



CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY STANDING ADVISORY COMMITTEE

Committee Members

Brenton Kelly (Chair)	Jake Furstenfeld	<i>Vacant</i>
Brad DeBranch (Vice Chair)	Joe Haslett	<i>Vacant</i>
Louise Draucker	Roberta Jaffe	<i>Vacant</i>

AGENDA

APRIL 29, 2021

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee to be held on Thursday, April 29, 2021 at 5:00 PM. ***Due to COVID-19 pandemic restrictions and resulting suspension of certain components of the Brown Act per Executive Order Nos. N-25-20 and N-29-20, this meeting will be a remote-only meeting.*** To hear the session live call (646) 749-3122, 203-153-453 or logon to <https://global.gotomeeting.com/join/203153453> to view meeting materials.

The order in which agenda items are discussed may be changed to accommodate scheduling or other needs of the Committee, the public or meeting participants. Public comments should be emailed to Taylor Blakslee at tblakslee@hgcpm.com by close of business on Wednesday, April 28, 2021 to assist in facilitating this remote meeting, but they may also be provided at the meeting.

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Update on SAC Membership
 - a. Appoint a SAC Member
5. Approval of Minutes
6. Groundwater Sustainability Plan
 - a. Update on Groundwater Sustainability Plan Activities
 - b. Approval of Meter Guidance and Reporting Instructions
 - c. Update on Monitoring Network Implementation
 - d. Update on Monthly Groundwater Conditions Report
 - e. Update on Annual Groundwater Quality Report
7. Groundwater Sustainability Agency
 - a. Report of the Executive Director
 - b. Board of Directors Agenda Review
 - c. Report of the General Counsel
8. Items for Upcoming Sessions

9. Committee Forum

- a. Update on Cannabis Industry Activities

10. 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.

11. Correspondence

12. Adjourn



TO: Standing Advisory Committee
Agenda Item No. 4a

FROM: Taylor Blakslee / Brenton Kelly

DATE: April 29, 2021

SUBJECT: Appoint a SAC Member

Issue

Consider appointing a SAC Member.

Recommended Motion

Appoint Jean Gaillard to the Standing Advisory Committee.

Discussion

Due to several resignations from the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC), SAC Chair Brenton Kelly has continued efforts to identify candidates to serve on the SAC. Chair Kelly reported at the February 25, 2021 SAC meeting that local resident Jean Gaillard was interested in serving on the SAC and his application is provided as Attachment 1.

**APPLICATION FOR MEMBERSHIP TO THE CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY'S
STANDING ADVISORY COMMITTEE**

What is your relationship to the Cuyama Basin? (Check all that apply)

- Full-time resident Representative of a landowner Part-time resident
 Work in the Cuyama Basin Landowner Other: Business owner

In which geographic portion of the basin do you live/work/represent?

I live, work and represent the Central Basin of the Cuyama Valley.

Which county (or counties) has jurisdiction over your property? (Check all that apply)

- Santa Barbara San Luis Obispo Kern Ventura

Why are you interested in serving on the Standing Advisory Committee for the Cuyama Basin GSA?

I'm concerned about increasing water issues in the Central Basin. So far, the Central Basin is not represented in the SAC- meeting.

What unique experience or expertise will you contribute if appointed to the Standing Advisory Committee for the Cuyama Basin GSA? Explain any technical knowledge you have regarding water in the Cuyama Basin.

I'm a small-scale rancher/farmer. The ranch is classified as diminimus water user and is situated south of the CB Management area. The ground water level is below MT. Our well #96 is an observation well with recorded data since 1980. I have followed water issues in the CV since 2008 when I was appointed chairman of the CVPAC (Planning & Advisory Committee) under district supervisor Joe Centano. I tracked the USGS study.

The Cuyama Basin GSA Groundwater Sustainability Plan (GSP) has been submitted to the California Department of Water Resources and is currently being implemented in the basin. Please describe your knowledge of the GSP and your participation in public meetings related to the GSP to date.

