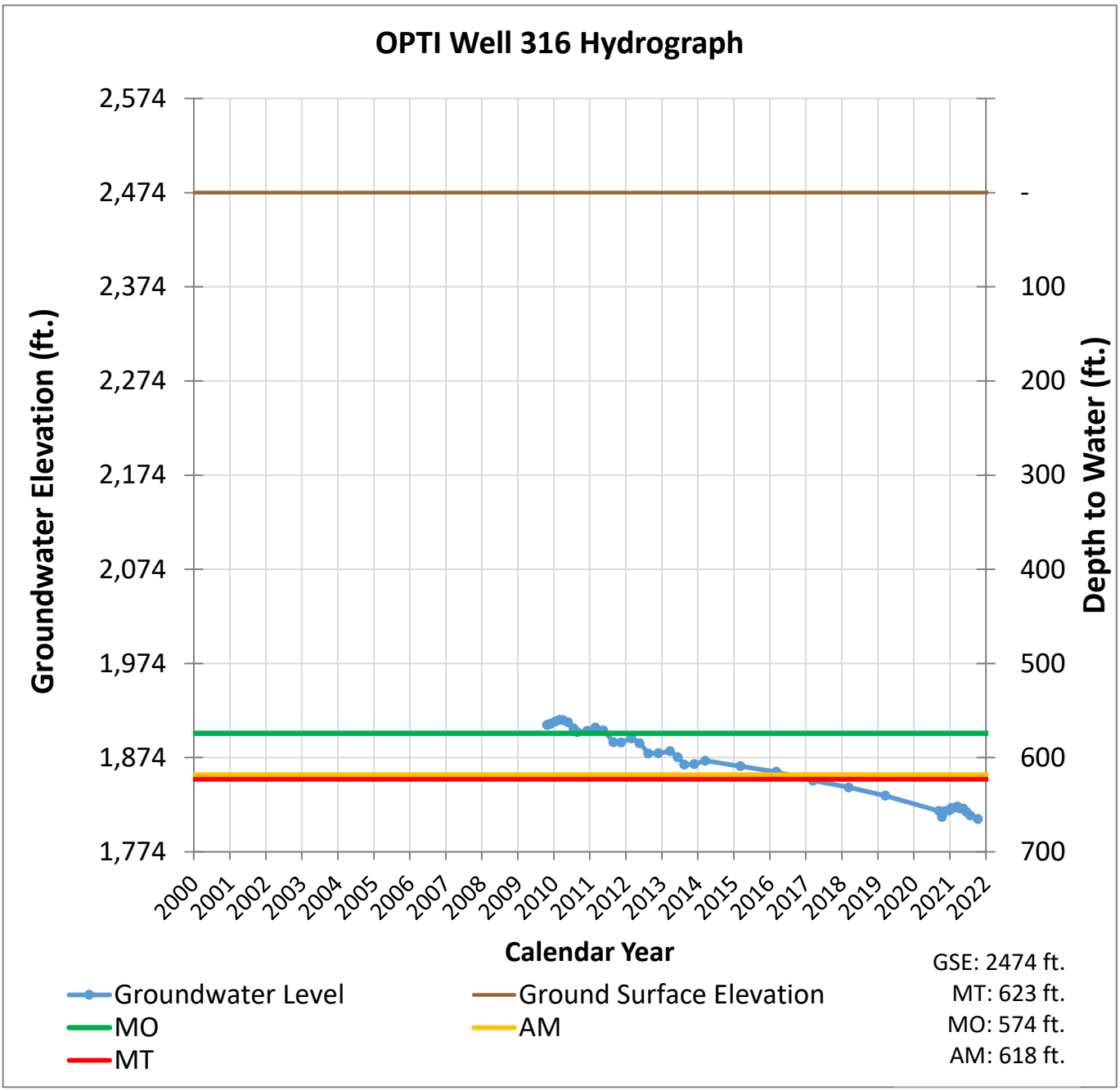

OPTI Well 112 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,239
2,139
2,039
1,939
1,839
1,739
1,639
1,539
1,439
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2139 ft.
MT: 87 ft.
MO: 85 ft.
AM: 87 ft.

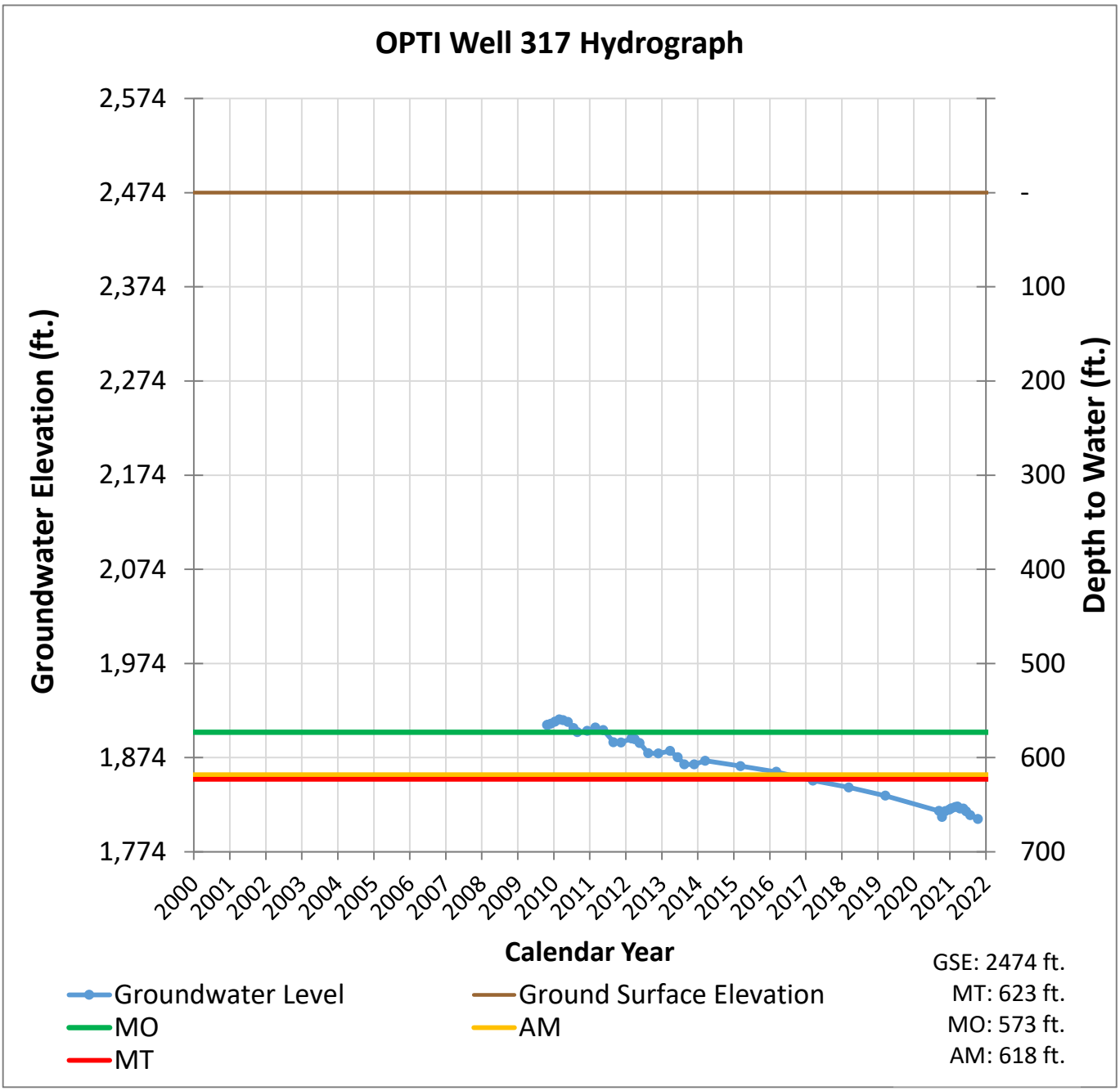

OPTI Well 114 Hydrograph
Groundwater Elevation (ft.)
2,025
1,925
1,825
1,725
1,625
1,525
1,425
1,325
1,225
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1925 ft.
MT: 47 ft.
MO: 45 ft.
AM: 47 ft.

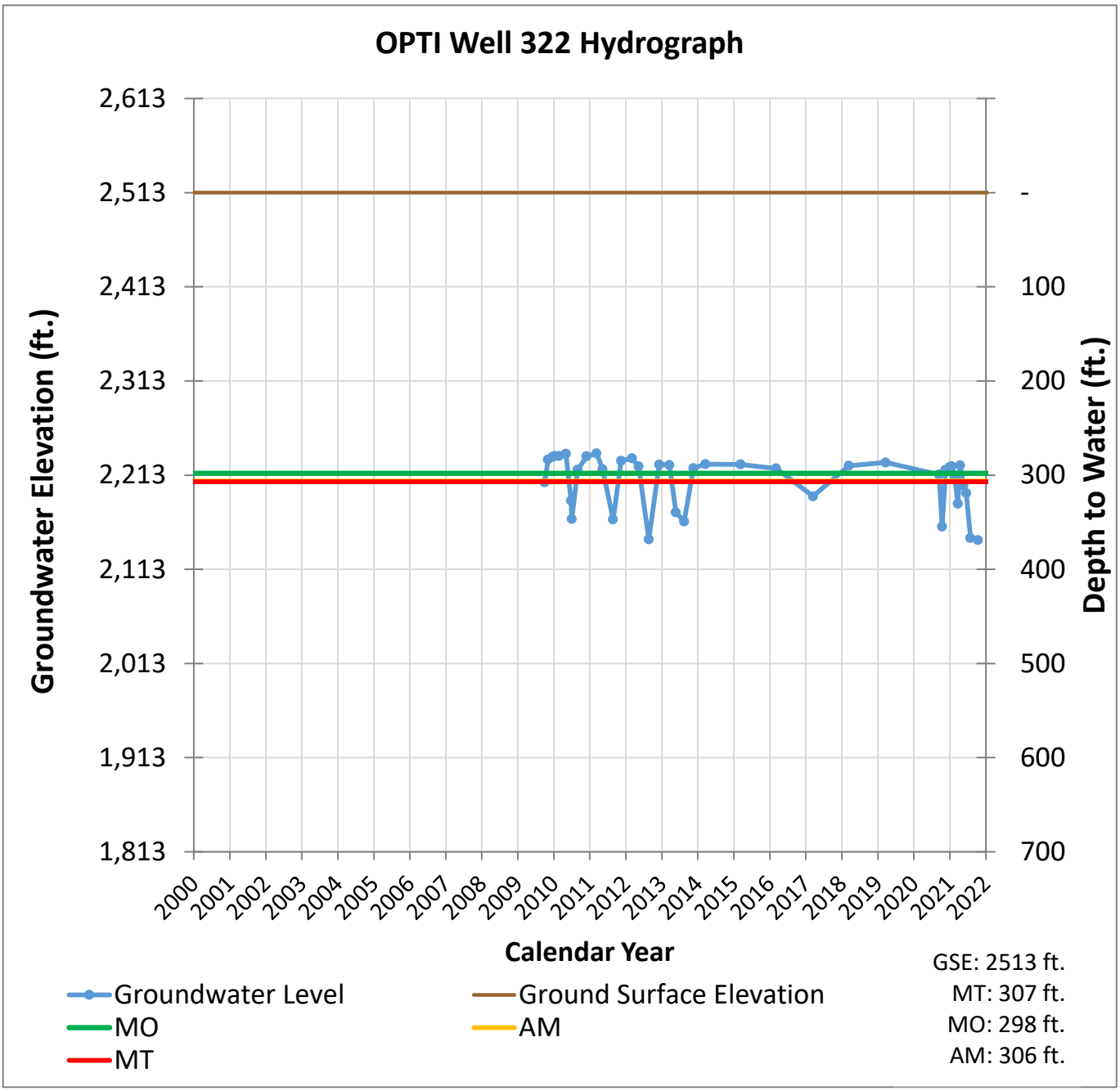

OPTI Well 117 Hydrograph
Groundwater Elevation (ft.)
2,198
2,098
1,998
1,898
1,798
1,698
1,598
1,498
1,398
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2098 ft.
MT: 160 ft.
MO: 151 ft.
AM: 159 ft.

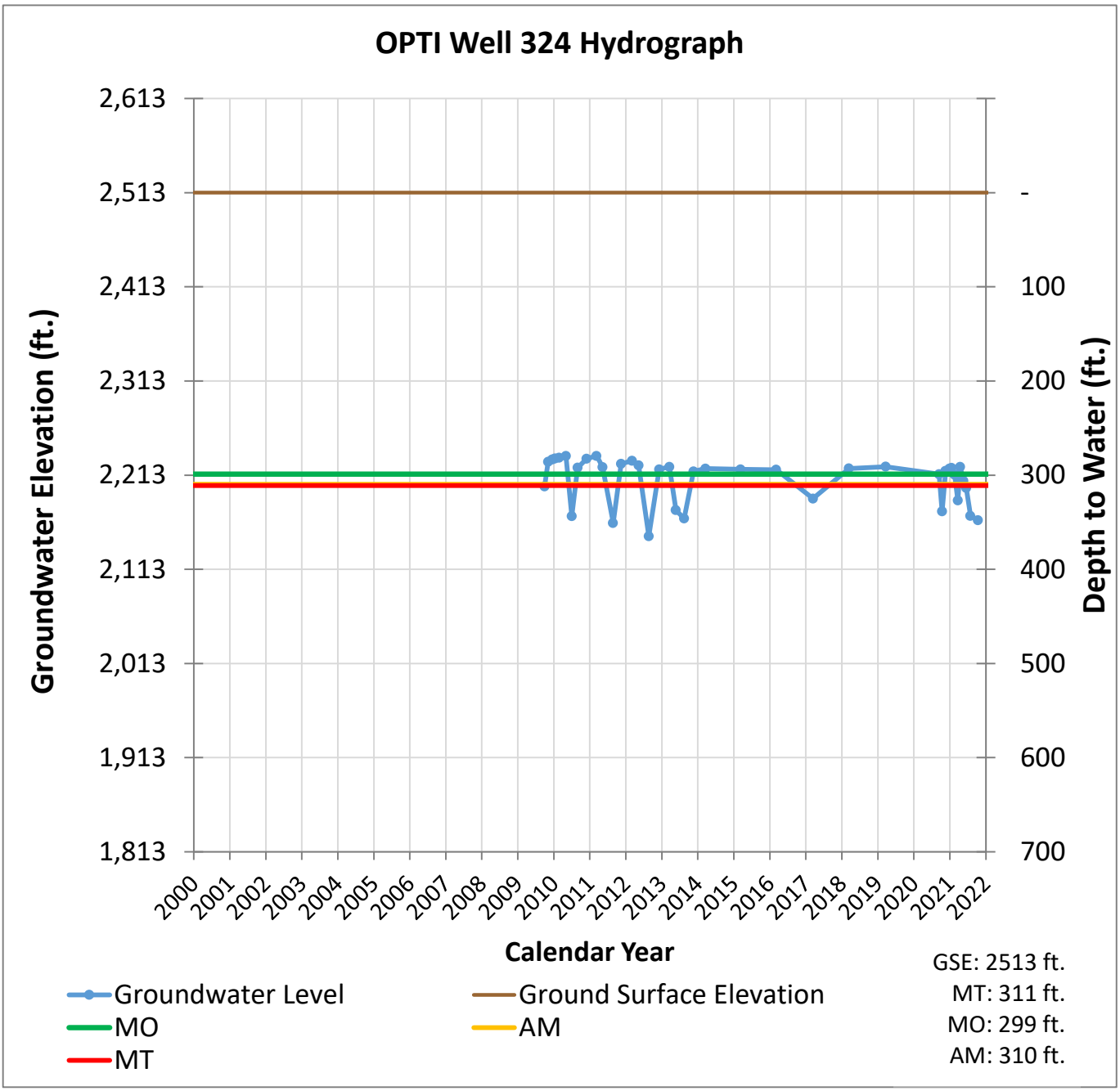

OPTI Well 118 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,370
2,270
2,170
2,070
1,970
1,870
1,770
1,670
1,570
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2270 ft.
MT: 124 ft.
MO: 57 ft.
AM: 117 ft.

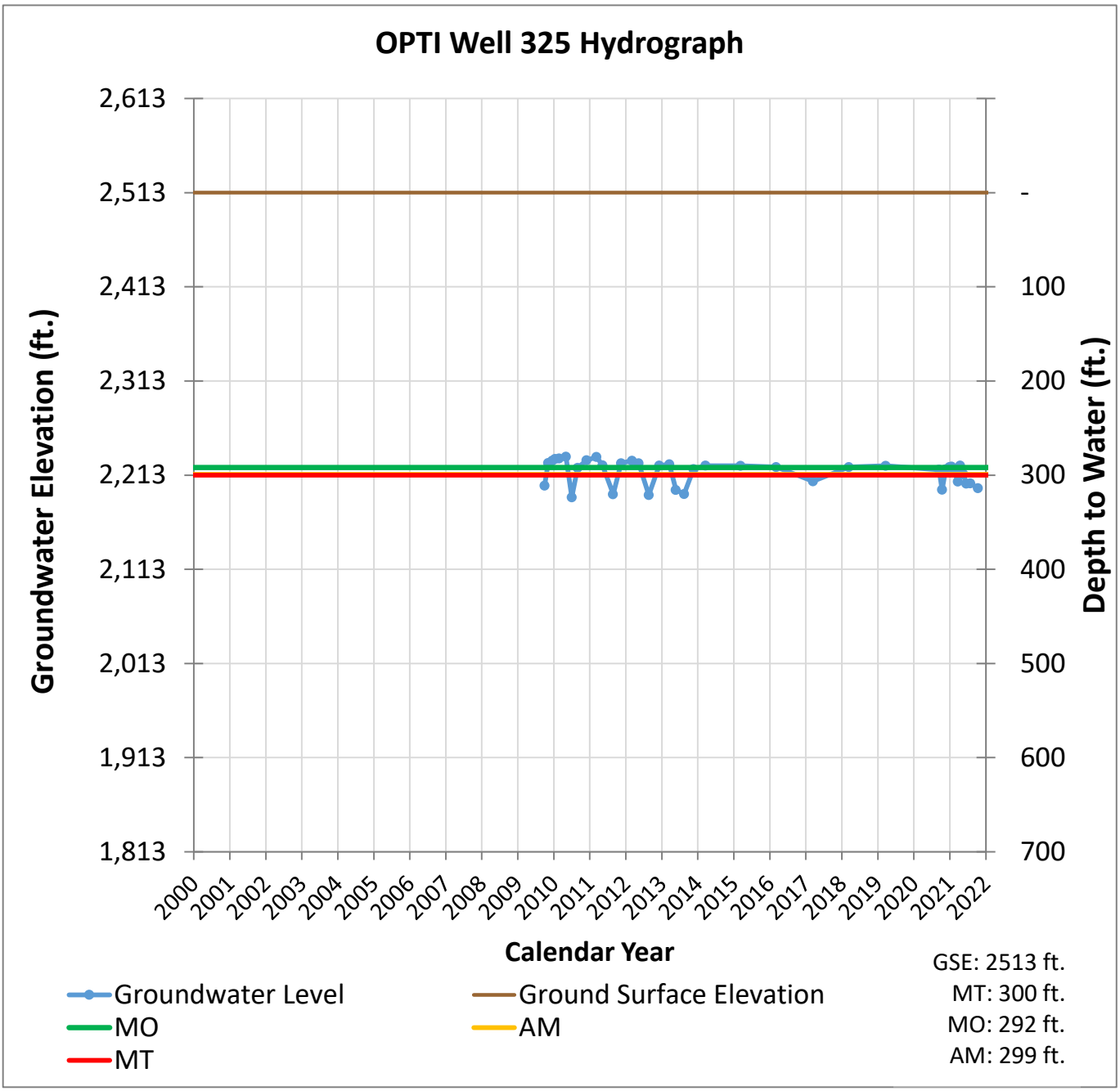

OPTI Well 124 Hydrograph
Groundwater Elevation (ft.)
2,387
2,287
2,187
2,087
1,987
1,887
1,787
1,687
1,587
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2287 ft.
MT: 73 ft.
MO: 57 ft.
AM: 71 ft.

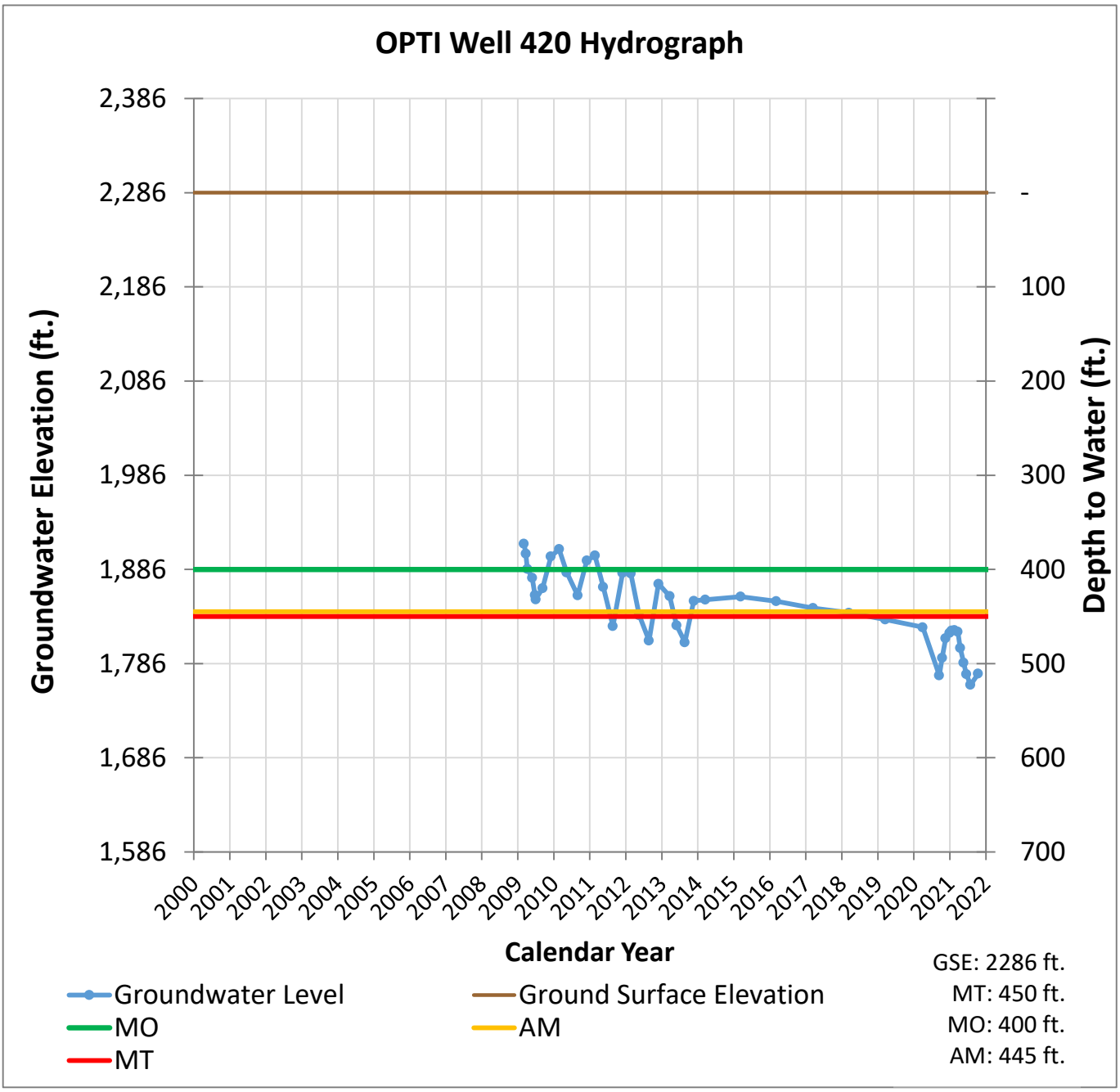

OPTI Well 316 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,574
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 623 ft.
MO: 574 ft.
AM: 618 ft.

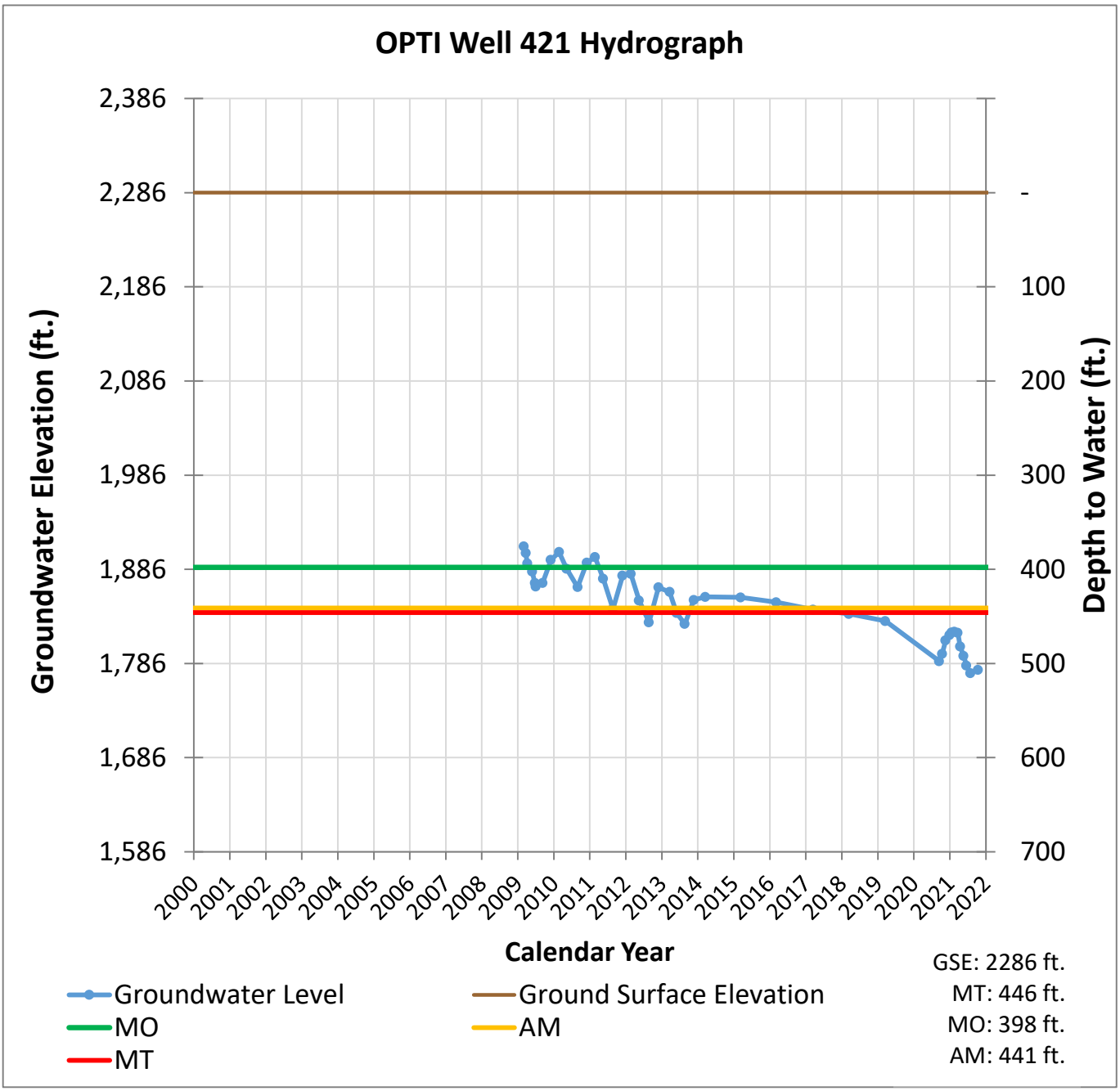

OPTI Well 317 Hydrograph
Groundwater Elevation (ft.)
2,574
2,474
2,374
2,274
2,174
2,074
1,974
1,874
1,774
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2474 ft.
MT: 623 ft.
MO: 573 ft.
AM: 618 ft.

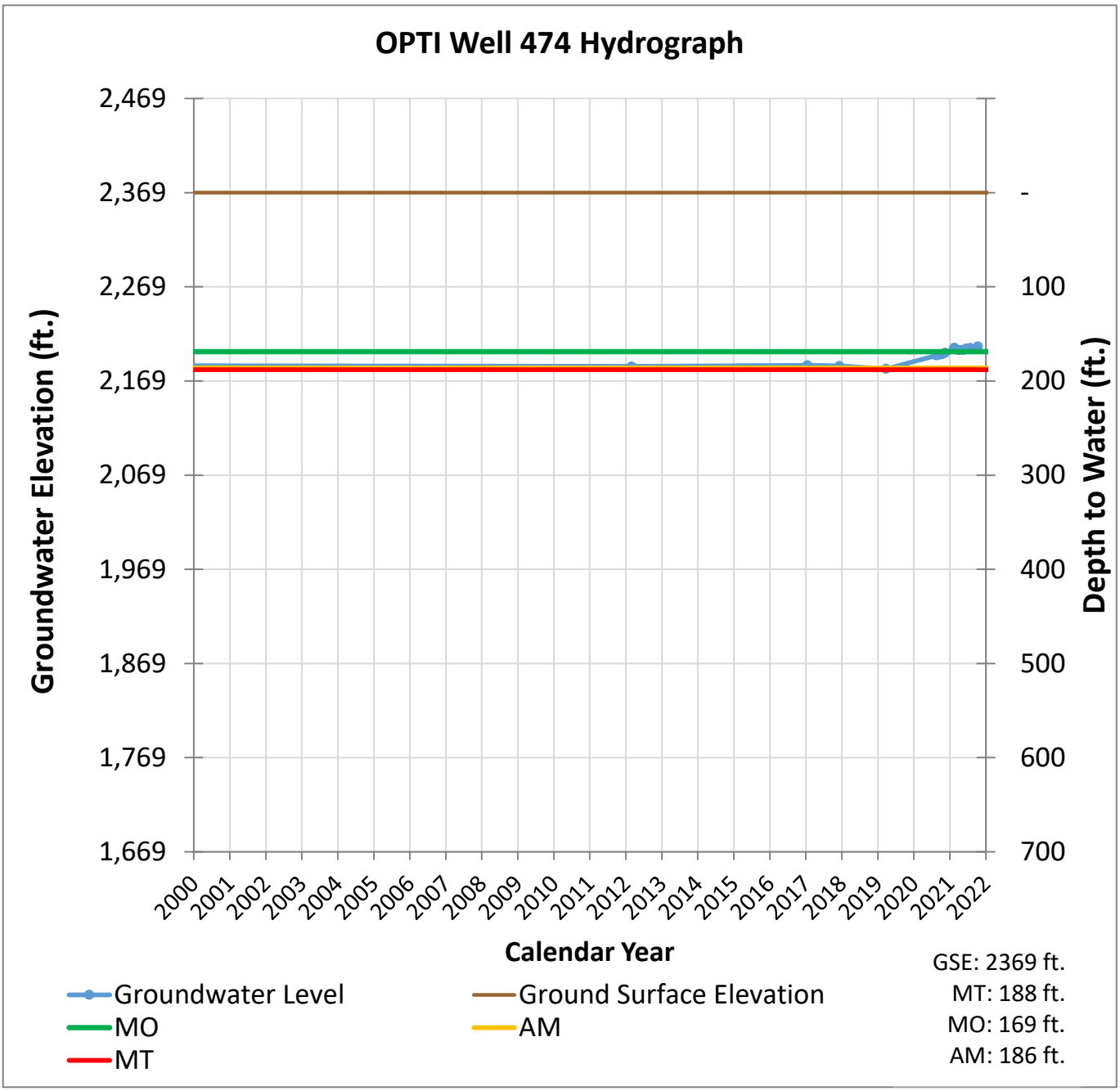

OPTI Well 322 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,613
2,513
2,413
2,313
2,213
2,113
2,013
1,913
1,813
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 307 ft.
MO: 298 ft.
AM: 306 ft.

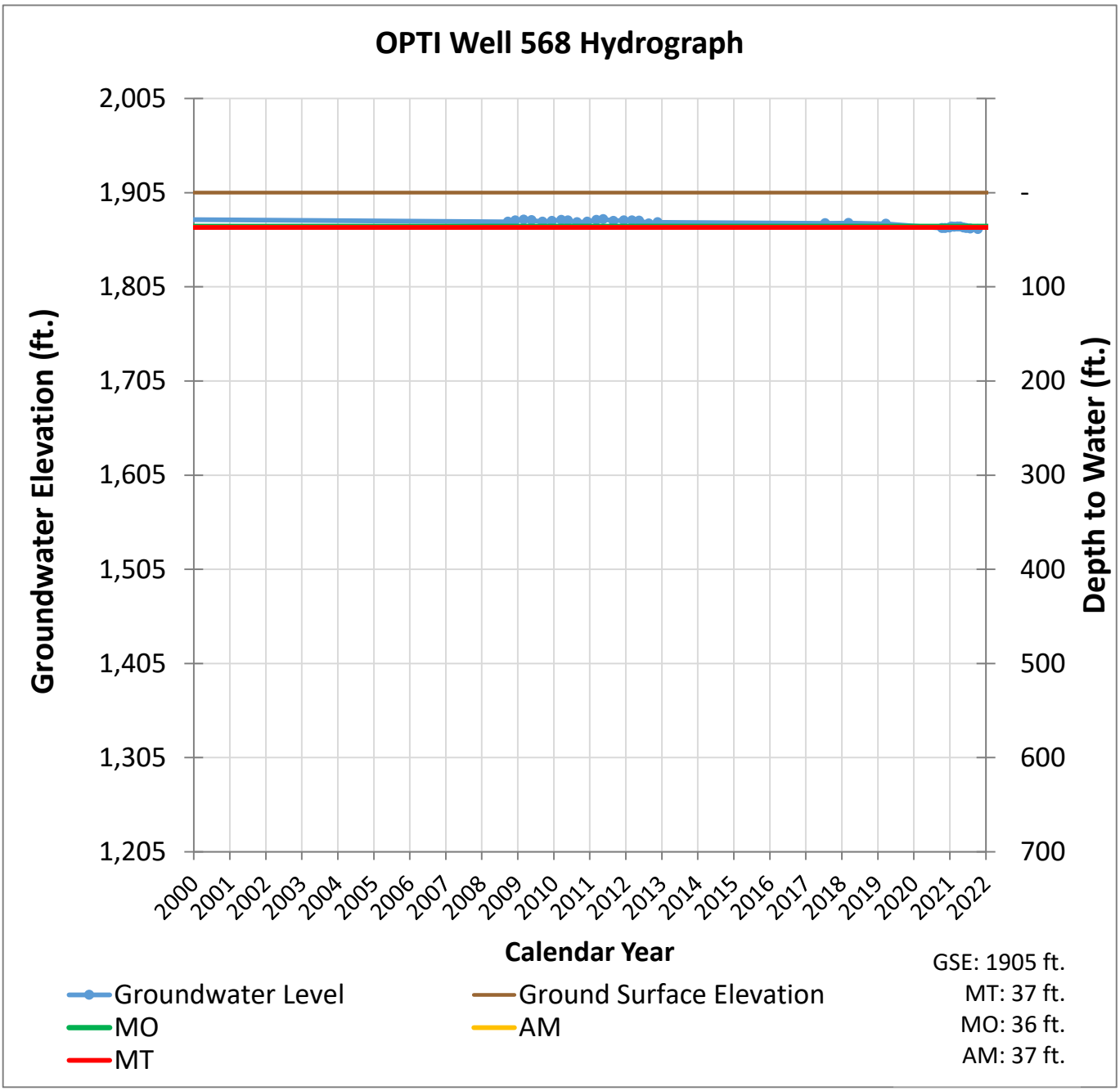

OPTI Well 324 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,613
2,513
2,413
2,313
2,213
2,113
2,013
1,913
1,813
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 311 ft.
MO: 299 ft.
AM: 310 ft.

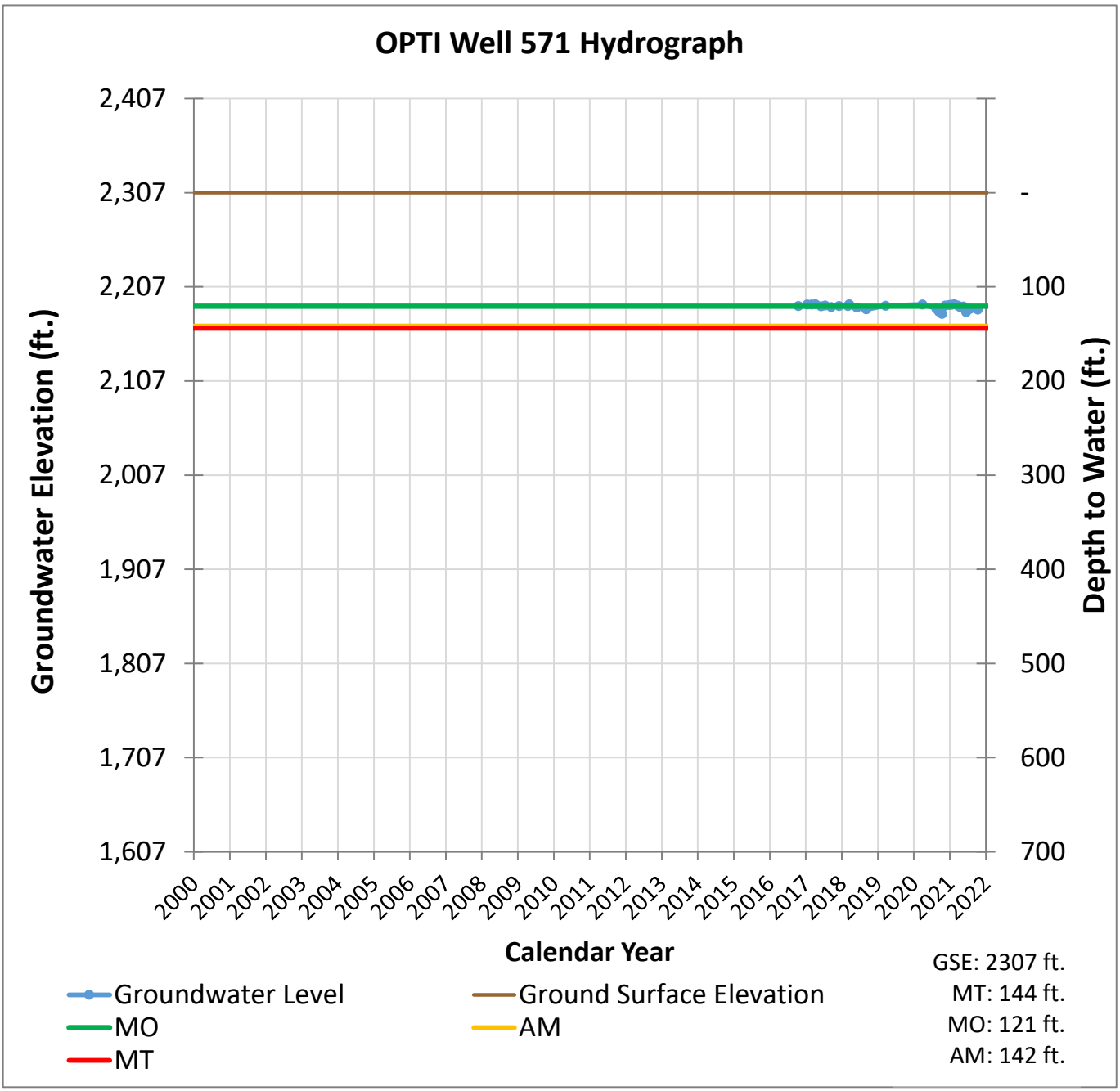

OPTI Well 325 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,613
2,513
2,413
2,313
2,213
2,113
2,013
1,913
1,813
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2513 ft.
MT: 300 ft.
MO: 292 ft.
AM: 299 ft.

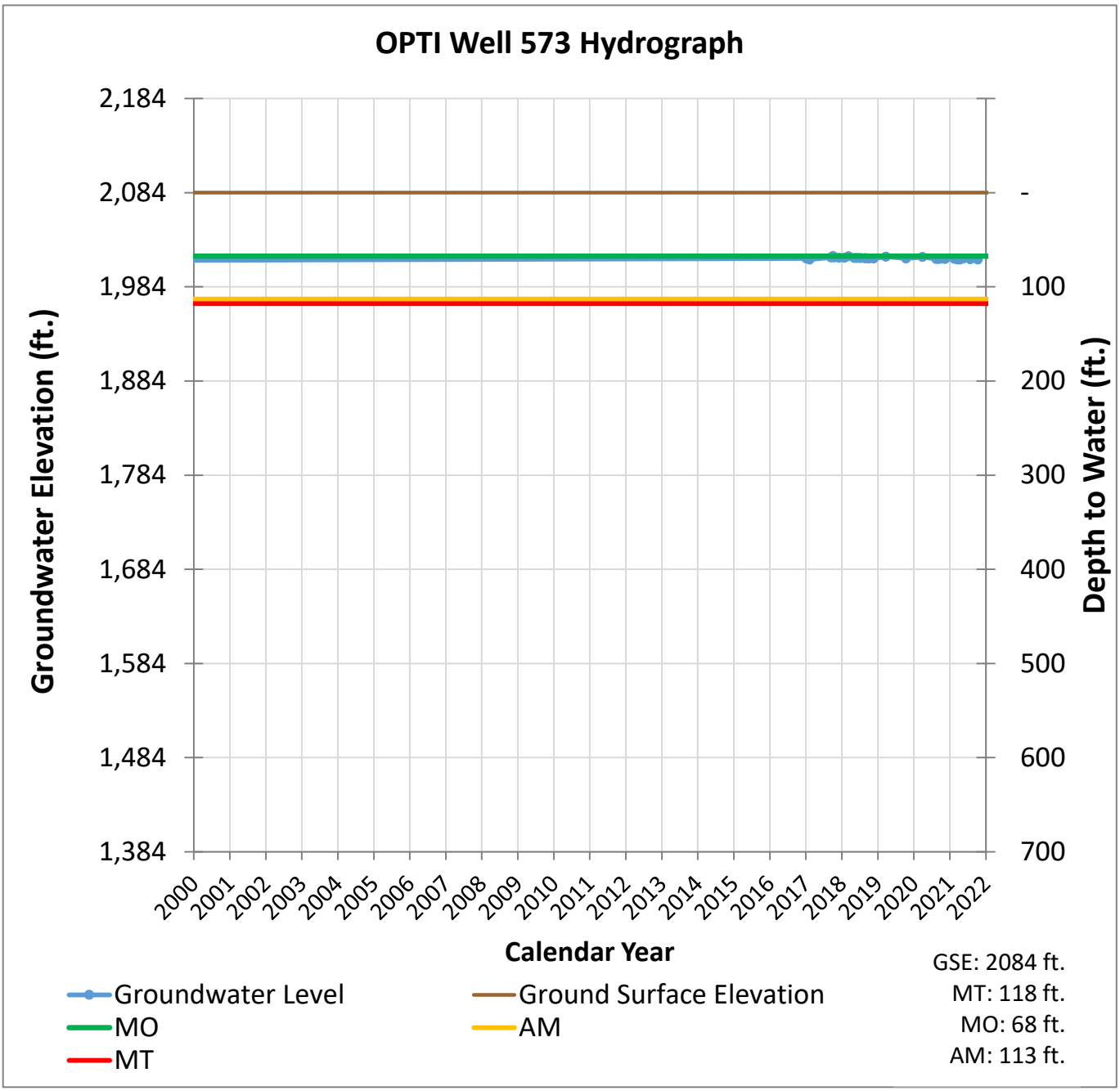

OPTI Well 420 Hydrograph
Groundwater Elevation (ft.)
2,386
2,286
2,186
2,086
1,986
1,886
1,786
1,686
1,586
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 450 ft.
MO: 400 ft.
AM: 445 ft.

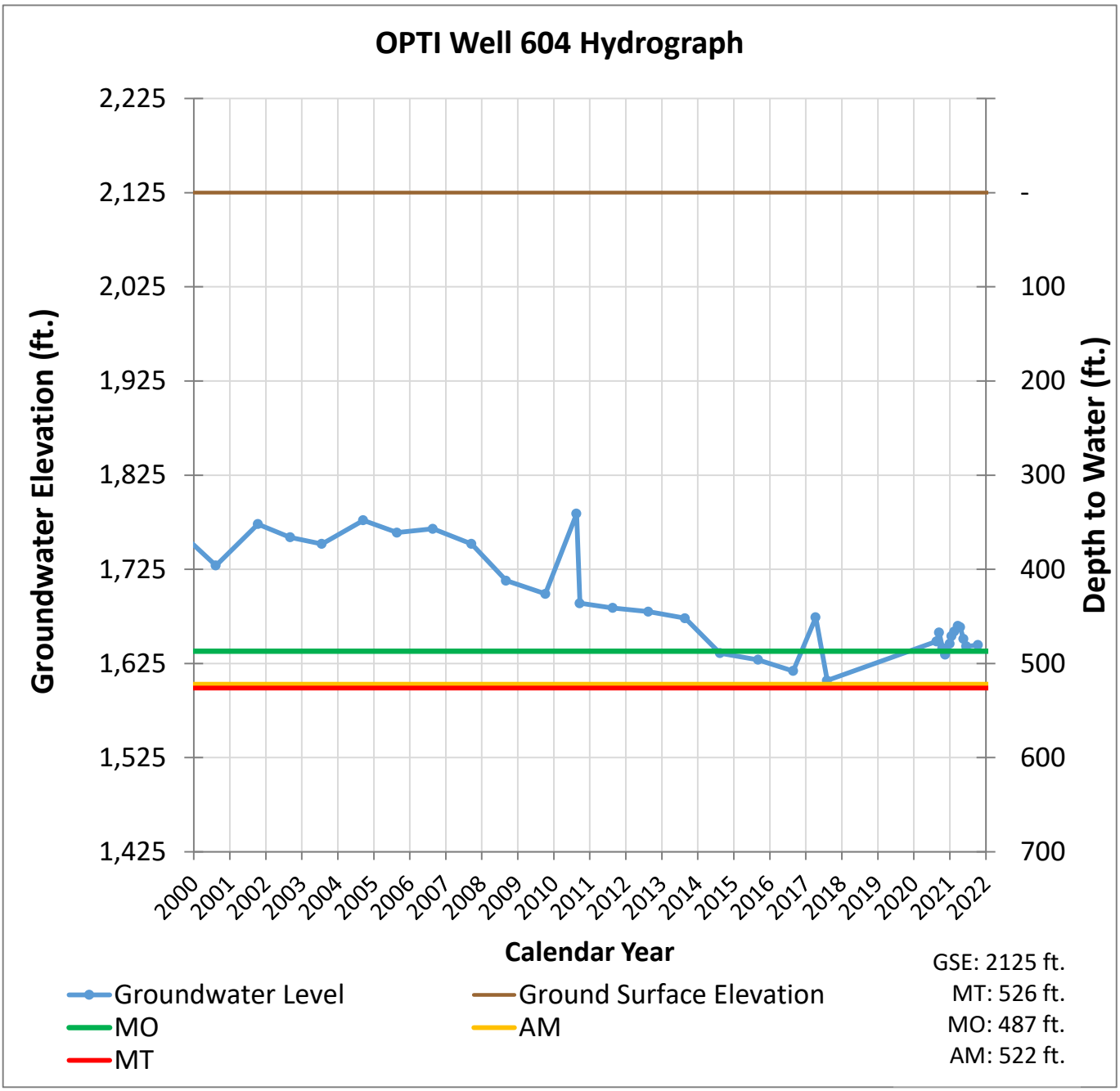

OPTI Well 421 Hydrograph
Groundwater Elevation (ft.)
2,386
2,286
2,186
2,086
1,986
1,886
1,786
1,686
1,586
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2286 ft.
MT: 446 ft.
MO: 398 ft.
AM: 441 ft.