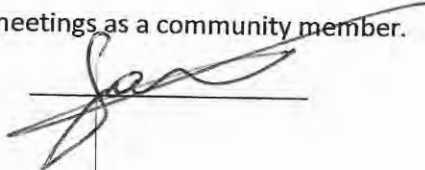
I participated actively in all the public workshops of the GSA/GSP. I'm tracking all well data, consult the SAC reports and frequently forward my questions to the CV Watershed Steward.

If you are appointed to the Standing Advisory Committee for the Cuyama Basin GSA, it will require you to be available for at least one (1) monthly meeting and to be prepared for each meeting by reading the necessary documents. The total time commitment may range from 5 to 30 hours or more per month with no compensation. Are you aware of this and prepared to take on this commitment?

YES. I prepared and participated in the last two SAC-meetings as a community member.

Name: JEAN GAILLARD

Signature:



Date: 3/1/2021

Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee Meeting

February 25, 2021

Draft Meetings Minutes

PRESENT:

Kelly, Brenton – Chair
DeBranch, Brad – Vice Chair
Draucker, Louise
Furstenfeld, Jake
Haslett, Joe
Jaffe, Roberta
Beck, Jim – Executive Director
Dominguez, Alex – Legal Counsel

ABSENT:

None

1. Call to Order

Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) Chair Brenton Kelly called the meeting to order at 5:03 p.m. and Hallmark Group Project Manager Taylor Blakslee provided direction on the meeting protocols to facilitate a remote-only 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. Annual Appointment of Committee Members

Mr. Blakslee provided a background of the establishment of the SAC Guidelines in May 2018 that established 3-year Committee terms following the submittal of the Groundwater Sustainability Plan by January 31, 2020. He noted that the SAC established staggered, 1-, 2- and 3-year terms and Committee Member Louise Draucker was up for reappointment.

Chair Kelly let the SAC know he had spoke with Committee Member Draucker and she was willing to continue serving.

MOTION

Committee Member DeBranch made a motion to extend Committee Member Draucker's term for another 3 years. The motion was seconded by Committee Member Haslett, a roll call vote was made, and the motion passed.

AYES: DeBranch, Draucker, Haslett, Furstenfeld, Jaffe, Kelly

NOES: None
 ABSTAIN: None
 ABSENT: None

5. Election of Officers

Chair Kelly announced the need to appoint Chair and Vice Chair positions and let the SAC know he was willing to continue serving as the Chair.

MOTION

Committee Member Furstenfeld made a motion to appoint Committee Member Kelly as Chair. The motion was seconded by Committee Member Jaffe, a roll call vote was made, and the motion passed.

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

Chair Kelly asked if Committee Member DeBranch was willing to continue serving as Vice Chair and Committee Member DeBranch said he was unless another Committee Member wanted an opportunity to serve as Vice Chair.

MOTION

Committee Member Furstenfeld made a motion to appoint Committee Member DeBranch as Vice Chair. The motion was seconded by Committee Member Haslett, a roll call vote was made, and the motion passed.

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

6. Update on SAC Membership

Chair Kelly reported that he has been in talks with Cuyama resident Jean Gaillard and is likely willing to serve on the SAC. He said we need to get a SAC application to Mr. Gaillard ahead of the next SAC meeting. Mr. Gaillard said he is very happy to join the SAC because of the critically important issues the SAC is advising on in the basin.

7. Update on SAC Role Ad hoc

Chair Kelly reported that the SAC Role ad hoc met on January 21, 2021 to discuss ways to coordinate and ensure proper support and guidance is being provided to the SAC. He reported it was a good meeting, and while there were no specific actions, it was a helpful meeting. He let the SAC know the Board ad hoc expressed appreciation for all the hard work the SAC has been doing.

8. Approval of Minutes

Chair Kelly opened the floor for comments on the January 7, 2021 CBGSA SAC meeting minutes. No changes were suggested.