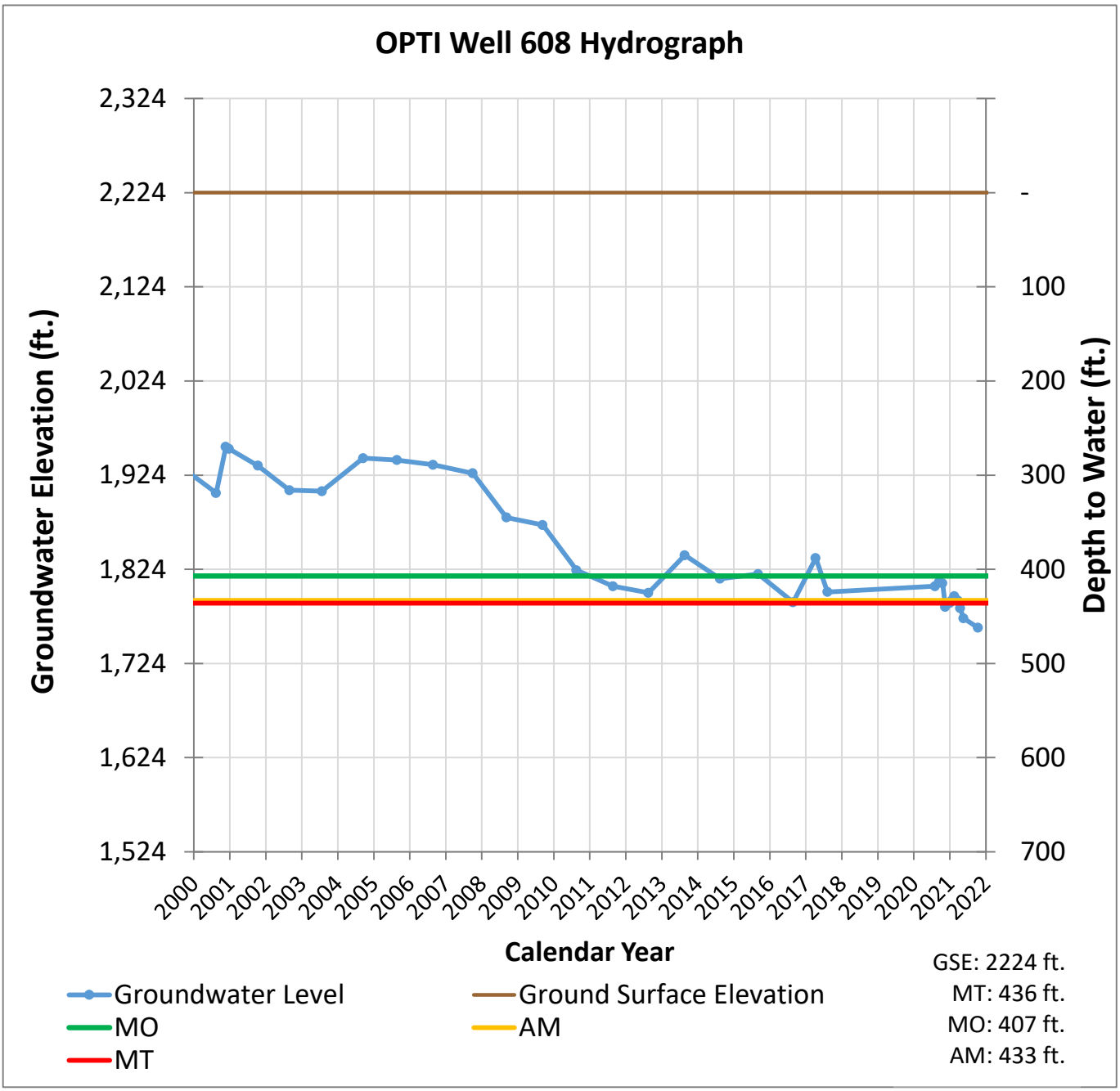

OPTI Well 474 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,469
2,369
2,269
2,169
2,069
1,969
1,869
1,769
1,669
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2369 ft.
MT: 188 ft.
MO: 169 ft.
AM: 186 ft.

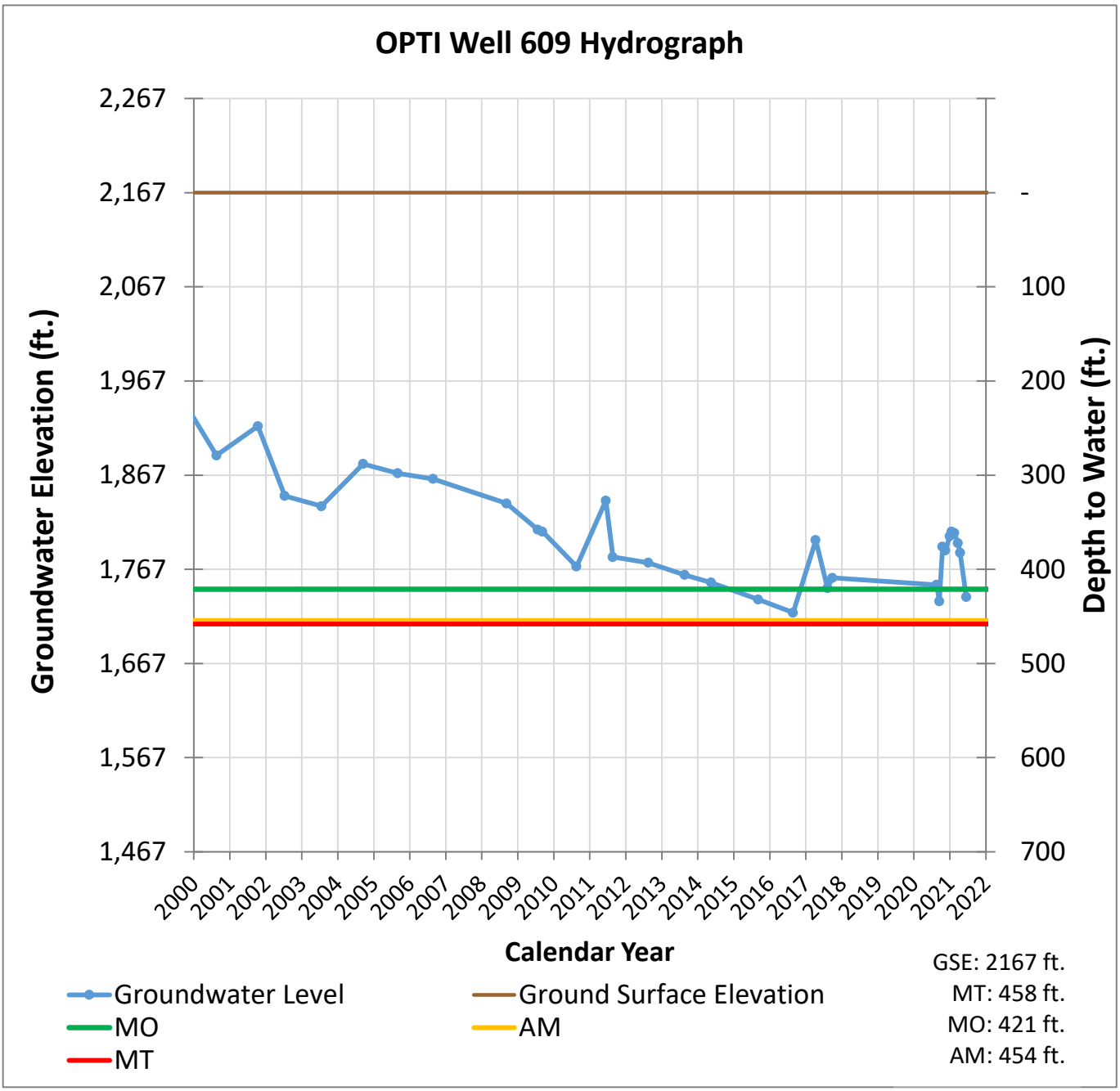

OPTI Well 568 Hydrograph
Groundwater Elevation (ft.)
2,005
1,905
1,805
1,705
1,605
1,505
1,405
1,305
1,205
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1905 ft.
MT: 37 ft.
MO: 36 ft.
AM: 37 ft.

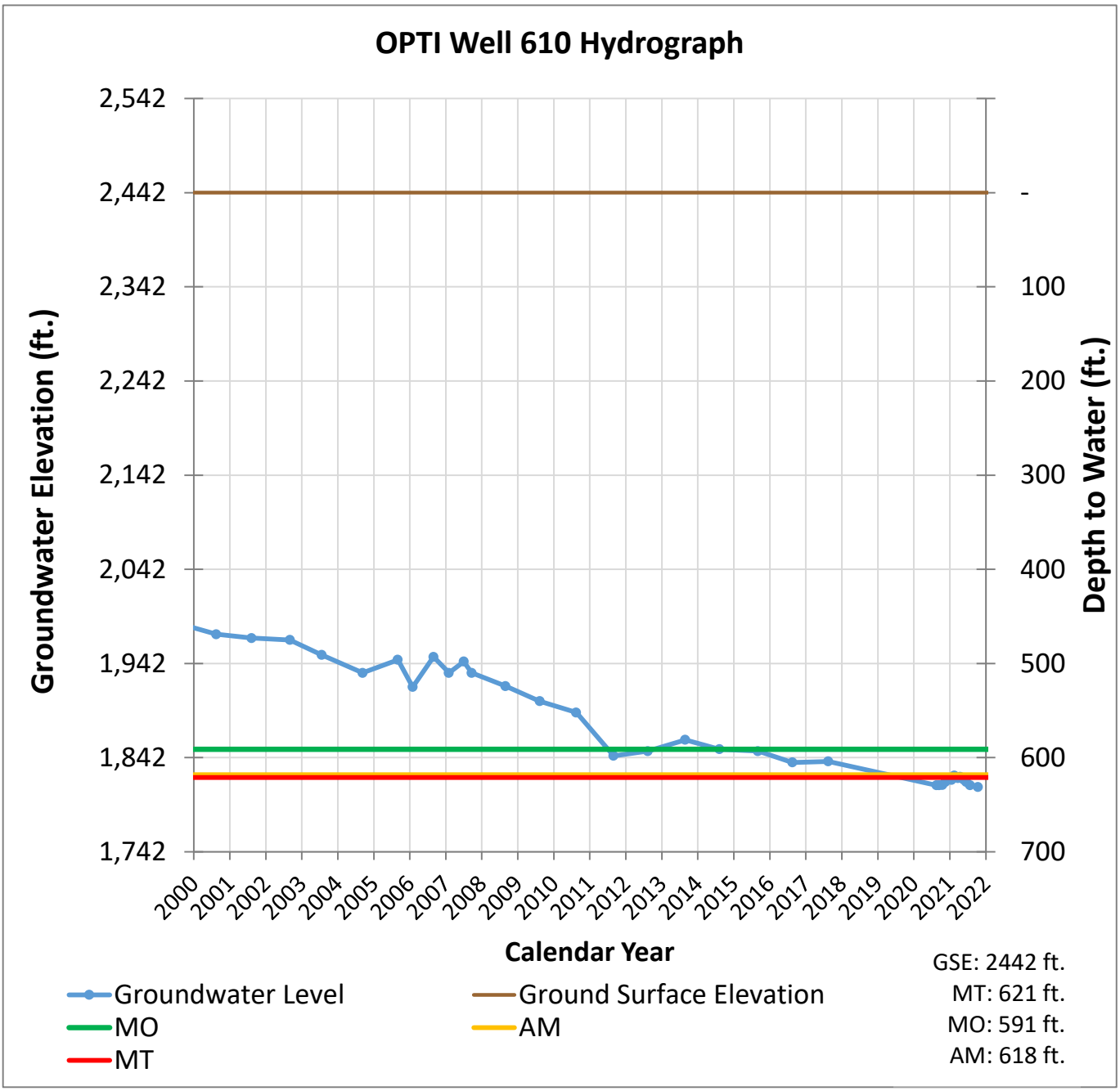

OPTI Well 571 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,407
2,307
2,207
2,107
2,007
1,907
1,807
1,707
1,607
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2307 ft.
MT: 144 ft.
MO: 121 ft.
AM: 142 ft.

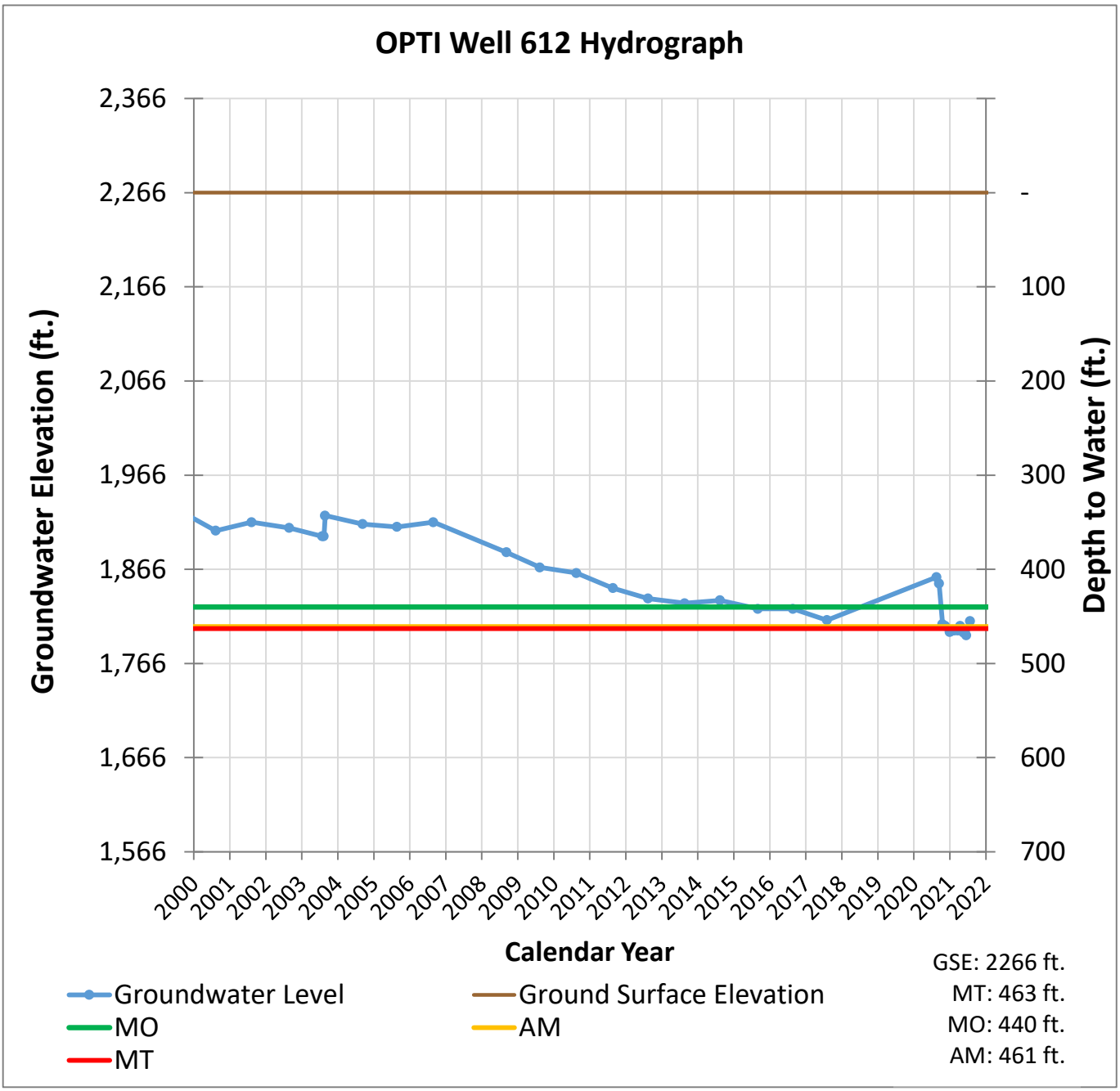

OPTI Well 573 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,184
2,084
1,984
1,884
1,784
1,684
1,584
1,484
1,384
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2084 ft.
MT: 118 ft.
MO: 68 ft.
AM: 113 ft.

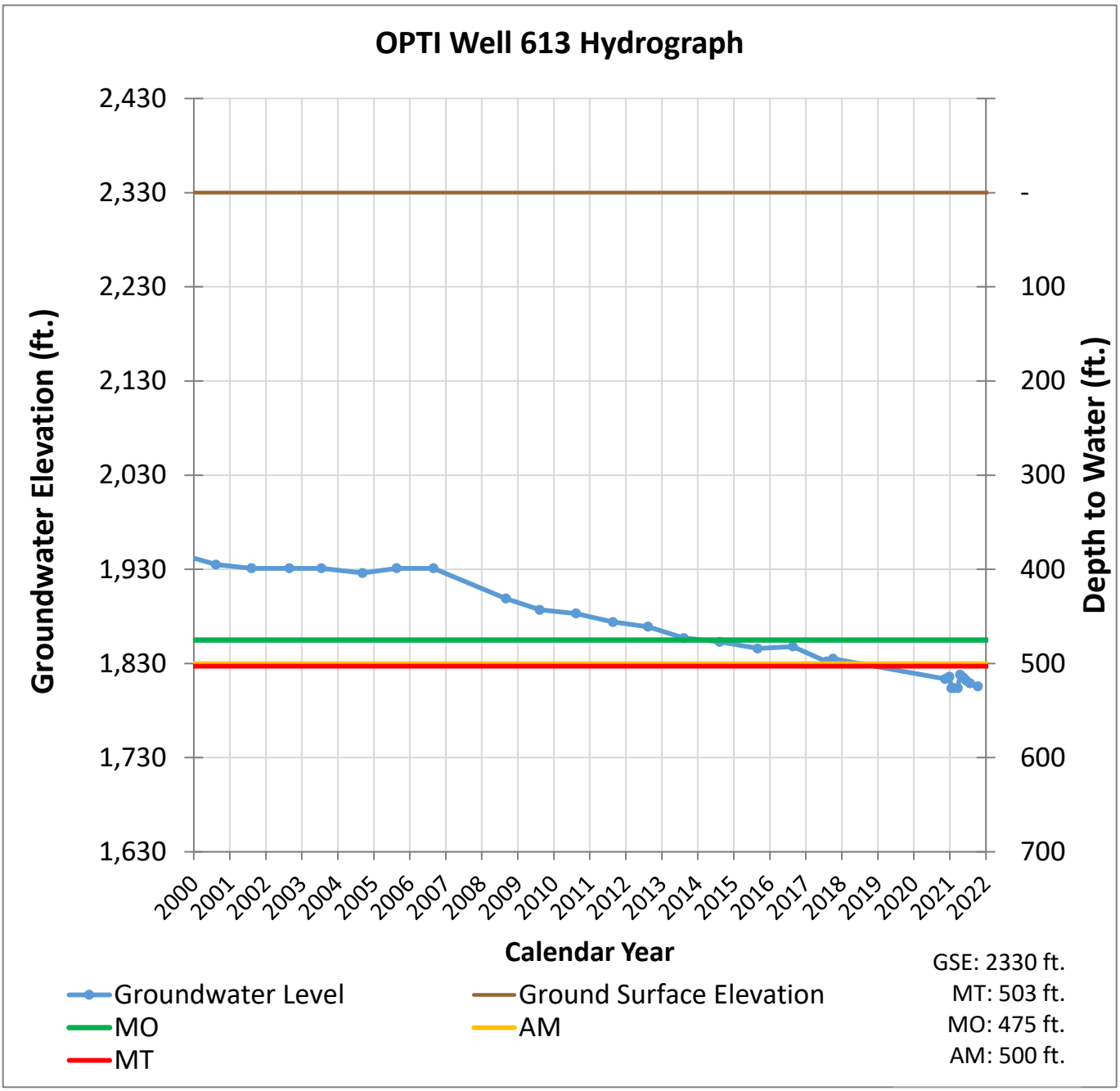

OPTI Well 604 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,225
2,125
2,025
1,925
1,825
1,725
1,625
1,525
1,425
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2125 ft.
MT: 526 ft.
MO: 487 ft.
AM: 522 ft.

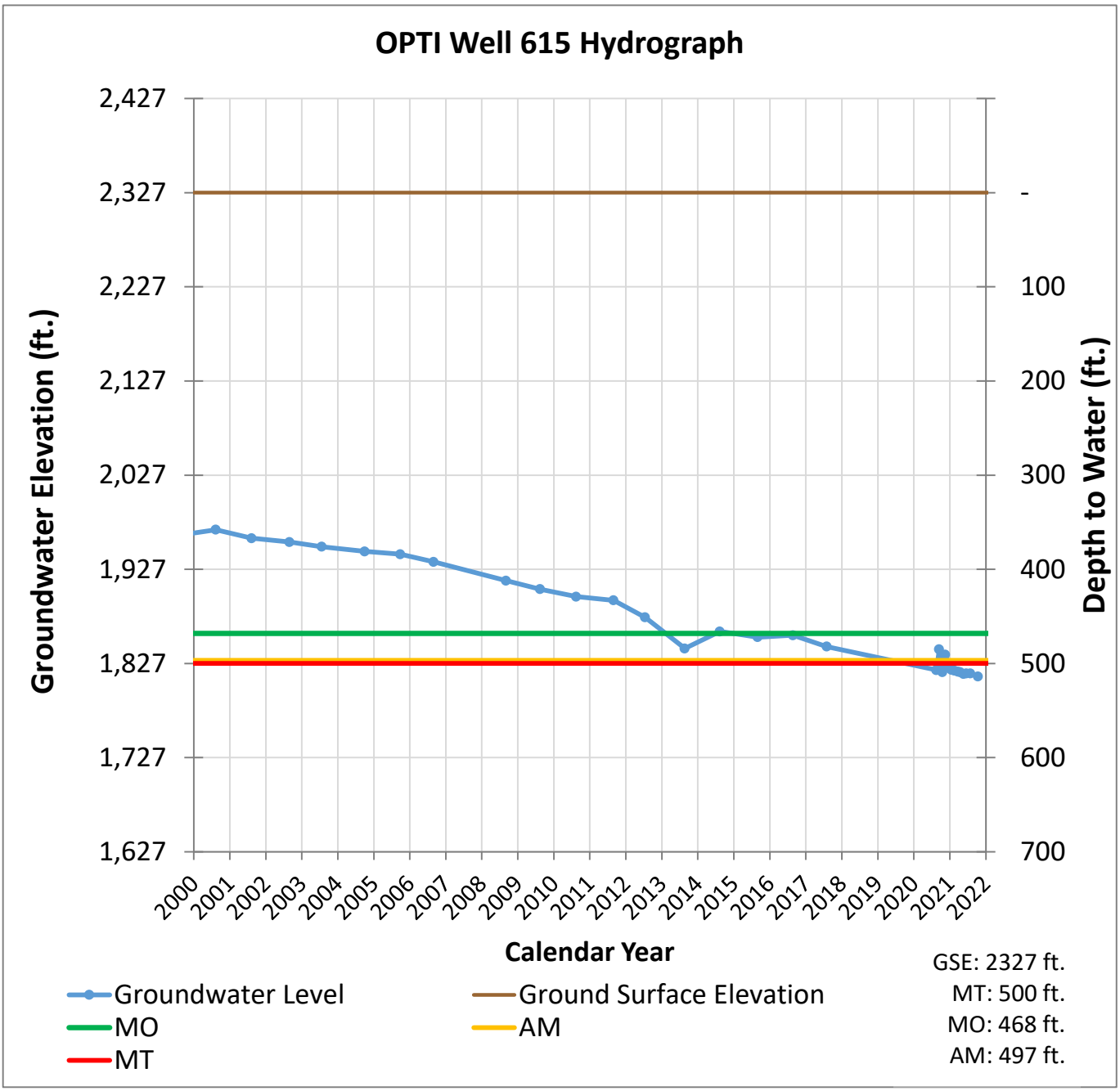

OPTI Well 608 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,324
2,224
2,124
2,024
1,924
1,824
1,724
1,624
1,524
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2224 ft.
MT: 436 ft.
MO: 407 ft.
AM: 433 ft.

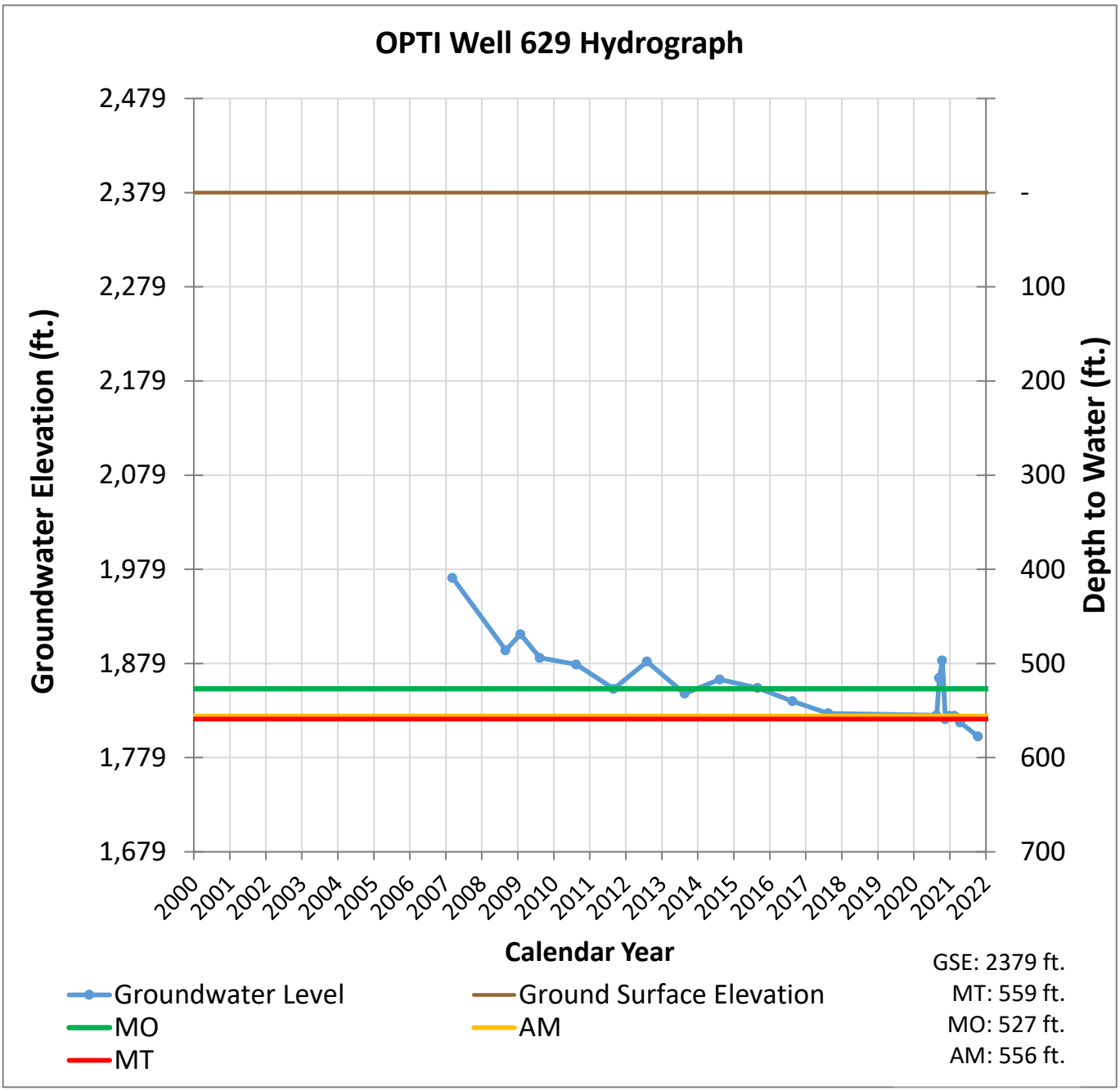

OPTI Well 609 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,267
2,167
2,067
1,967
1,867
1,767
1,667
1,567
1,467
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2167 ft.
MT: 458 ft.
MO: 421 ft.
AM: 454 ft.

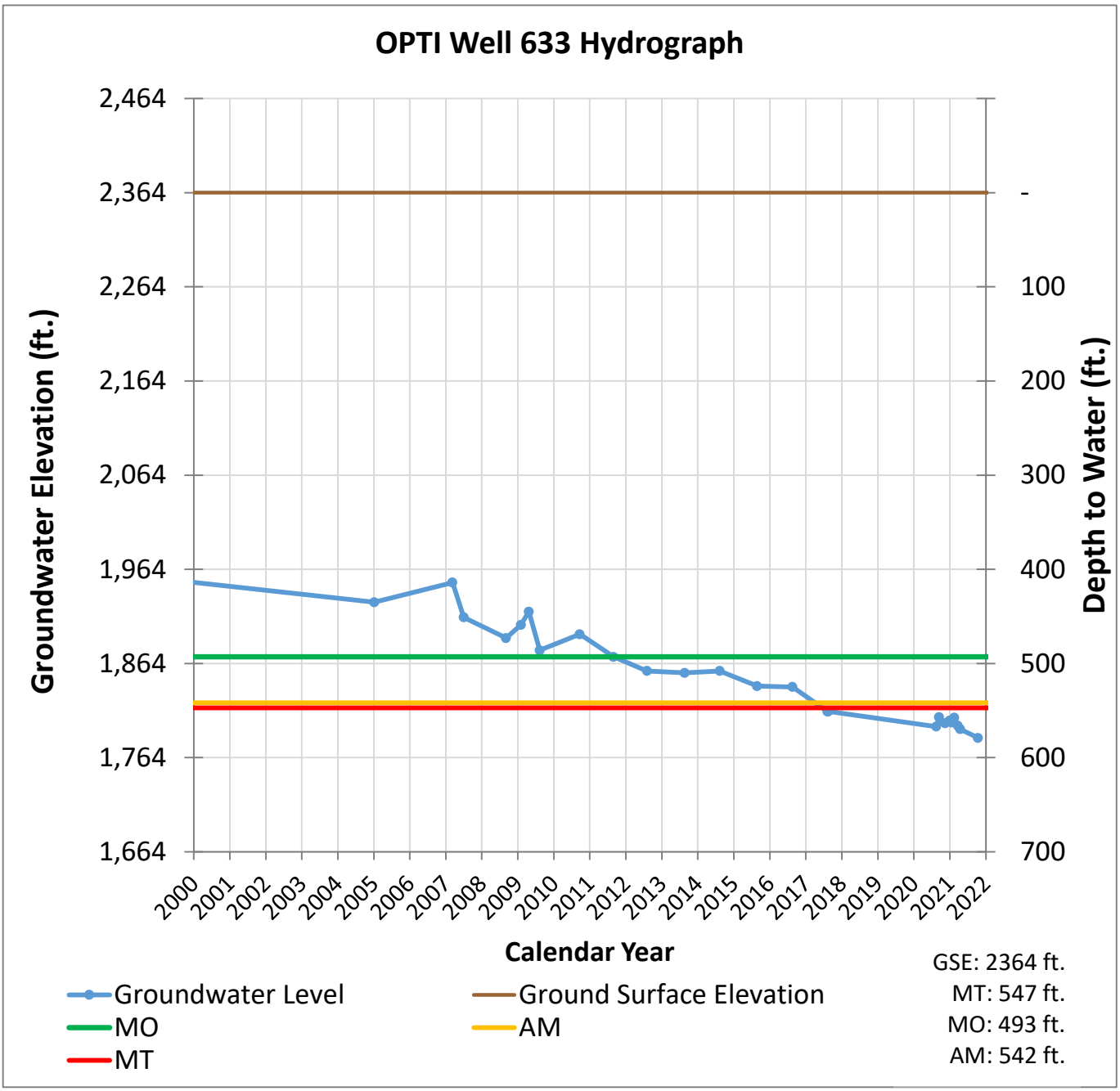

OPTI Well 610 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,542
2,442
2,342
2,242
2,142
2,042
1,942
1,842
1,742
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2442 ft.
MT: 621 ft.
MO: 591 ft.
AM: 618 ft.

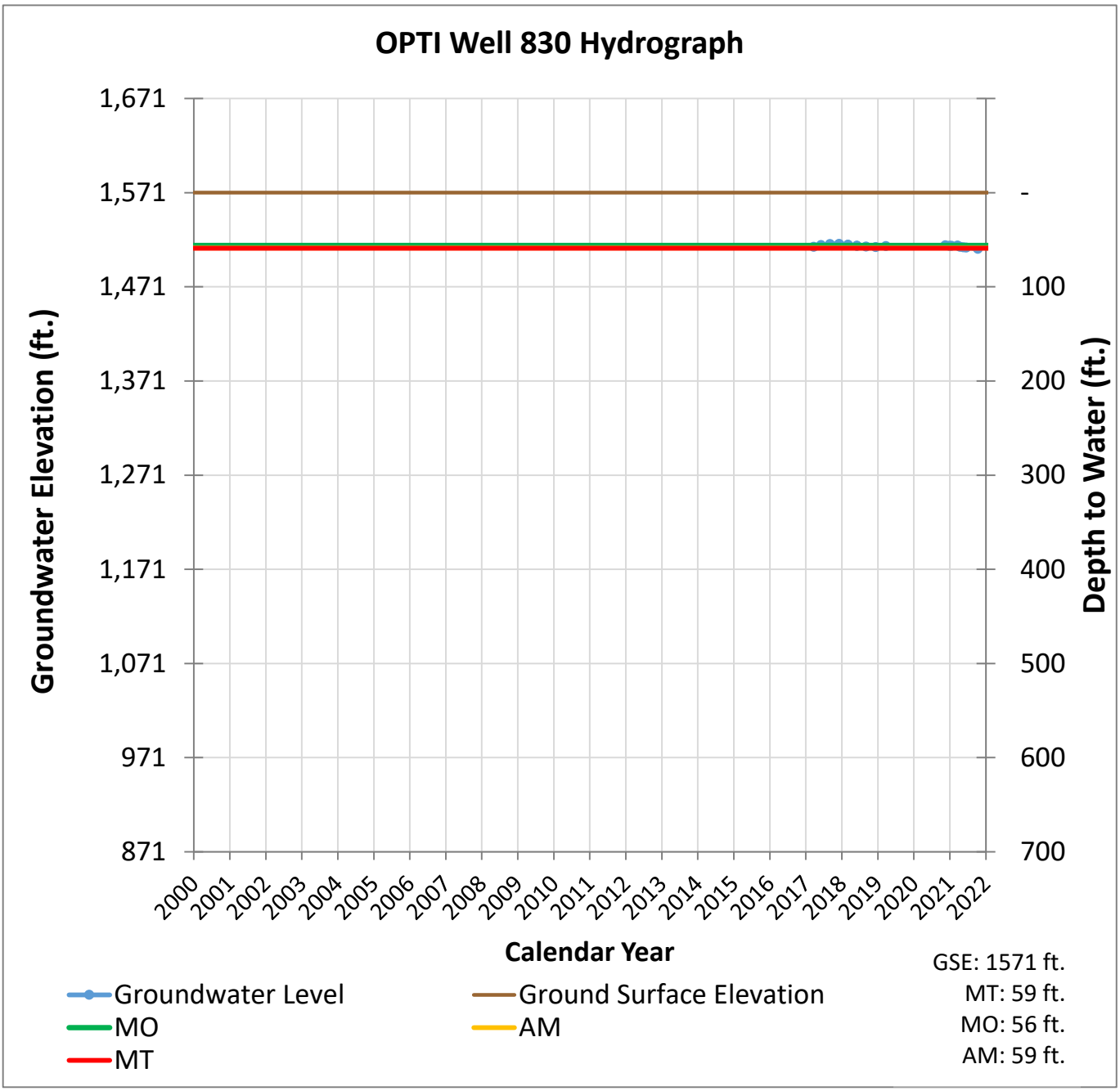

OPTI Well 612 Hydrograph
Groundwater Elevation (ft.)
2,366
2,266
2,166
2,066
1,966
1,866
1,766
1,666
1,566
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2266 ft.
MT: 463 ft.
MO: 440 ft.
AM: 461 ft.

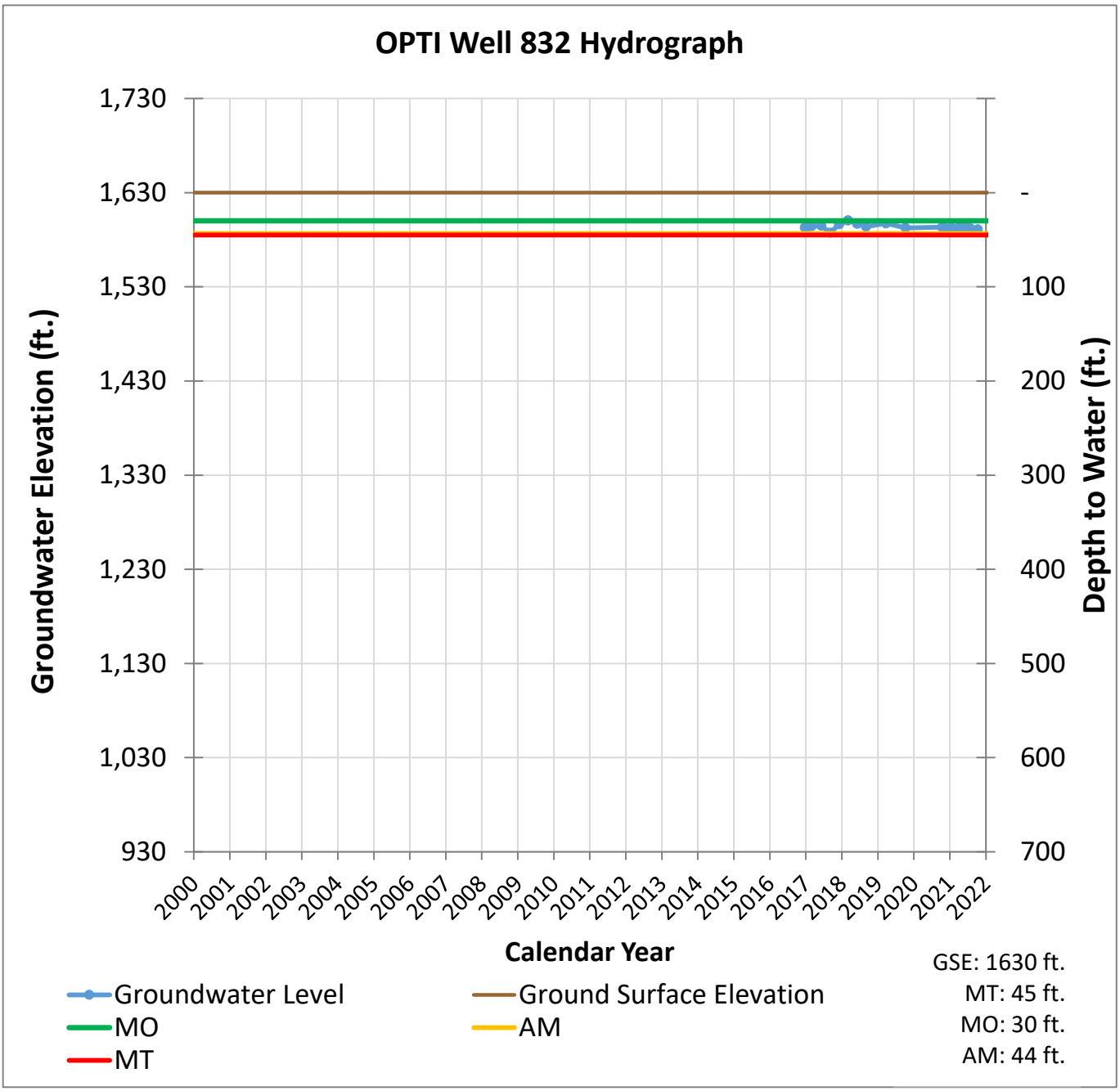

OPTI Well 613 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,430
2,330
2,230
2,130
2,030
1,930
1,830
1,730
1,630
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2330 ft.
MT: 503 ft.
MO: 475 ft.
AM: 500 ft.

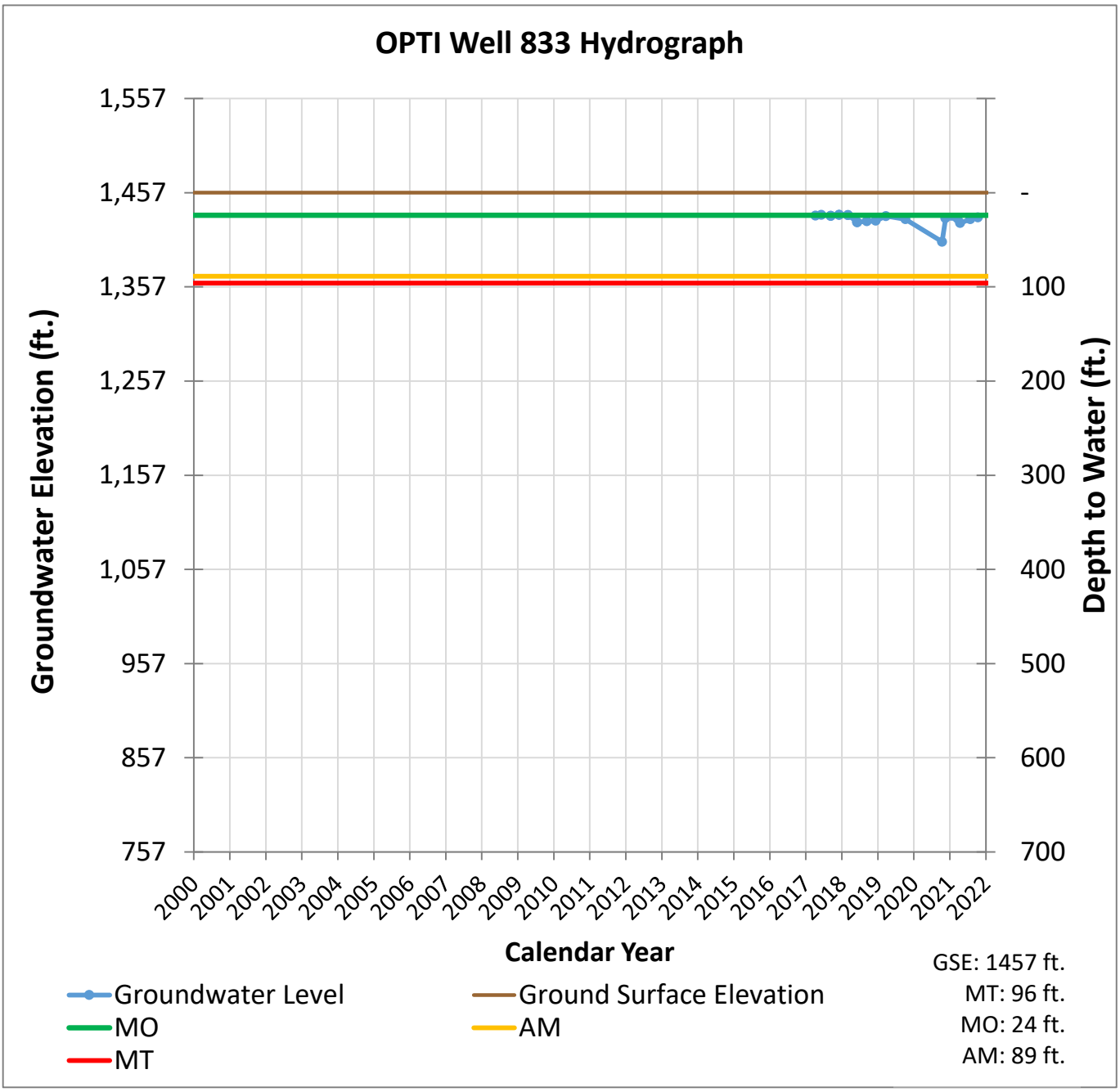

OPTI Well 615 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,427
2,327
2,227
2,127
2,027
1,927
1,827
1,727
1,627
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2327 ft.
MT: 500 ft.
MO: 468 ft.
AM: 497 ft.

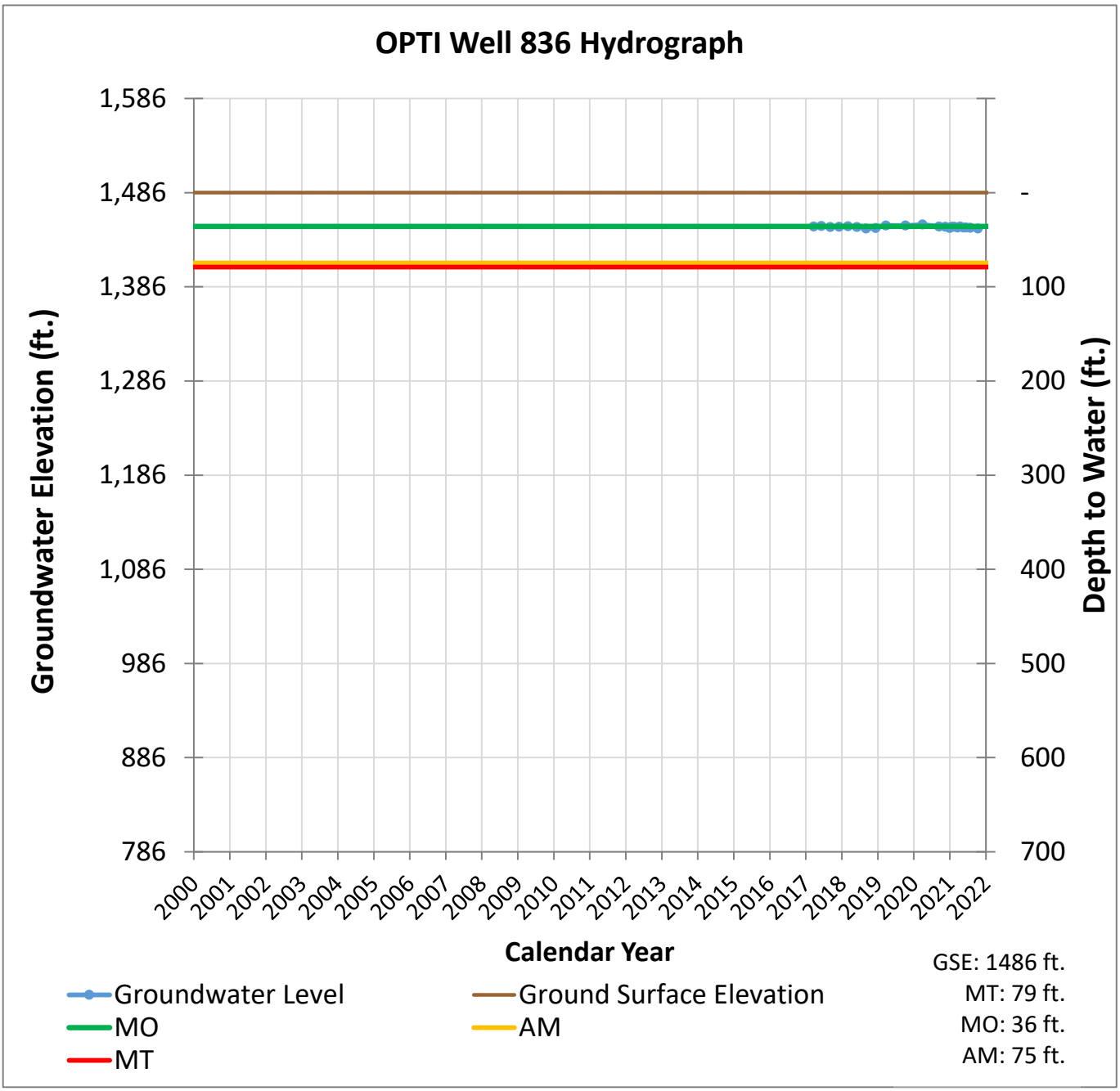

OPTI Well 629 Hydrograph
Groundwater Elevation (ft.)
2,479
2,379
2,279
2,179
2,079
1,979
1,879
1,779
1,679
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2379 ft.
MT: 559 ft.
MO: 527 ft.
AM: 556 ft.