MOTION

Committee Member DeBranch made a motion to adopt the January 7, 2021 CBGSA SAC meeting minutes. The motion was seconded by Committee Member Kelly, a roll call vote was made, and the motion passed.

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

9. Groundwater Sustainability Plan**a. Update on Groundwater Sustainability Plan Activities**

Woodard & Curran's Technical Project Manager Brian Van Lienden provided an update on the Groundwater Sustainability Plan (GSP) activities and the overall project schedule which are included in the SAC packet.

b. Approval of the 2021 Annual Report

Mr. Van Lienden provided an overview of the 2021 Annual Report which is included in the SAC packet. He commented that land use, precipitation and evapotranspiration data were updated in the model for the 2020 update. He noted that the fall 2020 groundwater contours provide much better data since there are more wells being monitored from the previous year.

Executive Director Jim Beck suggested including the previous year change in groundwater level map in the 2022 annual report.

Committee Member Jaffe asked if key landmarks could be included to the various maps (streams, canyons, and Foothill and Bell Road). Staff said they would look into accommodating this request.

Committee Member Jaffe thanked the team for putting together the 2021 Annual Report, but said it was disconcerting to see the same trend of water depletion. She noted that the Annual Report (specifically table 2-2) does not consistently reference the far-northwestern region and asked staff to consider including this reference where appropriate. Mr. Van Lienden said we can consider making this change.

She also asked if staff was concerned with subsidence, but staff reported that subsidence is primarily an issue under SGMA as it impacts structures and infrastructure; however, even though there is minimal infrastructure in Cuyama, the reported subsidence is estimated to be minimal.

MOTION

Committee Member Jaffe made a motion to adopt the 2021 Annual Report. The motion was seconded by Committee Member DeBranch, a roll call vote was made, and the motion passed.

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

c. Adopt Model Refinement Technical Memo

Mr. Van Lienden provided an update on the model refinement plan which is summarized in the SAC packet. He reported that he grouped items in the memo by recommendation of completion if grant funding is received or not.

Committee Member Jaffe said she appreciated seeing the information broken into two sections but is concerned with high cost of the items and asked about the costs for piezometers. Mr. Beck reminded the SAC that staff is looking for a general approval of the Technical memo and the financial considerations are the purview of the Board and we need to stay on point in our review of the memo.

California Department of Fish and Wildlife's Steve Slack commented that the "CDFW appreciates the piezometers to evaluate the GDE's and Interconnected surface water. Understanding these two factors is critical in achieving sustainability."

Chair Kelly asked if the Committee was willing to make a recommendation on the memo and no recommendation was made.

d. Options for CBGSA Administration of New Development and Changes in Water Use

Mr. Beck reported that we received a presentation from cannabis industry representative Amy Steinfeld and their plans to mitigate their proposed development in the Cuyama Basin. He reported that the Board requested staff discuss the GSA's role in administration of new developed land and potential changes of water in current development. He let the SAC know legal counsel Alex Dominguez will present a legal framework for what the GSA's authority is on this matter.

Key points from his presentation included:

- Nothing in SGMA or a GSP adopted under SGMA supersedes a city or county's land use authority.
- County planning agencies must consider GSPs and anticipated effects of proposed actions during general plan development.
- SGMA requires that a GSA consider, among other things, the interests of local land use planning agencies.
- SGMA provides GSAs with broad powers including establishing groundwater allocations, impose spacing requirements on new groundwater well construction and regulate, limit or suspend extractions from individual groundwater wells, and construction or enlargement of new groundwater wells.

Committee Member Jaffe thanked staff for putting this material together and asked Mr. Dominguez to expand on the GSA's ability to regulate, limit or suspend well permits. Mr. Dominguez said the authority to approve permits is with the counties but the collaboration with the GSA and County has not been defined yet.

Mr. Gaillard says temporary transfers sounds like a water offset and asked if this will be a contradiction of the hydrogeologic model. Mr. Beck said potential transfers would have to be approved by the GSA and many GSAs in the State are wrestling with this issue, if they should allow transfer and what the technical conditions are to allow this.

e. Update on Monitoring Network Implementation

Mr. Van Lienden provided an update on monitoring network implementation activities which is summarized in the SAC packet. He noted that 6 of the 10 transducers have been installed and these

should be finalized by the end of March 2021.

Mr. Blakslee reported that staff has been in coordination with USGS on the joint funding agreement and once this is drafted work can start on the two stream gauges.

f. Update on Monthly Groundwater Conditions Report

Mr. Van Lienden provided an update on the groundwater level monitoring network and levels for January 2021 which are included in the SAC packet.

g. Update on Modifications to the Groundwater Level Monitoring Network

Mr. Van Lienden reminded the SAC that the SAC and Board voted to reduce the groundwater level monitoring network from 101 wells to 58 and to move from monthly monitoring to quarterly monitoring. He said staff has been in communication with DWR on the proposed changes and while they were favorable to the reduction of wells, they recommended monitoring occur monthly through June 30, 2021 before reducing to quarterly.

Mr. Van Lienden also reported that due to the reduction in the network staff considered potential impacts to thresholds and trigger percentages. He noted that changing the adaptive management trigger (currently set in the GSP as 30 percent of representative wells below their minimum thresholds for two consecutive years) would likely require a GSP amendment. However, he said with the reduction of the network and the onboarding of three DWR TSS wells and considering the two existing multi completion wells, the representative network would actually increase from 60 to 65 and staff recommends keeping thresholds as they are set.

10. Groundwater Sustainability Agency

a. Report of the Executive Director

Nothing to report.

b. Coordination between the GSA and Counties

Committee Member Jaffe reported that Santa Barbara County has set up an advisory committee to develop voluntary guidelines that cannabis permittees can include in their permit applications. She said there is a potential to include six Cuyama valley residents and five cannabis industry representatives on the committee. She noted that the GSA will need to be connected into this at some point. She reported that the advisory committee held their first orientation meeting this week and there are currently five Cuyama Basin participants.

c. Board of Directors Agenda Review

Mr. Beck provided an overview of the March 3, 2021 CBGSA Board of Directors meeting agenda which is provided in the SAC packet.

d. Report of the General Counsel

Nothing to report.

11. Items for Upcoming Sessions

Nothing to report.

12. Committee Forum

Nothing to report.

13. Public comment for items not on the Agenda

Nothing to report.

14. Correspondence

Nothing to report.

15. Adjourn

Chair Kelly adjourned the meeting at 7:13 p.m.

Minutes approved by the Standing Advisory Committee of the Cuyama Basin Groundwater Sustainability Agency the 29th day of April 2021.

STANDING ADVISORY COMMITTEE OF THE
CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Chair: _____

ATTEST:

Vice Chair: _____

To-Dos:

- Include previous year change in groundwater level maps in the water year 2020-2021 Annual Report.
- Add key landmarks to the maps for the 2020-2021 annual report (streams, canyons, and Foothill and Bell Road).
- Reference the far-northwestern region consistently throughout the water year 2019-2020 Annual Report.



TO: Standing Advisory Committee
Agenda Item No. 6a

FROM: Brian Van Lienden, Woodard & Curran

DATE: April 29, 2021

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

Groundwater Sustainability Plan Update

May 5, 2021



March-April Accomplishments

- ✓ Performed field validation/data collection for groundwater levels and quality monitoring
- ✓ Completed installation of transducers in Cuyama Basin wells using DWR grant funding
- ✓ Developed draft meter installation and pumping quantity reporting guidance documents
- ✓ Began work to develop edition 8 of CBGSA newsletter



TO: Standing Advisory Committee
Agenda Item No. 6b

FROM: Brian Van Lienden, Woodard & Curran

DATE: April 29, 2021

SUBJECT: Approval of Meter Guidance and Reporting Instructions

Issue

Consider approval of meter guidance and reporting instructions.