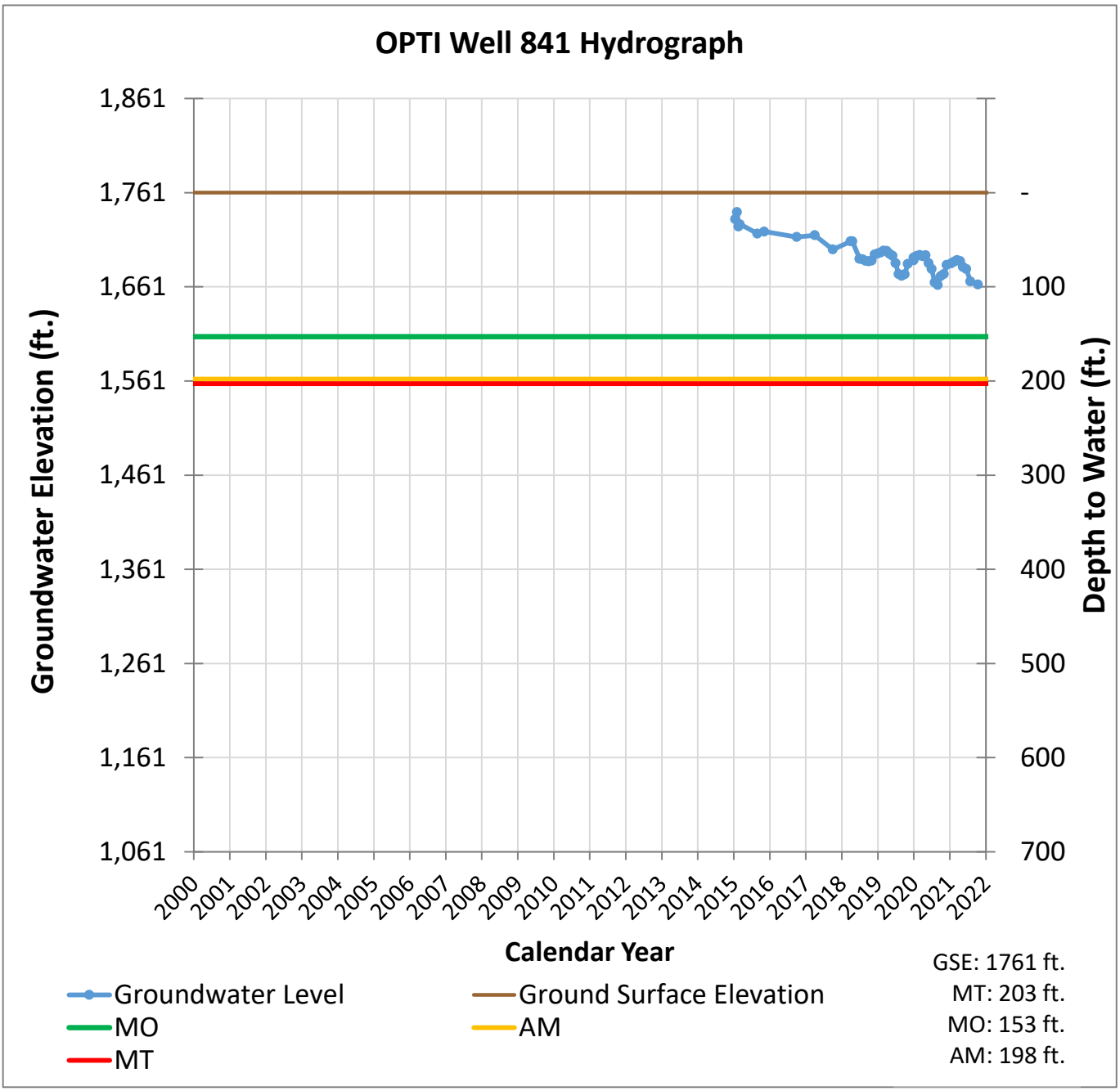

OPTI Well 633 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
2,464
2,364
2,264
2,164
2,064
1,964
1,864
1,764
1,664
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 2364 ft.
MT: 547 ft.
MO: 493 ft.
AM: 542 ft.

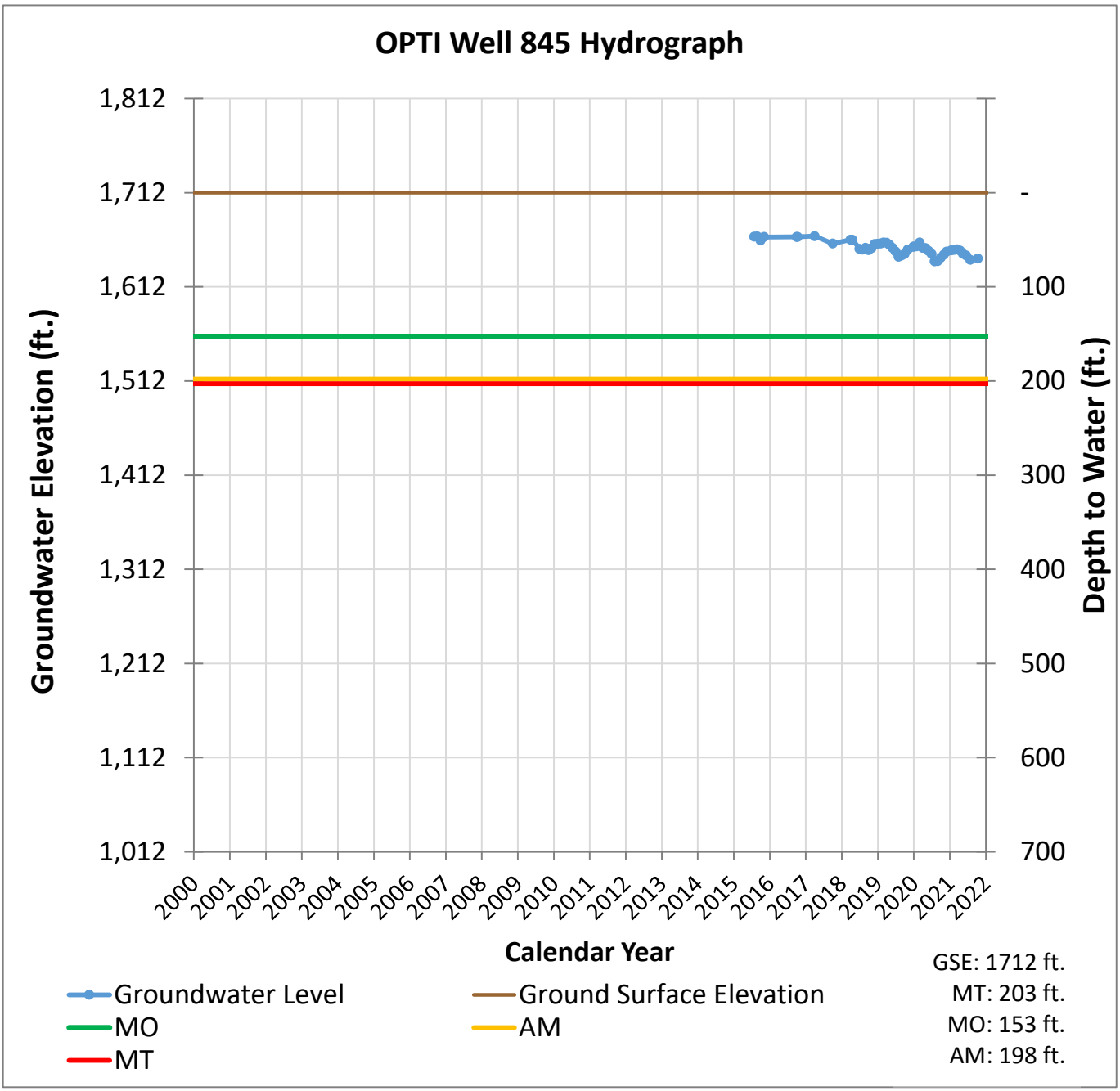

OPTI Well 830 Hydrograph
Groundwater Elevation (ft.)
1,671
1,571
1,471
1,371
1,271
1,171
1,071
971
871
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1571 ft.
MT: 59 ft.
MO: 56 ft.
AM: 59 ft.


OPTI Well 832 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
1,730
1,630
1,530
1,430
1,330
1,230
1,130
1,030
930
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1630 ft.
MT: 45 ft.
MO: 30 ft.
AM: 44 ft.


OPTI Well 833 Hydrograph
Groundwater Elevation (ft.)
1,557
1,457
1,357
1,257
1,157
1,057
957
857
757
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1457 ft.
MT: 96 ft.
MO: 24 ft.
AM: 89 ft.


OPTI Well 836 Hydrograph
Groundwater Elevation (ft.)
1,586
1,486
1,386
1,286
1,186
1,086
986
886
786
Depth to Water (ft.)
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1486 ft.
MT: 79 ft.
MO: 36 ft.
AM: 75 ft.


OPTI Well 841 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
1,861
1,761
1,661
1,561
1,461
1,361
1,261
1,161
1,061
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1761 ft.
MT: 203 ft.
MO: 153 ft.
AM: 198 ft.


OPTI Well 845 Hydrograph
Groundwater Elevation (ft.)
Depth to Water (ft.)
1,812
1,712
1,612
1,512
1,412
1,312
1,212
1,112
1,012
-
100
200
300
400
500
600
700
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Groundwater Level
Ground Surface Elevation
MO
AM
MT
GSE: 1712 ft.
MT: 203 ft.
MO: 153 ft.
AM: 198 ft.

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TO: Standing Advisory Committee
Agenda Item No. 7f

FROM: Jim Beck / Brian Van Lienden

DATE: February 24, 2022

SUBJECT: Direction on Adaptive Management Actions

Issue
Discussion on adaptive management actions for groundwater level wells in the Cuyama basin.

Recommended Motion
SAC feedback requested.

Discussion
Background
The Cuyama Basin Groundwater Sustainability Agency's Groundwater Sustainable Plan (GSP) established adaptive management actions for representative wells that are below their minimum threshold or within 10 percent of the minimum threshold (Section 7.6 of the GSP).

The Adaptive Management ad hoc met on June 28, 2021 , and on August 18, 2021, the Board passed a motion to adopt the ad hoc committee's recommendation to (1) make no changes to thresholds or the glide path for now, (2) continue to perform monitoring of groundwater levels, and (3) perform an analysis of nearby production wells to determine if any are in danger of going dry, including an analysis of the well in question, and provide a link on the website to allow landowners to provide information on potential groundwater level impacts to wells.

Woodard & Curran performed an analysis to determine if wells are in danger of going dry and presented the results of a technical memo to the Adaptive Management Ad hoc on November 30, 2021 and to the Board on January 5, 2022.

Current Update
On January 5, 2022, the Board directed staff to perform additional data gathering and analysis to confirm condition of wells identified in the well status analysis including (1) desktop analysis and phone outreach to be performed by Woodard & Curran (W&C), and (2) field verification to be performed by Provost & Pritchard if required.

A summary of W&C's progress is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Direction on Adaptive Management Actions

Jim Beck / Brian Van Lienden

February 24, 2022

Adaptive Management Background

- Adaptive Management Included in the GSP (section 7.6):
  - Adaptive management triggers are thresholds that, if reached, initiate the process for considering implementation of adaptive management actions or projects. For CBGSA, the trigger for adaptive management and CBGSA's next steps would be as follows:
    - If the Basin is within 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.
- Groundwater levels monitoring report is showing some representative monitoring wells falling below minimum thresholds

Results of Well Status Analysis

- An analysis was performed that compared production and domestic well depths (or bottom or perforations) versus Oct 2021 monitoring well elevations

Table 1. Summary of Domestic and Production Wells Status as of October 2021

Threshold Region	Total number of wells	Domestic wells that may currently be dry	Total wells that may currently be dry	Percentage of wells that may currently be dry	Total wells that are almost dry
Northwestern	16	0	0	0%	2
Western	40	0	0	0%	0
Central	89	2	4	5%	4
Eastern	39	1	4	10%	2
Southeastern	66	1	1	2%	1
Whole Basin	***250***	***4***	***9***	***4%***	***9***

Results of Desktop Follow-On Analysis

- Board direction at January Board meeting was to do analysis to confirm condition of wells identified in the well status analysis:
  1. Desktop analysis and phone outreach to be performed by W&C
  2. Field verification to be performed by P&P (to be determined after step 1)
- A desktop analysis was performed by Woodard & Curran:
  - Landowners/operators for 10 of 18 wells identified were successfully contacted
    - 2 wells have experienced problems in recent years
    - 3 wells exist but are no longer in use
    - In 5 cases, no well could be identified in the location identified by the County database
- Request for Board direction: should staff move onto step 2 (field verification)?

TO: Standing Advisory Committee
Agenda Item No. 7g

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 24, 2022

SUBJECT: Update on Groundwater Sustainability Plan Activities

Issue
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

Update on Groundwater Sustainability Plan Activities

Brian Van Lienden

February 24, 2022

January-February Accomplishments

- ✓ Developed draft Annual Report for Water Year 2020-2021
- ✓ Performed follow-on analysis of wells in support of adaptive management program
- ✓ Performed analysis of pumping by landowner for Management Area ad-hoc committee
- ✓ Developed grant proposal for DWR COD grant opportunity
- ✓ Developed January Groundwater Conditions Report
- ✓ Coordinated with DWR on Basin GSP determination

TO: Standing Advisory Committee
Agenda Item No. 7h

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 24, 2022

SUBJECT: Update on Model Progress

Issue
Update on Model Progress.

Recommended Motion
None – information only.

Discussion
On May 5, 2022, the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board approved a model update as part of the Fiscal Year 2021-2022 budget adoption.

The model update is scheduled to completed by July 2022 and a progress updated is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Update on Model Refinement

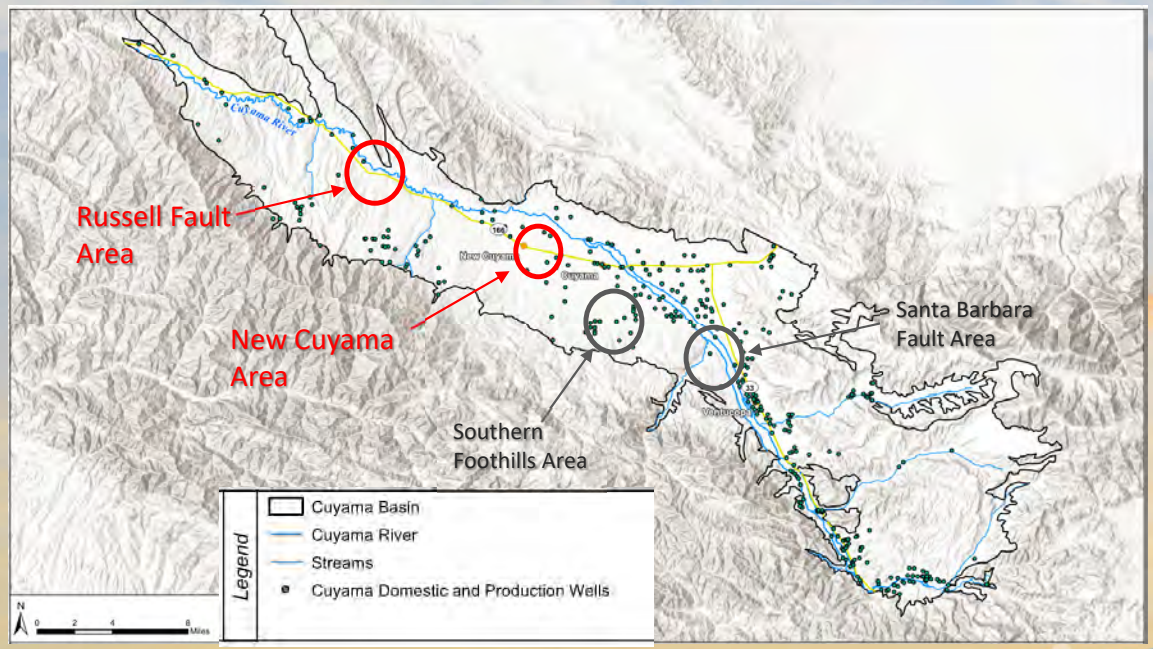
Brian Van Lienden

February 24, 2022

Aquifer Testing and Model Refinement and Schedule

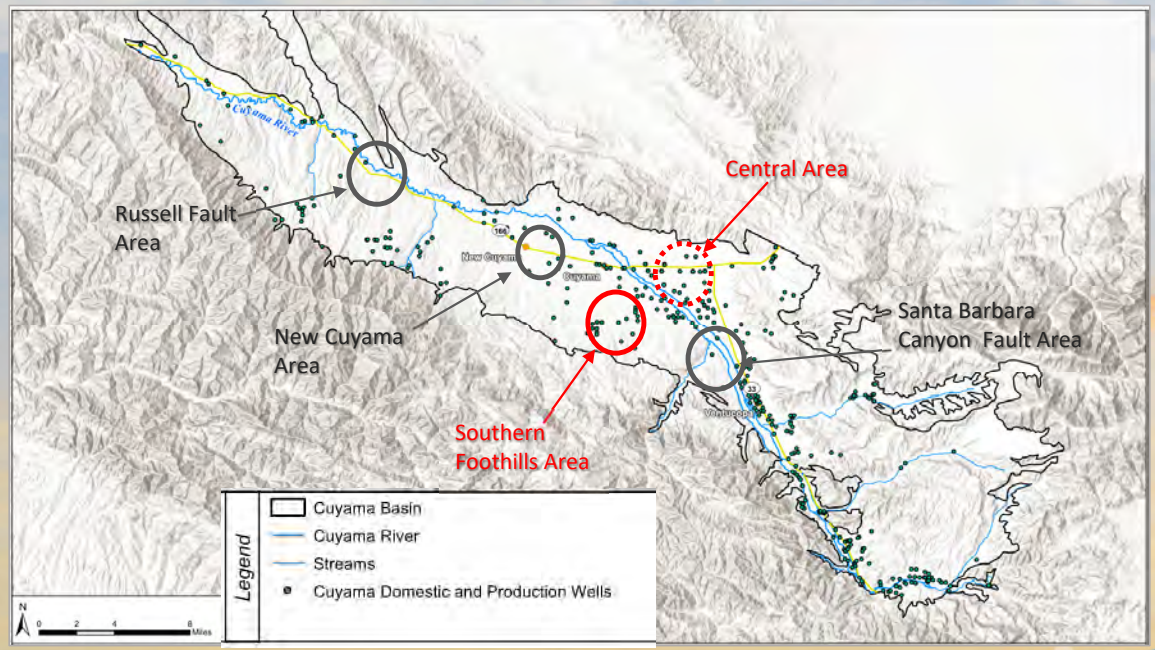
Current Status of Aquifer Testing Program

- Russel Fault Area
  - Received data for previous pump tests (11 wells)
  - Started data analysis
- New Cuyama Area
  - Initial outreach to property owners did not identify viable wells for testing
  - Considered use of CCSD production well; however, detailed testing was conducted recently (2019)
  - Recommend using the results of the CCSD study to support model recalibration for the New Cuyama Area



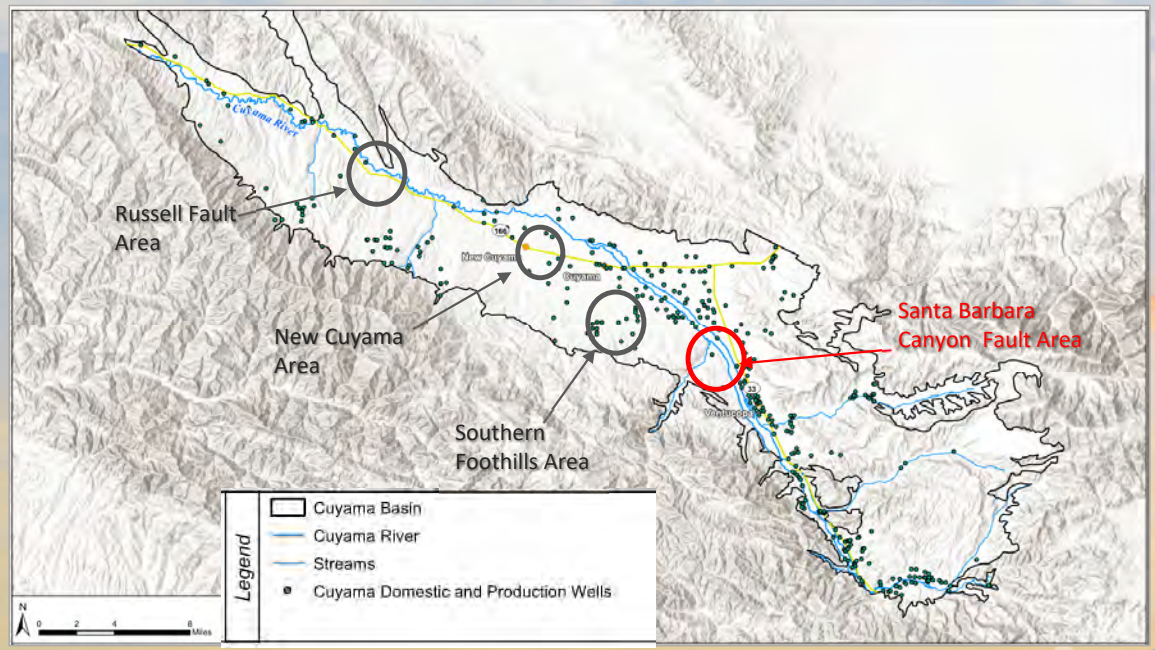
Current Status of Aquifer Testing Program, Cont.

- Southern Foothills Area
  - Most wells in this area are domestic and are not good candidates for testing
  - Initial outreach to property owners did not identify viable wells for testing
  - Conducted a second round of property owner outreach
- Revised focus area to the central portion of the basin to confirm model-calibrated aquifer properties in that area
  - Currently evaluating options for testing in this area



Current Status of Aquifer Testing Program, Cont.

- Santa Barbara Canyon Fault Area
  - A property owner has agreed to support testing
  - Production and monitoring wells
    - Pumping well: approximately 1000 gpm
    - Monitoring wells: two un-equipped irrigation wells located 630 feet and 1500 feet from the production well
    - A TSS well is located farther (4000 feet) from the production well but can also be monitored
    - Extensive records are available for all these wells
  - Property owner can accommodate continuous pumping for 24 to 48 hours
  - Currently developing a testing plan for this location
  - Targeting late March for testing



Model Refinement Tasks

- Update model data to incorporate additional data and to extend to 2021
- Perform model-recalibration
- Develop updated historical and projected water budget estimates
- Evaluation of range of uncertainty of re-calibrated model
- Update Crop evapotranspiration estimates

Model Refinement Outreach and Engagement Schedule

- Technical Forum – 4 meetings
  - **March 1**: Kick-off call to discuss work plan and task sequence and the updated input data; any additional data that may be needed
  - **Mid-late Apr**: Discuss calibration targets (i.e., locations, trends, and periods of greatest water-level residual error) and parameters to be adjusted to reduce residual error
  - **May**: Discuss changes in parameters made by W&C during recalibration and preliminary final model results
  - **Jun**: Discuss final model and any observations or qualifiers to be noted
- Sac & Board Meetings:
  - March, May: progress reports
  - July: present final updated modeling results

TO: Standing Advisory Committee
Agenda Item No. 7i

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 24, 2022

SUBJECT: Update on Monitoring Network Implementation

Issue
Update on Monitoring Network Implementation.

Recommended Motion
None – information only.

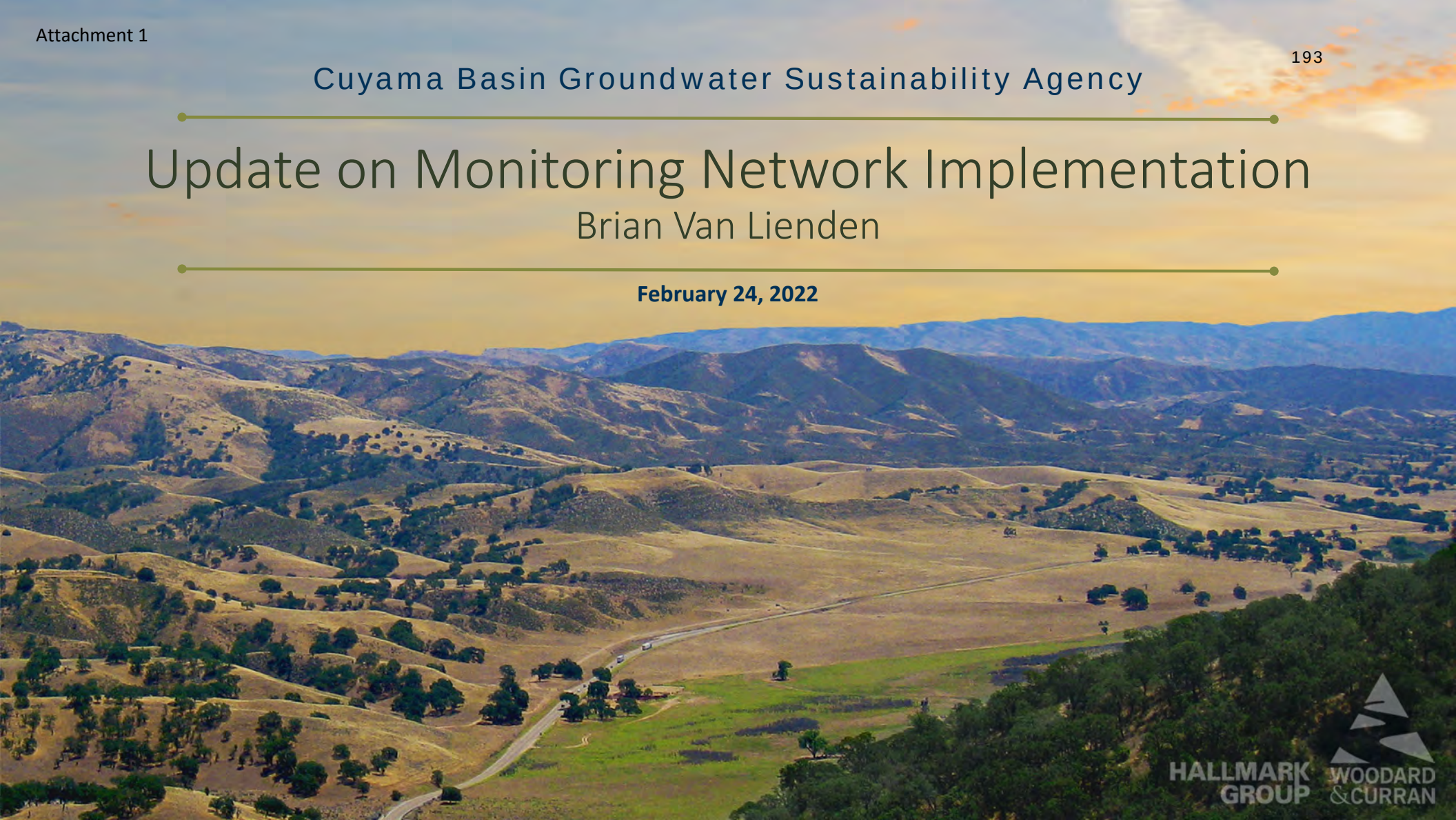
Discussion
An update regarding the monitoring network implementation is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Update on Monitoring Network Implementation

Brian Van Lienden

February 24, 2022



Schedule for Cuyama Basin Monitoring in 2022

- Quarterly groundwater levels monitoring:
  - January, April, July, November
- Water quality testing:
  - Per the GSP, perform a single EC measurement in July
  - As discussed in response letter to DWR, the CBGSA would perform a single measurement and lab testing for nitrates, arsenic and TDS
    - Staff proposed performing this sampling and testing during July

Update on DWR TSS Program

- DWR installed three new multi-completion monitoring wells in the Cuyama Basin in 2021
  - Staff is currently working with DWR to install transducers in these wells

TO: Standing Advisory Committee
Agenda Item No. 7j

FROM: Brian Van Lienden, Woodard & Curran

DATE: February 24, 2022

SUBJECT: Update on Quarterly Groundwater Conditions Report for January 2022

Issue
Update on Quarterly Groundwater Conditions Report for January 2022.

Recommended Motion
None – information only.

Discussion
An update on the groundwater levels representative monitoring network and select hydrographs is provided as Attachment 1 and the detailed January 2022 Groundwater Conditions Report is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

Update on Monthly Groundwater Conditions Report

Brian Van Lienden

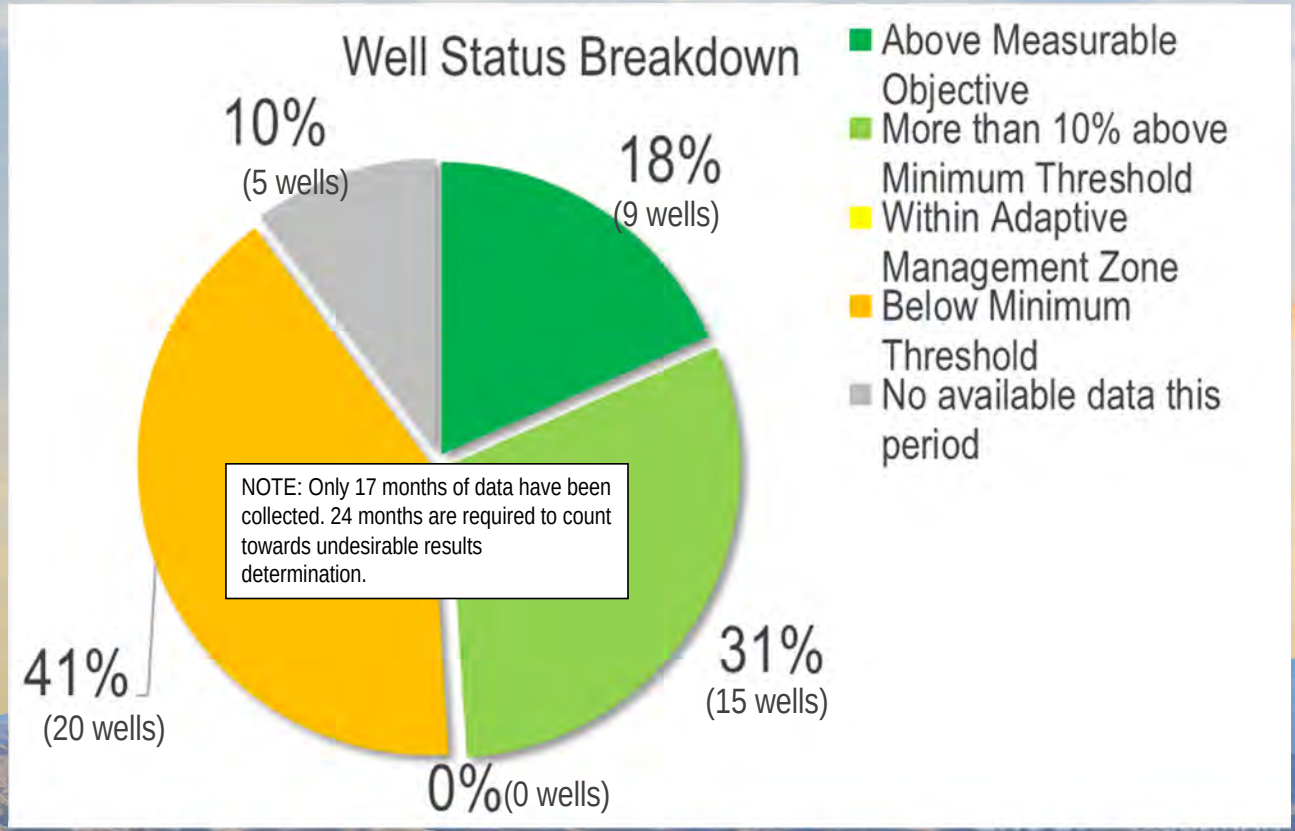
February 24, 2022

Groundwater Levels Monitoring Network – Summary of Current Conditions

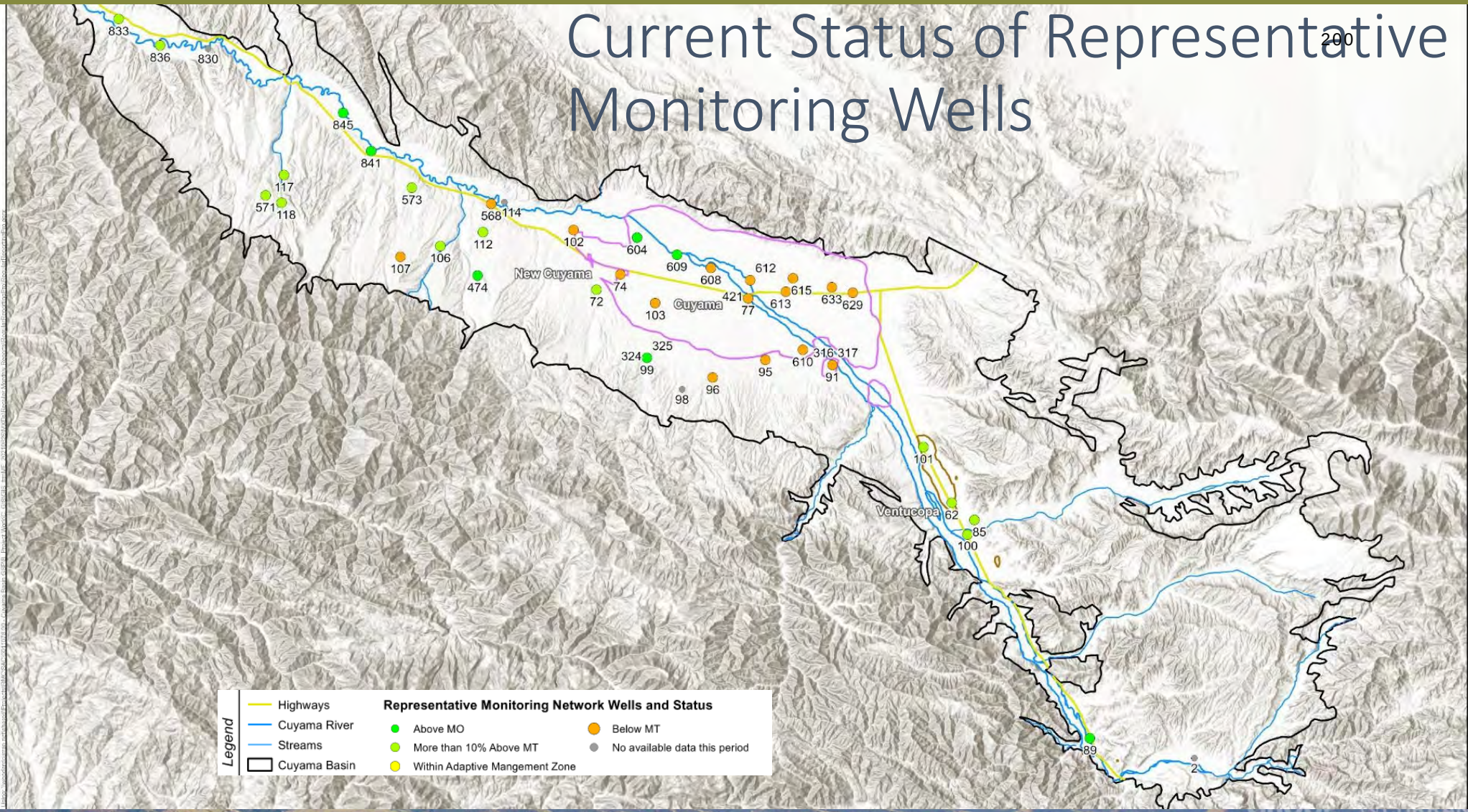
- Monitoring data from July, October and January for representative wells is included in the January 2022 Groundwater Conditions report
- 46 of 49 representative monitoring wells have levels data in at least one out of the previous 6 months
- 20 wells were below the minimum threshold based on latest measurement in June-October

Summary of Groundwater Well Levels as Compared To Sustainability Criteria

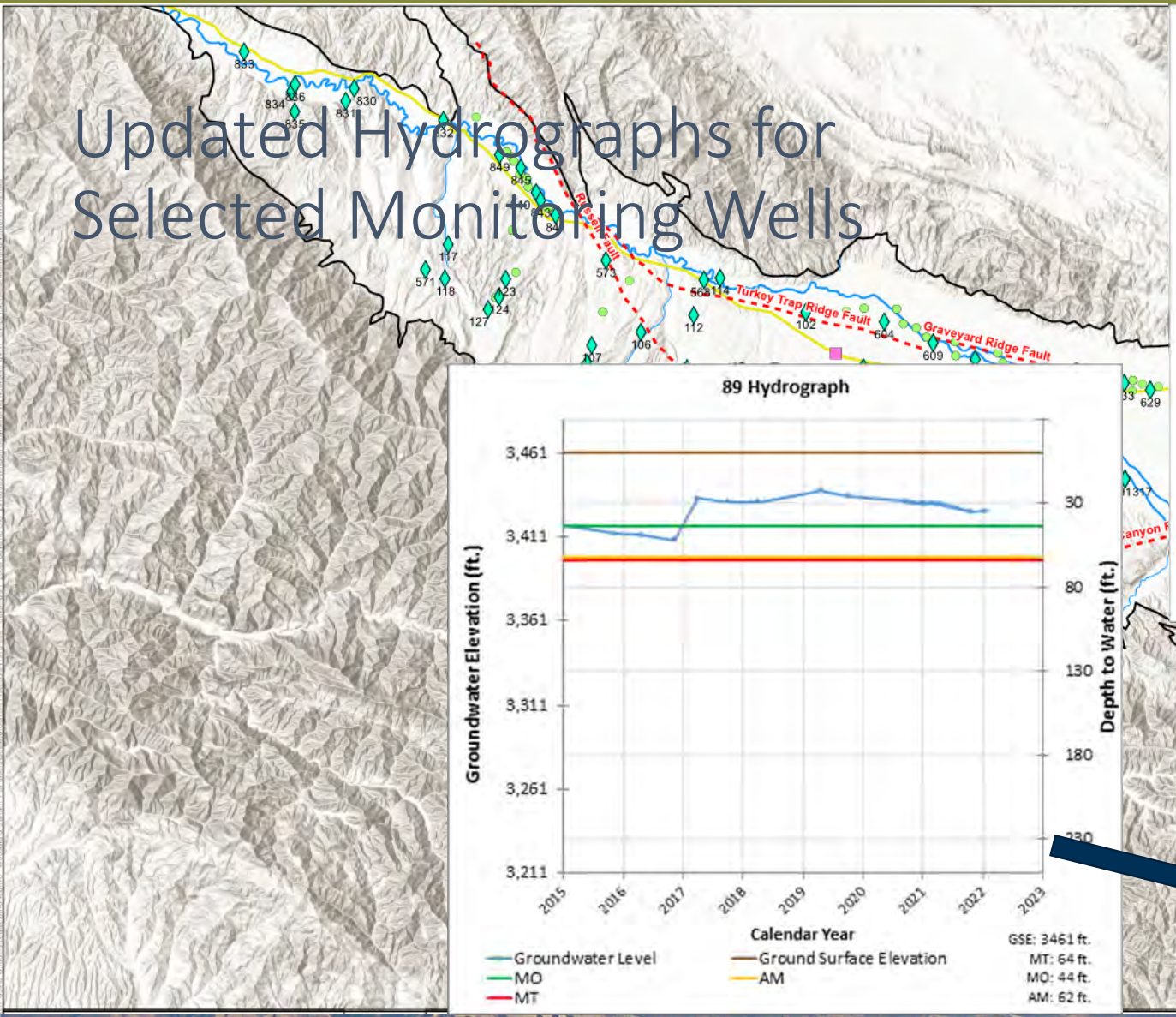
- 20 wells are currently below minimum threshold (MT)
  - 30% of wells (i.e. 15 wells) below MT for 10 months
- Adaptive management ad-hoc committee has been formed to discuss potential options

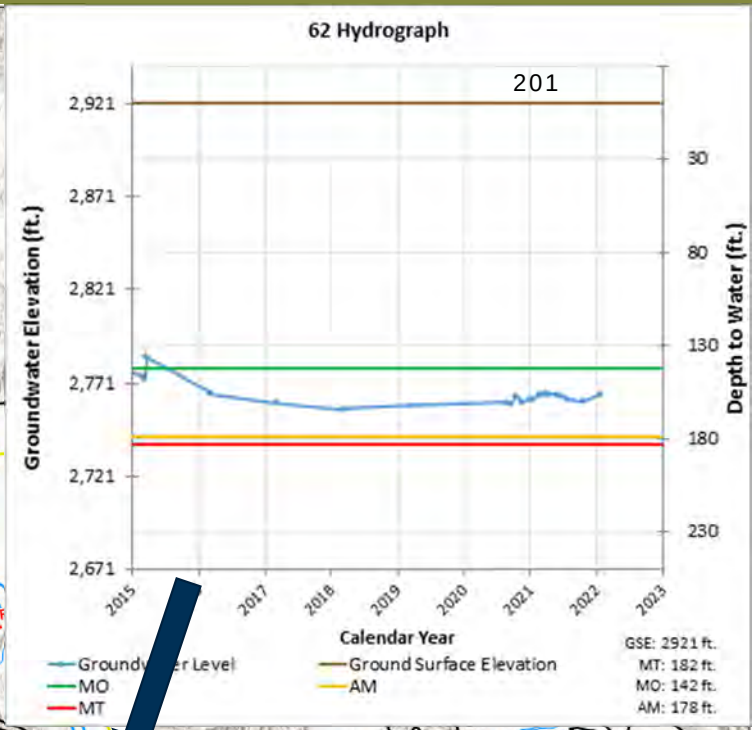


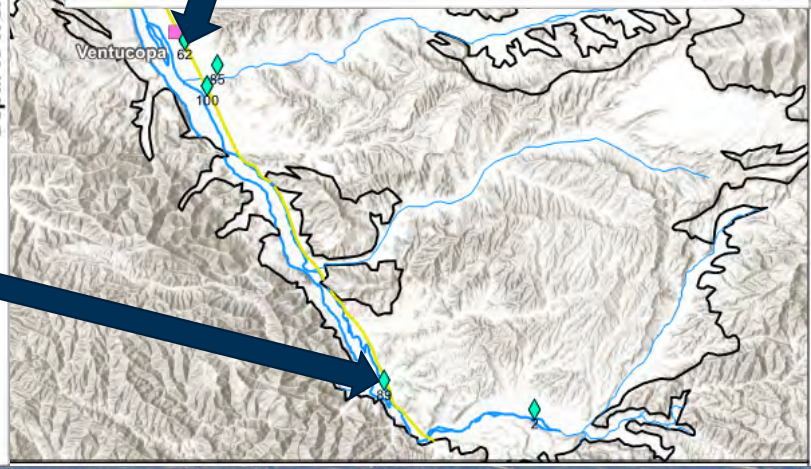
Current Status of Representative Monitoring Wells



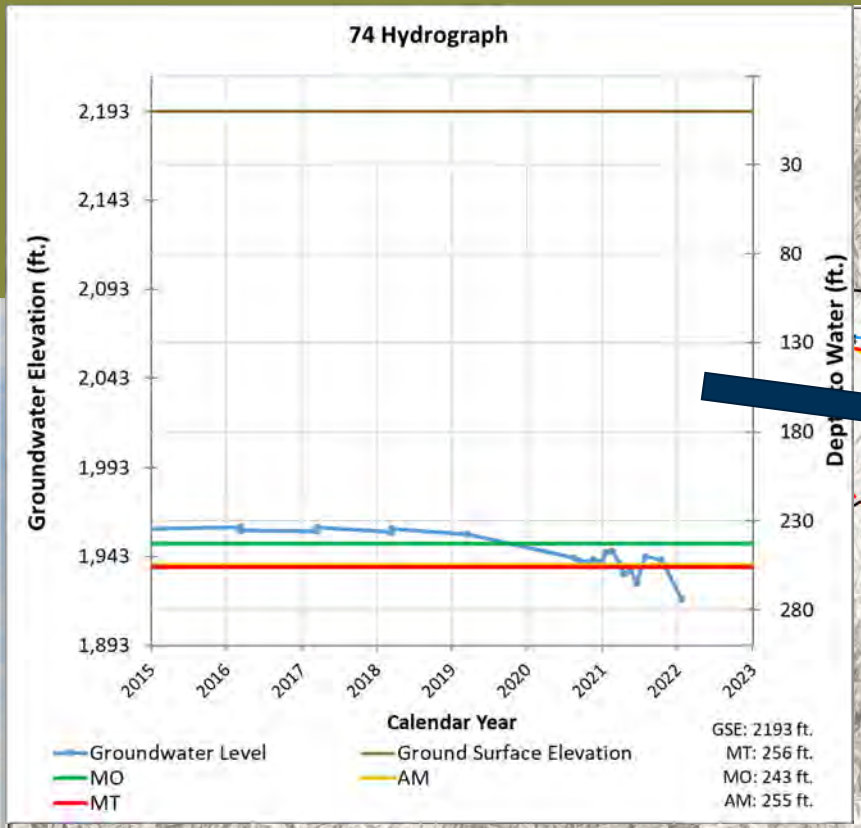
Updated Hydrographs for Selected Monitoring Wells