Recommended Motion

Approve the meter guidance and reporting instructions as outlined in agenda item no. 6b.

Discussion

In November 2020, the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board of Directors voted to require meters on all non-de minimis wells in the Cuyama Basin by December 31, 2021. To comply with this requirement, staff developed meter installation and reporting documentation (provided as Attachment 1) and annual reporting instructions (provided as Attachment 2).

These documents are included for consideration of approval by the Standing Advisory Committee for the purpose of providing a recommendation to the CBGSA Board of Directors on May 5, 2021.

If these documents are approved, staff will distribute them along with a cover letter to all parcel owners in the Cuyama Basin.

Cuyama Basin Groundwater Sustainability Agency

Approval of Meter Guidance and Reporting Instructions

May 5, 2021

Approval of Scope to Implement Metering Requirement

- On November 4, the CBGSA Board approved a motion to require non-de minimis groundwater users in the Cuyama Basin to install a water measuring device (flow meter) on all groundwater extraction wells by no later than December 31, 2021
- To keep with this schedule, the following activities will be completed by June 30, 2021:
 - Identify locations and count of non-de minimis pumping wells
 - Develops guidance documents for meter installation and reporting of pumping quantities
 - Sending notice of metering requirement and guidance documents to all landowners
- Staff recommends Board approval of the draft documents on meter installation guidance and reporting of pumping quantities



**Cuyama Basin Well Metering Program:
Guidance for Meter Installation and Data Collection - DRAFT**

Prepared by:



April 2021

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Abbreviations and Acronyms

Basin	Cuyama Valley Groundwater Basin
CBGSA	Cuyama Basin Groundwater Sustainability Agency
DWR	California Department of Water Resources
gpm	Gallons per minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
SGMA	Sustainability Groundwater Management Act

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Section 1. Introduction

The Cuyama Valley Groundwater Basin (Basin) has been identified by the California Department of Water Resources (DWR) as subject to critical conditions of overdraft (DWR 2016). As such, in accordance with California’s Sustainable Groundwater Management Act (SGMA), the Cuyama Basin Groundwater Sustainability Agency (CBGSA) was formed to develop and implement a basin-specific Groundwater Sustainability Plan (GSP). The Cuyama Basin GSP was completed and submitted to DWR in January 2020. The general purpose of the GSP is to facilitate a long-term groundwater withdrawal rate less than or equal to the sustainable yield of the Subbasin within the maximum 20-year implementation period mandated by SGMA.

The CBGSA has utilized groundwater extraction fees to promote sustainable extraction volumes of groundwater from the Basin and help fund the implementation of the GSP. Since the GSP was adopted in January 2020, groundwater pumping volumes were calculated using evapotranspiration data from remote sensing to determine estimated water use on irrigated lands, as this was the only Basin wide method for data collection available at the time. During the November 4th, 2020 CBGSA Board Meeting, a motion was passed to require all non-de minimis¹ groundwater users to install water measuring devices (flow meters) on all groundwater extraction wells no later than December 31, 2021.

Collection and reporting of well flow data are integral to enable proactive and adaptive management of groundwater resources and documentation of seasonal fluctuation in water demand. This data is more accurate than evapotranspiration estimates and will provide additional data for model calibration. In addition to providing an estimate of groundwater production, groundwater flow data may be used by the CBGSA in conjunction with groundwater level data to improve understanding of groundwater basin conditions. This is especially important for sustainable regional management of groundwater resources.

The purpose of this document is to provide guidance and protocols for groundwater well flow metering for well owners in the Basin. This includes instructions on how to install a flow meter and to collect flow data.

Section 2. What is a Flow Meter and Totalizer?

In the context of groundwater, a flow meter is a device or instrument used to measure water properties (such as velocity or pressure) of water flow. A totalizing meter (or totalizer) measures the volume of water pumped from a well. The two instruments can often be found in a single device (**Figure 1**). For the purposes of this document, a flow meter refers to a device that measures, at a minimum, the total volume of groundwater extracted from a well: a totalizing flow meter.