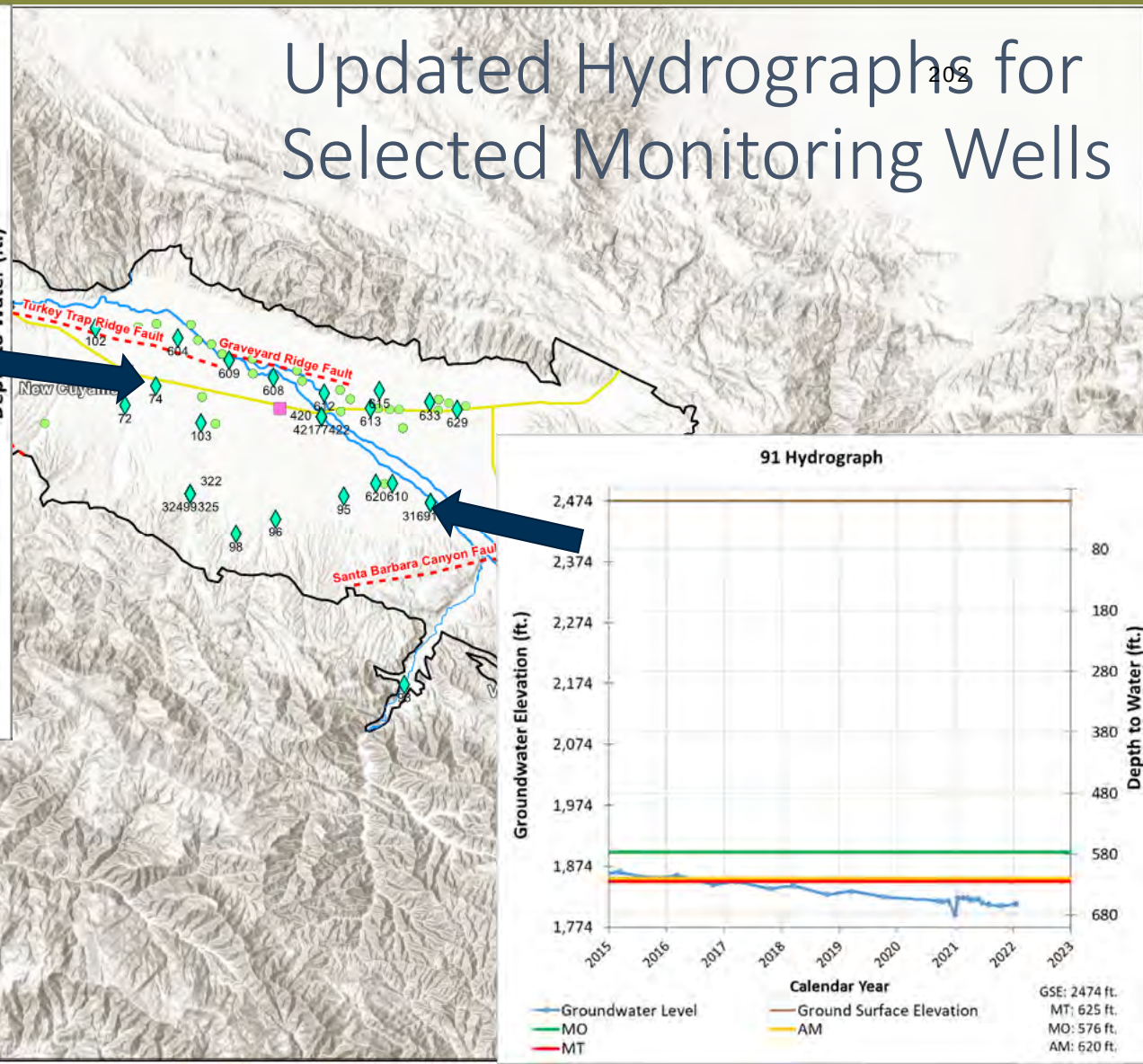




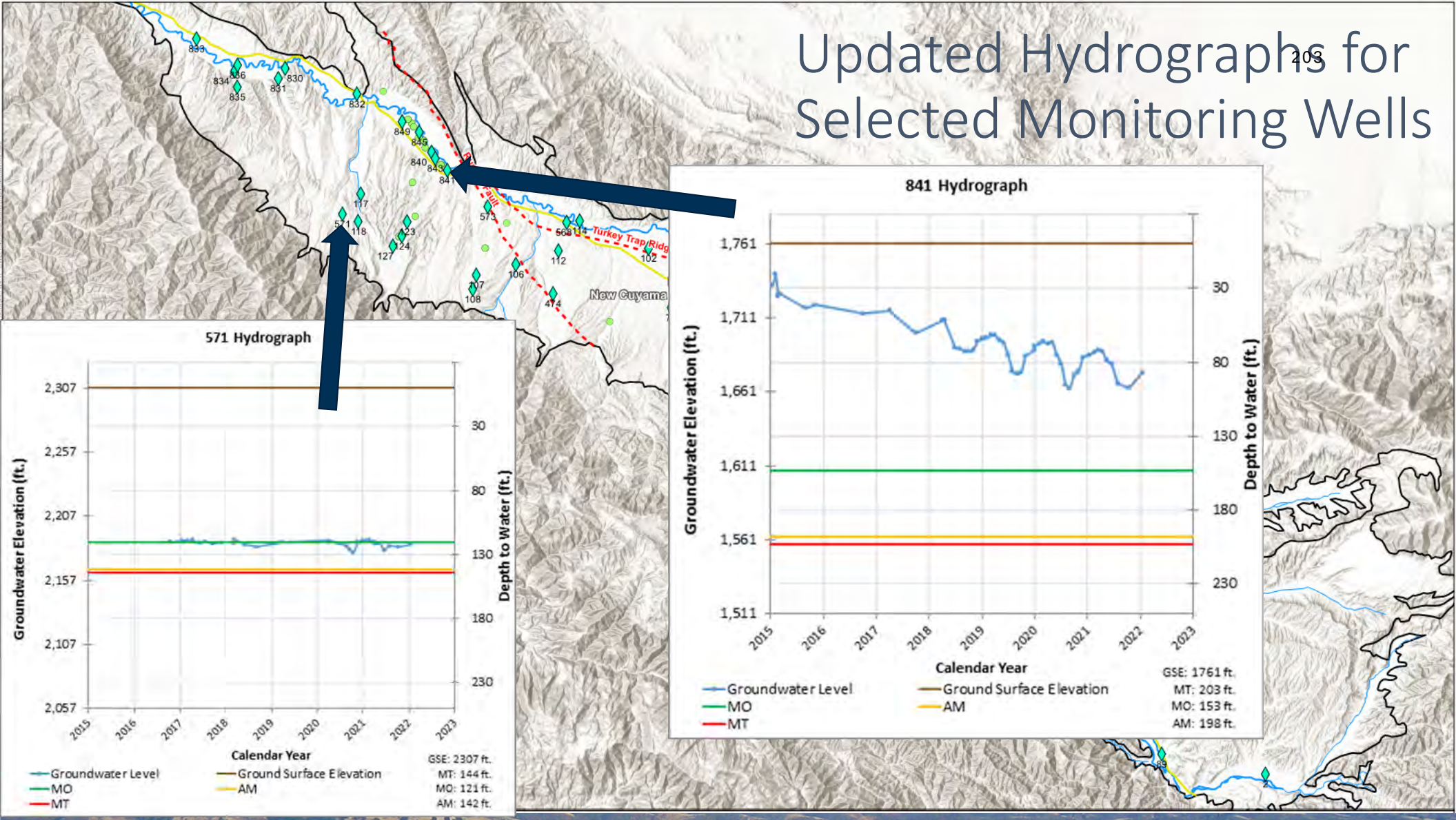


Updated Hydrographs for Selected Monitoring Wells





Updated Hydrographs for Selected Monitoring Wells



GROUNDWATER CONDITIONS REPORT – CUYAMA VALLEY GROUNDWATER BASIN

January 2022

Woodard & Curran

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Sacramento, CA
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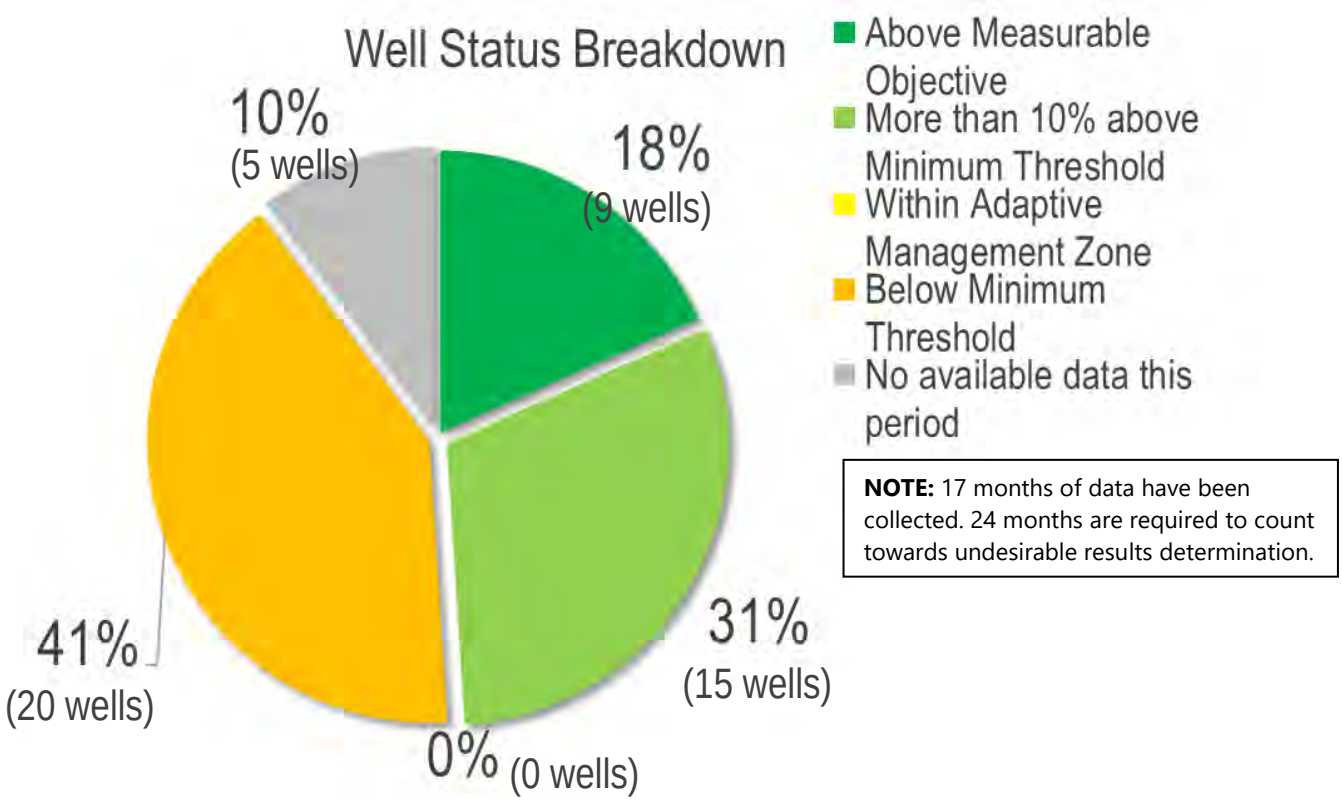
Cuyama Basin Groundwater Sustainability Agency

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.

2. SUMMARY STATISTICS



NOTE: 17 months of data have been collected. 24 months are required to count towards undesirable results determination.

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, 30% of representative monitoring wells (i.e. 15 wells) have been below the minimum threshold for 10 months.

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 have also been 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-21	Oct-21	Jan-22	Last Year		Annual Elevation Change (ft)
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	
72	Central	1999	1994	2022	-	-	-
74	Central	1943	1941	1919	1945	Jan-21	-25
77	Central	1776	1787	1814	1822	Jan-21	-8
91	Central	1811	1809	1812	1822	Jan-21	-9
95	Central	1848	1845	1848	1854	Jan-21	-6
96	Central	2272	2273	2271	2272	Jan-21	-1
98	Central	-	-	-	-	-	-
99	Central	2155	2154	2222	2222	Jan-21	0
102	Central	1711	1668	1622	1776	Jan-21	-154
103	Central	1976	1962	1997	1994	Jan-21	3
112	Central	2054	2054	2054	-	-	-
114	Central	1879	1879	-	-	-	-
316	Central	1813	1809	1812	1820	Jan-21	-9
317	Central	1813	1809	1812	1820	Jan-21	-8
322	Central	2146	2144	2220	2222	Jan-21	-2
324	Central	2169	2165	2218	2220	Jan-21	-3
325	Central	2204	2199	2220	2222	Jan-21	-1
420	Central	1763	1775	1803	1821	Jan-21	-18
421	Central	1776	1779	1800	1819	Jan-21	-19
474	Central	2204	2205	2204	-	-	-

Well	Region	Jul-21	Oct-21	Jan-22	Last Year		Annual Elevation Change (ft)
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	
568	Central	1867	1866	1867	1869	Jan-21	-2
604	Central	-	1644	1674	1654	Jan-21	21
608	Central	-	1762	1779	1790	Jan-21	-11
609	Central	-	-	1789	1807	Jan-21	-18
610	Central	1813	1811	1814	1818	Jan-21	-4
612	Central	1811	-	1795	1801	Jan-21	-5
613	Central	1809	1806	1814	1804	Jan-21	10
615	Central	1817	1814	1814	1821	Jan-21	-6
629	Central	-	1801	1813	1822	Jan-21	-9
633	Central	-	1785	1815	1801	Jan-21	14
62	Eastern	2763	2761	2765	2763	Jan-21	2
85	Eastern	2847	2847	2847	2845	Jan-21	1
100	Eastern	2852	2851	2850	2853	Jan-21	-3
101	Eastern	2617	2631	2635	2634	Jan-21	2
841	Northwestern	1667	1663	1674	1686	Jan-21	-12
845	Northwestern	1640	1642	1646	1650	Jan-21	-4
2	Southeastern	-	-	-	3690	Jan-21	-
89	Southeastern	3428	3426	3427	3431	Jan-21	-4
106	Western	2184	2183	2183	2184	Jan-21	-1
107	Western	2393	2392	2370	2399	Jan-21	-28
117	Western	1946	-	1947	-	-	-

Well	Region	Jul-21	Oct-21	Jan-22	Last Year		Annual Elevation Change (ft)
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/ Year	
118	Western	2217	2211	2211	2214	Jan-21	-3
124	Western	-	-	-	-	-	-
571	Western	2183	2183	2185	2188	Jan-21	-2
573	Western	2013	2013	2013	-	-	-
830	Far-West Northwestern	-	1511	-	1515	Jan-21	-
832	Far-West Northwestern	1592	1591	1590	1593	Jan-21	-3
833	Far-West Northwestern	1429	1431	1432	-	-	-
836	Far-West Northwestern	1448	1448	1448	1450	Jan-21	-2

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)	Month/ Year						
72	Central	149	1/18/2022	169	165	124	790	More than 10% above Minimum Threshold	No
74	Central	273	1/19/2022	256	255	243		Below Minimum Threshold (1 month)	No
77	Central	472	1/18/2022	450	445	400	980	Below Minimum Threshold (17 months)	No
91	Central	662	1/18/2022	625	620	576	980	Below Minimum Threshold (17 months)	No
95	Central	601	1/18/2022	573	570	538	805	Below Minimum Threshold (18 months)	No
96	Central	336	1/18/2022	333	332	325	500	Below Minimum Threshold (14 months)	No
98	Central	-	-	450	449	439	750	No available data this period (no available data in past 9 months)	No
99	Central	291	1/18/2022	311	310	300	750	Above Measurable Objective	No
102	Central	425	1/18/2022	235	231	197		Below Minimum Threshold (13 months)	No
103	Central	292	1/18/2022	290	285	235	1030	Below Minimum Threshold (10 months)	No
112	Central	85	1/19/2022	87	87	85	441	More than 10% above Minimum Threshold	No
114	Central	-	-	47	47	45	58	No available data this period	No
316	Central	662	1/18/2022	623	618	574	830	Below Minimum Threshold (17 months)	No
317	Central	662	1/18/2022	623	618	573	700	Below Minimum Threshold (17 months)	No
322	Central	292	1/18/2022	307	306	298	850	Above Measurable Objective	No

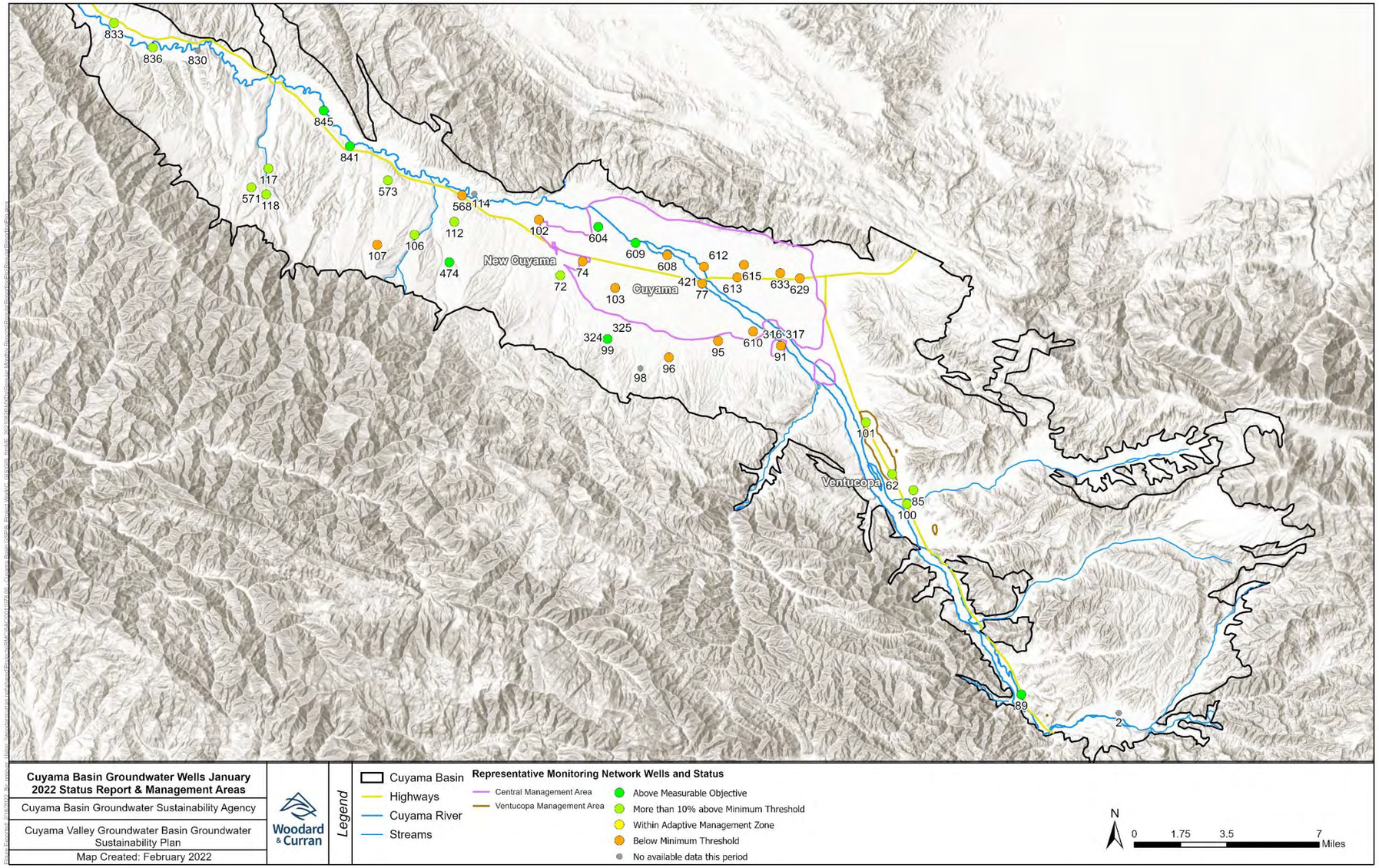
Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Month/ Year						
324	Central	295	1/18/2022	311	310	299	560	Above Measurable Objective	No
325	Central	292	1/18/2022	300	299	292	380	More than 10% above Minimum Threshold	No
420	Central	483	1/18/2022	450	445	400	780	Below Minimum Threshold (17 months)	No
421	Central	486	1/18/2022	446	441	398	620	Below Minimum Threshold (17 months)	No
474	Central	165	1/19/2022	188	186	169	213	Above Measurable Objective	No
568	Central	37	1/19/2022	37	37	36	188	Below Minimum Threshold (8 months)	No
604	Central	450	1/18/2022	526	522	487	924	Above Measurable Objective	No
608	Central	445	1/18/2022	436	433	407	745	Below Minimum Threshold (9 months)	No
609	Central	378	1/18/2022	458	454	421	970	Above Measurable Objective	No
610	Central	628	1/18/2022	621	618	591	780	Below Minimum Threshold (9 months)	No
612	Central	471	1/18/2022	463	461	440	1070	Below Minimum Threshold (1 month)	No
613	Central	516	1/18/2022	503	500	475	830	Below Minimum Threshold (15 months)	No
615	Central	513	1/18/2022	500	497	468	865	Below Minimum Threshold (14 months)	No
629	Central	566	1/18/2022	559	556	527	1000	Below Minimum Threshold (10 months)	No
633	Central	549	1/18/2022	547	542	493	1000	Below Minimum Threshold (10 months)	No
62	Eastern	157	1/18/2022	182	178	142	212	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)	Month/ Year						
85	Eastern	200	1/18/2022	233	225	147	233	More than 10% above Minimum Threshold	No
100	Eastern	153	1/18/2022	181	175	125	284	More than 10% above Minimum Threshold	No
101	Eastern	106	1/18/2022	111	108	81	200	More than 10% above Minimum Threshold	No
841	Northwestern	87	1/19/2022	203	198	153	600	Above Measurable Objective	No
845	Northwestern	66	1/19/2022	203	198	153	380	Above Measurable Objective	No
2	Southeastern	-	-	72	70	55	73	No available data this period (no available data in past 9 months)	No
89	Southeastern	35	1/18/2022	64	62	44	125	Above Measurable Objective	No
106	Western	144	1/19/2022	154	153	141	228	More than 10% above Minimum Threshold	No
107	Western	112	1/19/2022	91	89	72	200	Below Minimum Threshold (1 month)	No
117	Western	151	1/19/2022	160	159	151	212	More than 10% above Minimum Threshold	No
118	Western	59	1/19/2022	124	117	57	500	More than 10% above Minimum Threshold	No
124	Western	-	-	73	71	57	161	No available data this period (no available data in past 9 months)	No
571	Western	121	1/19/2022	144	142	121	280	More than 10% above Minimum Threshold	No
573	Western	71	1/19/2022	118	113	68	404	More than 10% above Minimum Threshold	No
830	Far-West Northwestern	-	-	59	59	56	77	No available data this period (below MT in Oct 2021)	No
832	Far-West Northwestern	40	1/19/2022	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)	Month/ Year						
833	Far-West Northwestern	26	1/19/2022	96	89	24	504	More than 10% above Minimum Threshold	No
836	Far-West Northwestern	38	1/19/2022	79	75	36	325	More than 10% above Minimum Threshold	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



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

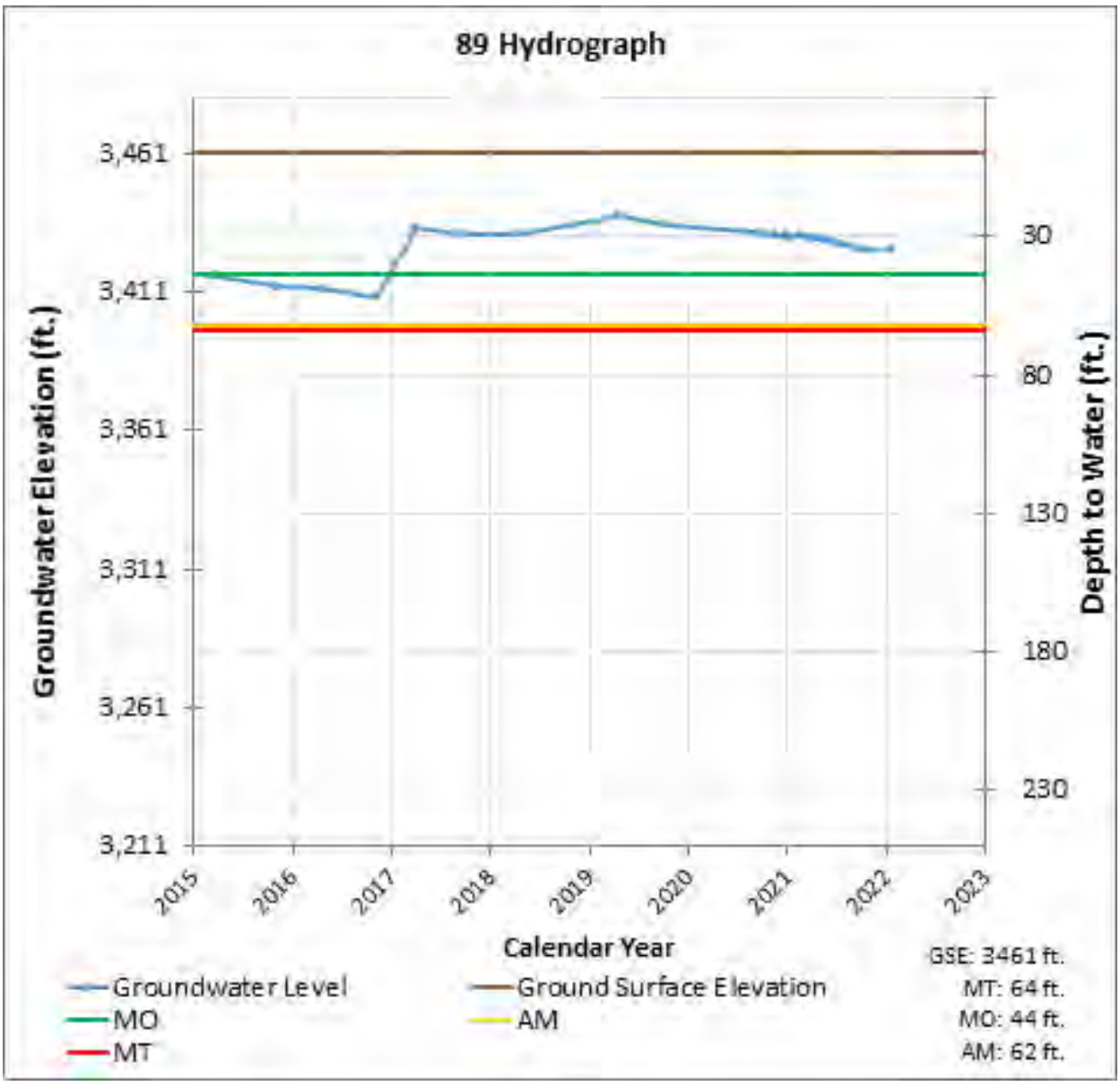


Figure 3: Eastern Region – Well 62

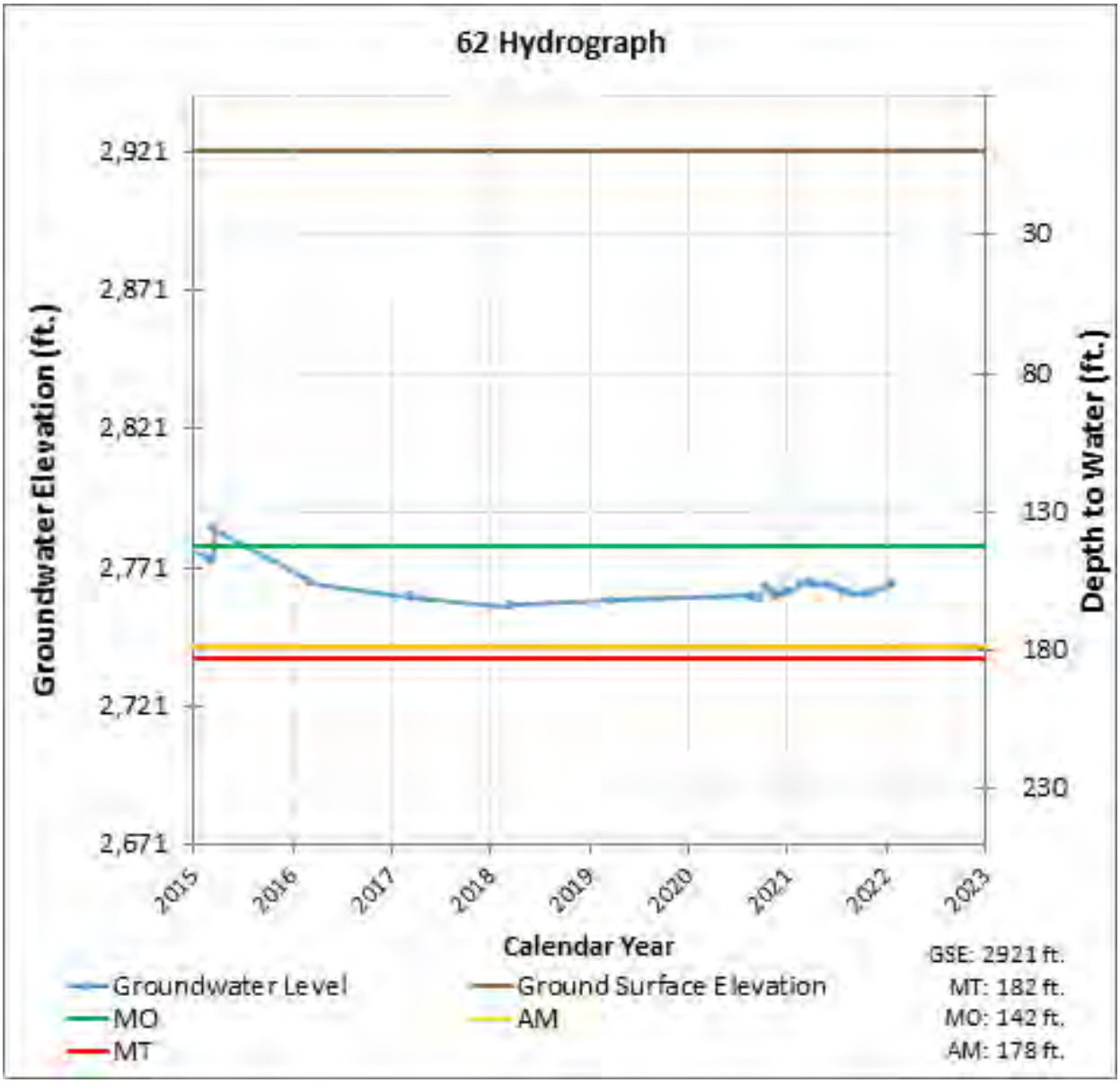


Figure 4: Central Region – Well 91

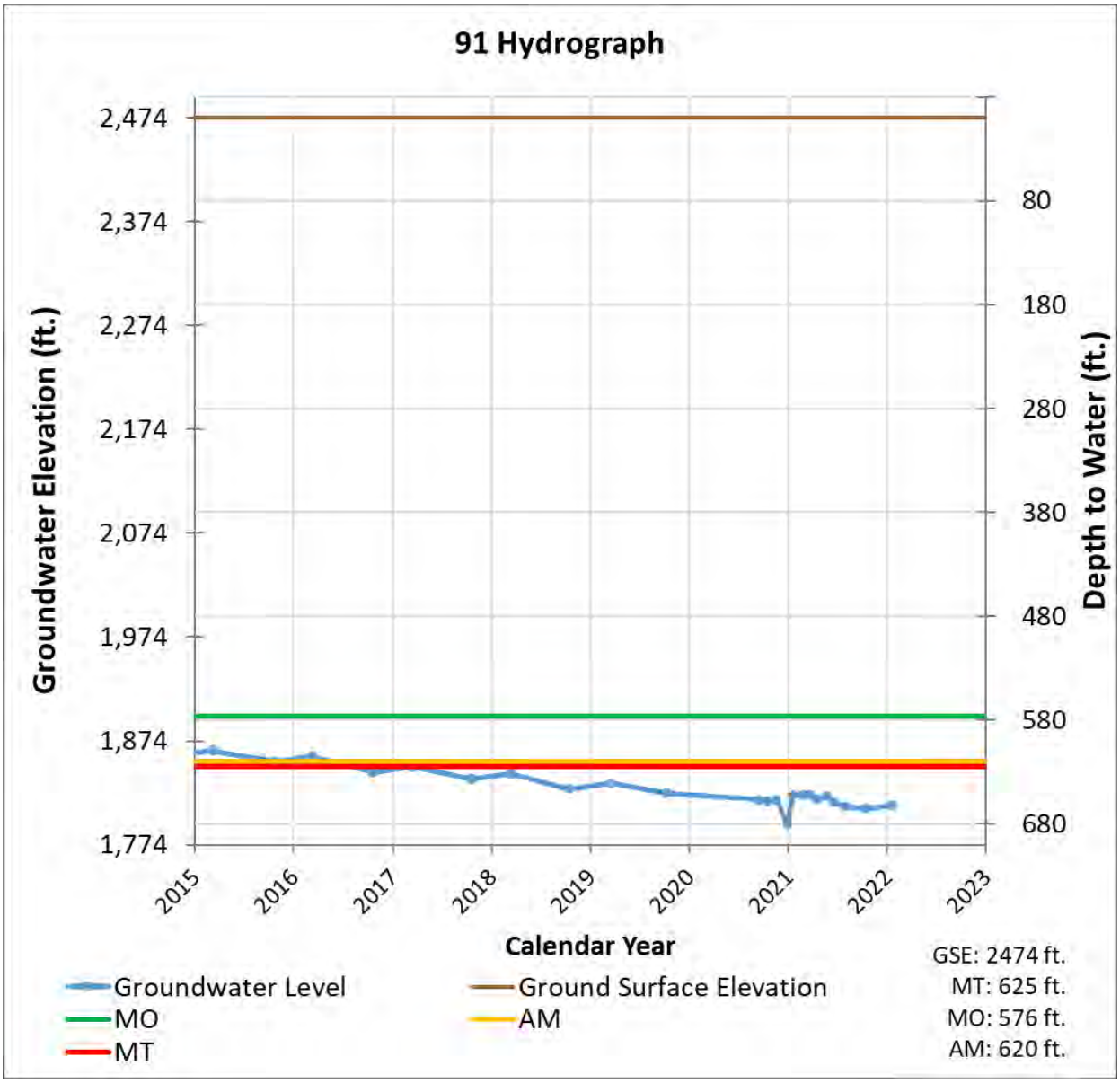


Figure 5: Central Region – Well 74

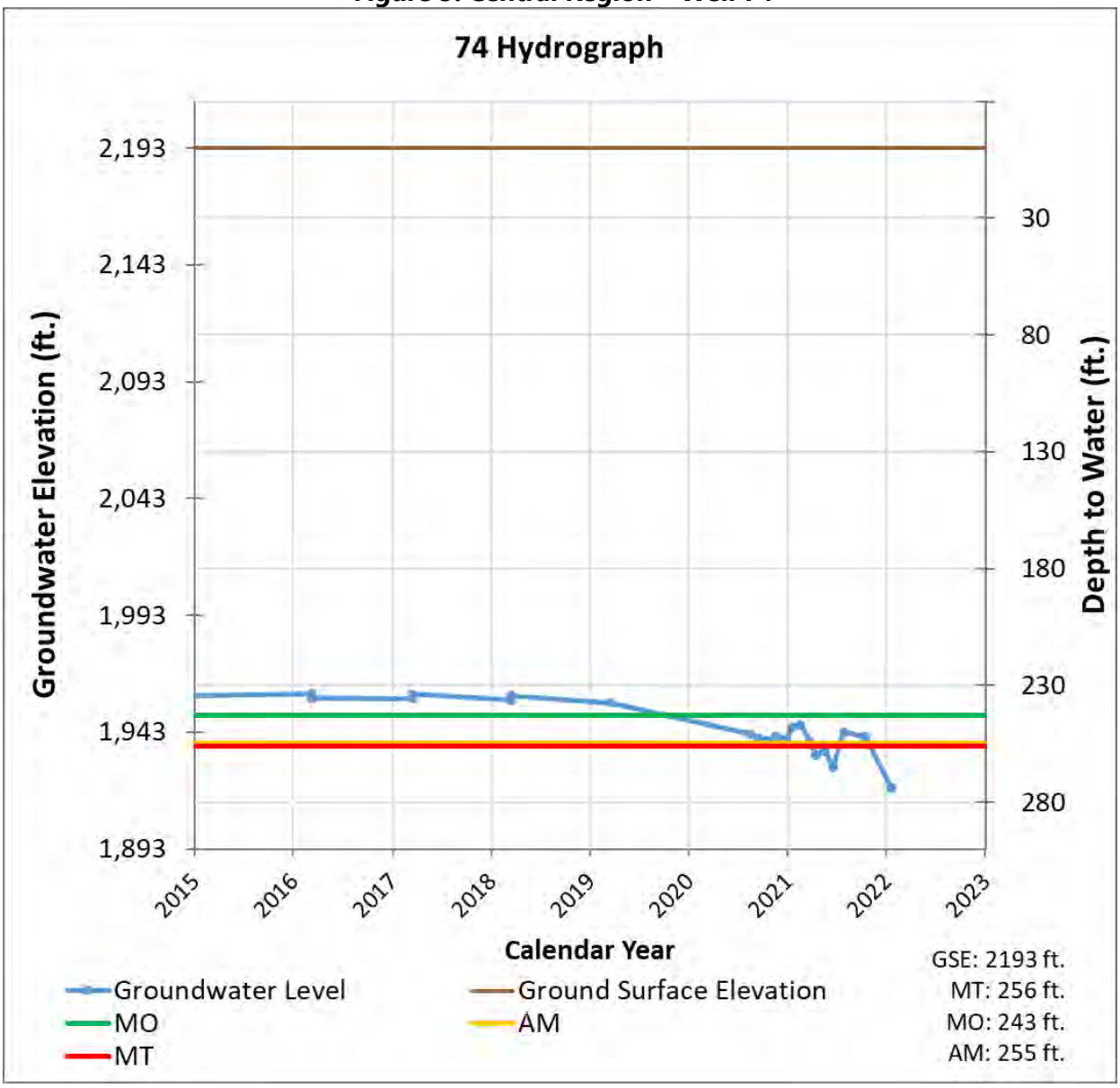


Figure 6: Western Region – Well 571

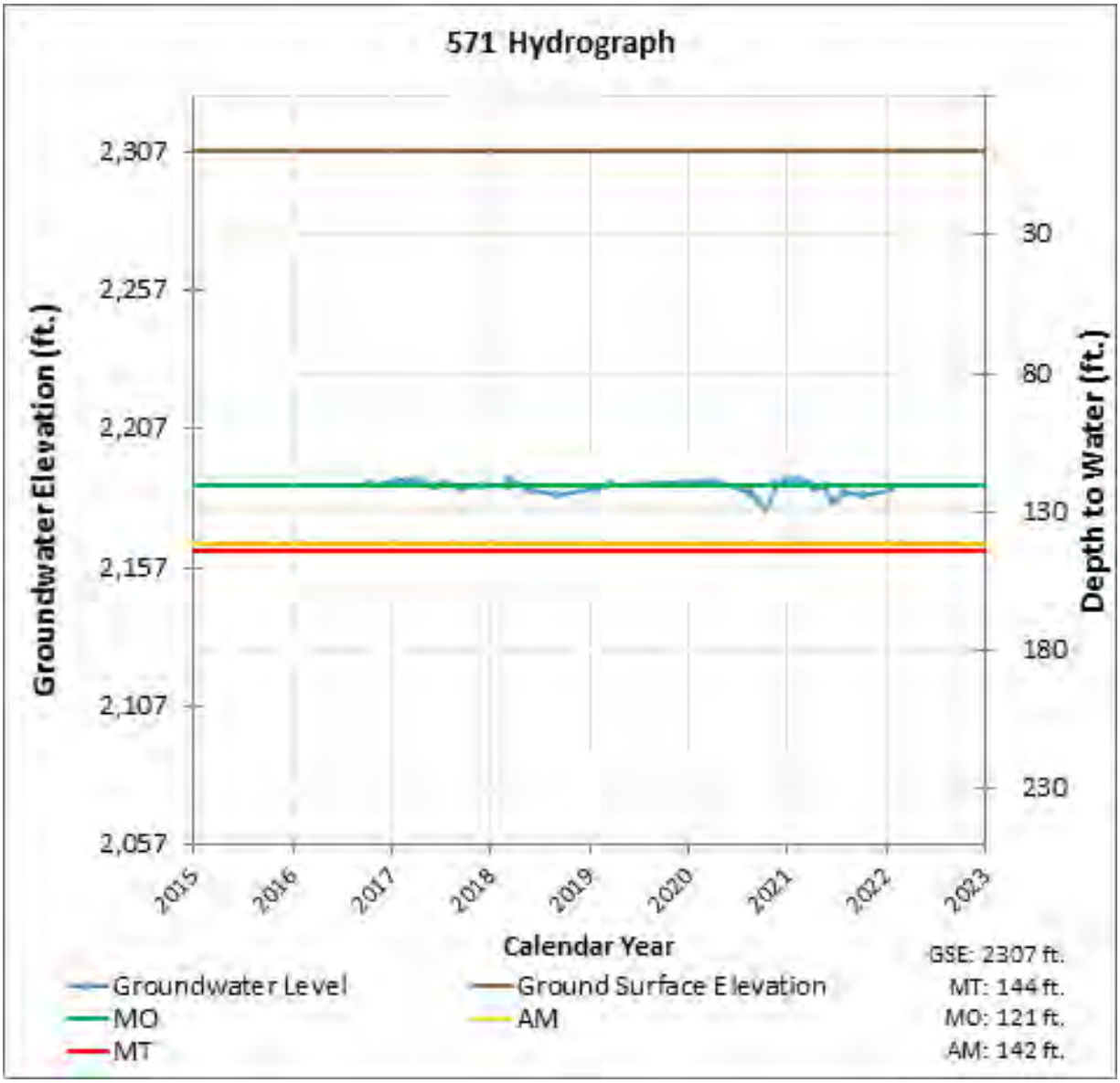
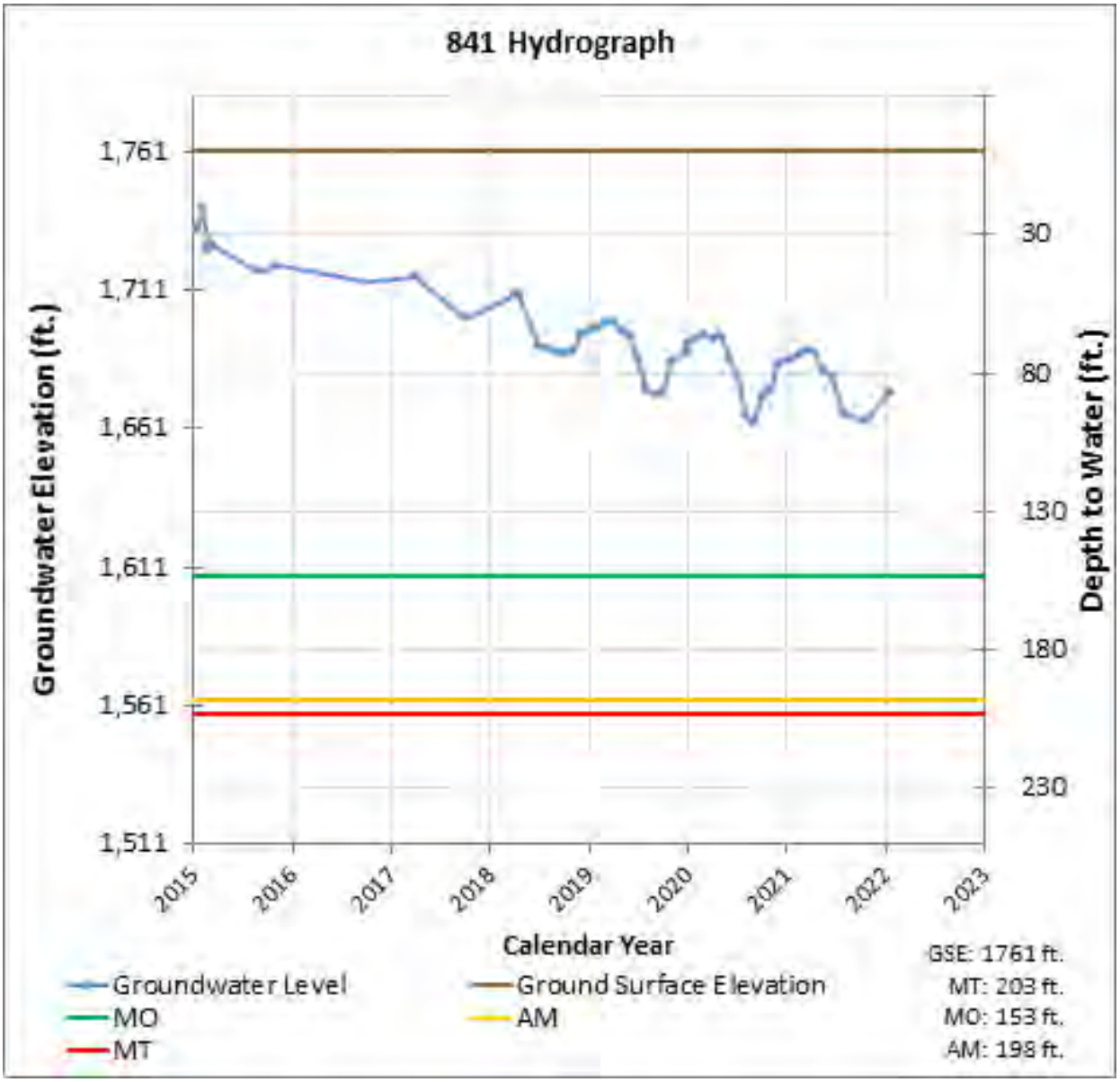


Figure 7: Northwestern Region – Well 841



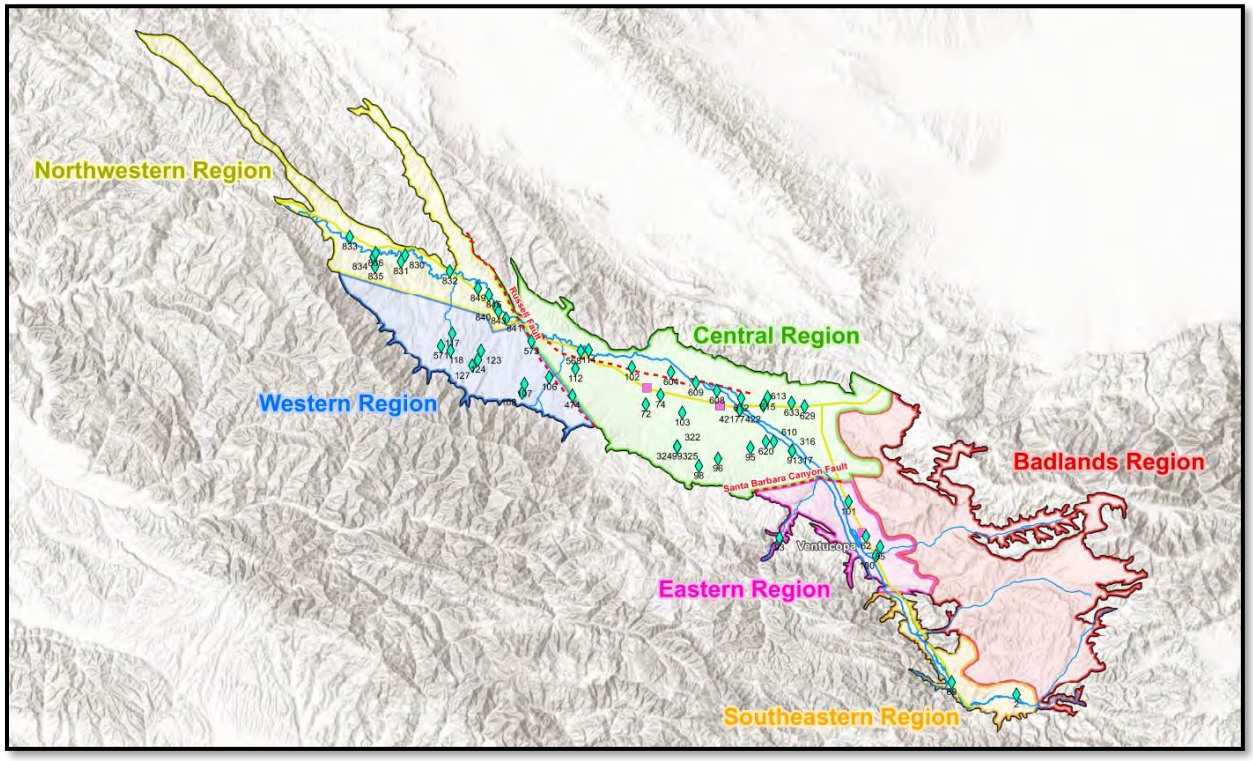


Figure 8: Threshold Regions in the Cuyama Groundwater Basin

5. MONITORING NETWORK UPDATES

As shown in the Summary Statistics Section, there are 5 wells without current measurements. These "no measurement codes" can have different causes as described below.

- Access agreements have not yet been established with the landowner, access has not been granted yet, or no access at time of measurement:
    - Wells 2, 98, 124
- Measurement was not possible at the time when the field technician went to take measurements:
    - Wells 114, 830

Woodard & Curran

woodardcurran.com

TO: Standing Advisory Committee
Agenda Item No. 8c

FROM: Jim Beck, Executive Director

DATE: February 24, 2022

SUBJECT: Board of Directors Agenda Review

Issue
Board of Directors Agenda Review.

Recommended Motion
None – information only.

Discussion
The Cuyama Basin Groundwater Sustainability Agency Board of Directors agenda for the March 2, 2022, Board of Directors meeting is provided as Attachment 1 for review.

CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

BOARD OF DIRECTORS MEETING

Board of Directors

Derek Yurosek Chair, Cuyama Basin Water District
Lynn Compton Vice Chair, County of San Luis Obispo
Das Williams Santa Barbara County Water Agency
Cory Bantilan Santa Barbara County Water Agency
Glenn Shephard County of Ventura
Zack Scrivner County of Kern
Paul Chounet Cuyama Community Services District
Byron Albano Cuyama Basin Water District
Lorena Stoller Cuyama Basin Water District
Matt Vickery Cuyama Basin Water District
Jane Wooster Cuyama Basin Water District

AGENDA

MARCH 2, 2022

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Board of Directors to be held on Wednesday, March 2, 2022, at 4:00 PM. Participate via computer at: https://global.gotomeeting.com/join/203153453, or telephonically at (646) 749-3122, code: 203-153-453#.

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Adopt Resolution No. 21-112 Authorizing Use of Teleconferencing for Public Meetings Under AB 361
5. Standing Advisory Committee Meeting Report

CONSENT AGENDA

6. Approval of Minutes – January 5, 2022
7. Approval of Payment of Bills for December 2021 and January 2022
8. Approval of Financial Report for December 2021 and January 2022

ACTION ITEMS

9. Review of Official DWR GSP Determination and Direction for Addressing DWR-Identified Issues by July 20, 2022
10. Set Date for Public Hearing on GSP Amendment – *Verbal*
11. Direction on Historic Pumping Analysis in the Central Management Area
12. Direction on Central Management Area Policies
13. Approval of Water Year 2021 Annual Report
14. Direction on Adaptive Management Actions
15. Update on Long-Term Groundwater Extraction Fee Equity – *Verbal*

REPORT ITEMS

16. Administrative Updates
    a) Report of the Executive Director
    b) Report of the General Counsel
    c) Report on Fiscal Year 2022-2023 Budget Components
    d) Update on Meter Requirement Compliance
17. Technical Updates
    a) Update on Groundwater Sustainability Plan Activities
    b) Update on Model Progress
    c) Update on Monitoring Network Implementation
    d) Update on Quarterly Groundwater Conditions Report for January 2022
18. Report of the Ad Hoc Committee
19. Directors' Forum
20. Public comment for Items Not on the Agenda
21. Correspondence
22. Adjourn