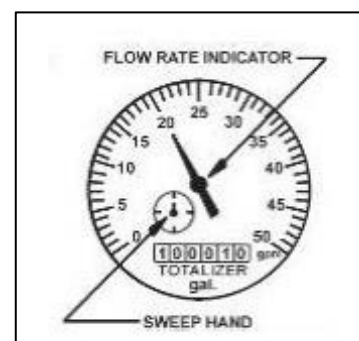


Figure 1: Flow meter with totalizer.

¹ A de minimis groundwater user pumps less than 2 Acre-feet per year

A flow meter works much like the speedometer in your car, with the needle on the meter face registering the instantaneous rate at which water is moving through the meter (typically in gallons per minute [gpm]), like a speedometer. At the same time, the “totalizer” counters near the bottom of the meter face show the cumulative total volume of water that has moved through the meter (typically in cubic feet or gallons), similar to an odometer in your car. The volume of water passing through the totalizing meter during a given monitoring period is calculated by reading the numbers on the totalizer at the end of the monitoring period, and subtracting the numbers recorded at the end of the previous monitoring period.

Section 3. Purchasing and Installing Totalizing Flow Meter(s)

Totalizing flow meters can commonly be found at your local water pump supplier or from online equipment suppliers. Each flow meter should have a manufacturer’s seal and should be installed, operated, and maintained to manufacturer’s standards, instructions, and recommendations. Some types of flowmeters require a new flanged or welded section of pipe be installed in the pump discharge pipe. Others can be saddle-mounted over a hole cut in the discharge pipe, and others can be mounted on the outside of existing pipes with no cutting or welding required.

3.1 Selecting Flow Meter(s)

A flow meter may cost as little as under \$1,000 to over \$10,000, depending on the size of the system and the type of flow meter. Three common types of flow meters are described below.

- **Propeller meters:** Propeller flowmeters are a common type of flow meter used for measuring pressurized water delivery systems. A propeller is mounted in the well discharge pipe, and rotational speed of the propellers translates to a flow rate and volume in the attached meter via a magnetic pick-up, photoelectric cell, or gears. Propeller meters are sensitive to turbidity wearing or plugging up the bearings, so they should ideally be used in relatively clean water such as typical well water. Propeller meters also can spin (and potentially overestimate groundwater pumping) in cases where entrained air (created by internally cascading water in the well or other sources) moves through the discharge pipe.
- **Electromagnetic meters:** Electromagnetic flowmeters can measure the flow of electrically conductive liquids, such as water. These meters mount similarly to propeller meters but instead of a propeller they use a flow tube or sensor rod within the well discharge pipe. Faraday’s law of electromagnetic induction states that a voltage will be induced when a conductor moves through a magnetic field. In this case, the conductive liquid (water) moves through the magnetic field created by energized coils outside the flow tube or contained within the sensor rod. The rate of flow is proportional to the produced voltage, which is registered and measured by electrodes mounted on the pipe wall or along the sensor rod. Electromagnetic meters are more expensive but have advantages compared to propeller meters, since they can measure flow in both directions, and do not have moving parts which can wear.
- **Ultrasonic meters:** Ultrasonic flowmeters send ultra-high frequency sound waves into the well discharge pipe and measure the frequency shifts or sonic velocity changes caused by liquid flow, which are proportional to the liquid’s velocity. One or more transceiver sensors, mounted outside of the discharge pipe, send a sonic signal of known frequency into the pipe. The moving liquid causes the receiver element to detect a shifted pulse, which is used to calculate the water velocity and thus the volumetric flow. Two types of ultrasonic flowmeters can be used, depending on the

characteristics of the discharge water. *Doppler ultrasonic flowmeters* require a small amount of particulate matter or small bubbles in the discharge, in order to bounce the sonic signal back to the transceiver. They measure the shift in frequency caused by reflection from a moving object. *Transit-time ultrasonic flowmeters* require the water to be mostly free of particles or bubbles, and measure the difference in time a sonic signal in moving water takes to move in an upstream versus a downstream direction.

The electromagnetic meter has typically been chosen over the other two methods due to reliability provided by a lack of moving parts, thereby minimizing the potential for wear and loss of calibration, or obstruction by solids that may be in the pumped groundwater stream.

Regardless of the type of totalizing flow meter selected, to be used for reporting to the CBGSA, the meter must meet the requirements presented below to support accurate measurement of flows:

- Warranted to register not less than 98% and not more than 102% of the actual volume of water passing the meter for all rates of flow within the meter size's range of flow.
- Equipped with a direct reading rate-of-flow indicator showing instantaneous flow in gallons per minute or a sweep hand indicator for which rate-of-flow can be determined by timing.
- Equipped with a visual, volume-recording totalizer recorded in gallons, cubic feet, acre-inches, or acre-feet.
- Calibrated prior to installation.
- Installed near the well (upstream of all connections to the main discharge line) to measure the entire flow from the well.
- Installed such that there is full pipe flow at all times. Full pipe flow can be achieved by elevating a downstream section of pipe, or constructing a gooseneck in the downstream pipe. Pressurized systems will normally have full pipe flow.
- Installed with a specific minimum length of unobstructed straight run of pipe without valves or elbows upstream and downstream of the meter, based on manufacturer's recommendations. Such recommendations may be as much as 10 pipe diameters upstream and 5 pipe diameters downstream, so that for a 12" discharge pipe, 120" would be required upstream and 60" would be required downstream. Usage of straightening vanes may be used to reduce the lengths. Lengths are generally longer for propeller meters than magnetic meters.

3.2 Establishing Flow Meter Locations

Prior to installing flow meters, several steps must be taken to determine appropriate locations for the flow meters. These steps are generally as follows:

Step 1: Locate the well – Take pictures of the site location and well before meter installation for documentation. Observe the surrounding environment and make notes for the well file.

Step 2: Establish a data file for the well – Collect any records you may have or have access to, including the well construction report (WCR) filed with the California Department of Water Resources (DWR), the local well permit number, hydrogeologic information (e.g., boring logs, electric logs, or well driller's logs prepared during well construction), pump details (e.g., type, make & model, intake depth, horsepower, capacity, etc.), pumping test data, and any groundwater quality data from samples from the well. Specifically, determine if the production capacity (flow rate) of the well was ever established, and measure the discharge pipe diameter; this information will be necessary to select the appropriate meter for installation.

Step 3: Prepare the site for metering - At the well location, identify the best location for the flow meter based on the specific requirements of the meter type and model to be used, and based on how it will be accessed once it has been installed. Production wells may have permanent well seals installed on the top; therefore you will need to identify how and where within the discharge stream you will install the meter. This may involve moving landscaping or hardscape around the well in order to have the necessary clearance and access.

Step 4: Selecting the location for meter installation – Selecting a flow meter location that truly reflects the amount of water being extracted from the well is critical for accurate flow measurements. There should be no obstructions and sufficient spacing around the meter to allow access for meter reading. Additionally, if the flow meter is installed outdoors, extra care should be taken to protect it from frost and to allow drainage.

For accurate meter performance, the measurements must be conducted at a point in the discharge pipe where it flows full. Turbulence will reduce the accuracy of flow measurements, so straight piping must be used both upstream and downstream of the meter. The straight sections must be free of valves, junctions, adapters, changes in pipe diameter, sand separators, or other sources of turbulence. A general rule of thumb for straight piping around the meter is to allow at least 5-10 pipe diameters upstream and 2-5 pipe diameters downstream of unobstructed straight run from the meter sensor, however this should be confirmed for the particular make and model of flowmeter used. If this design is not possible, straightening vanes may be used to achieve more laminar flow through the meters. **Figure 2** below shows an image and diagram of a straightening vane connected with a flow meter.

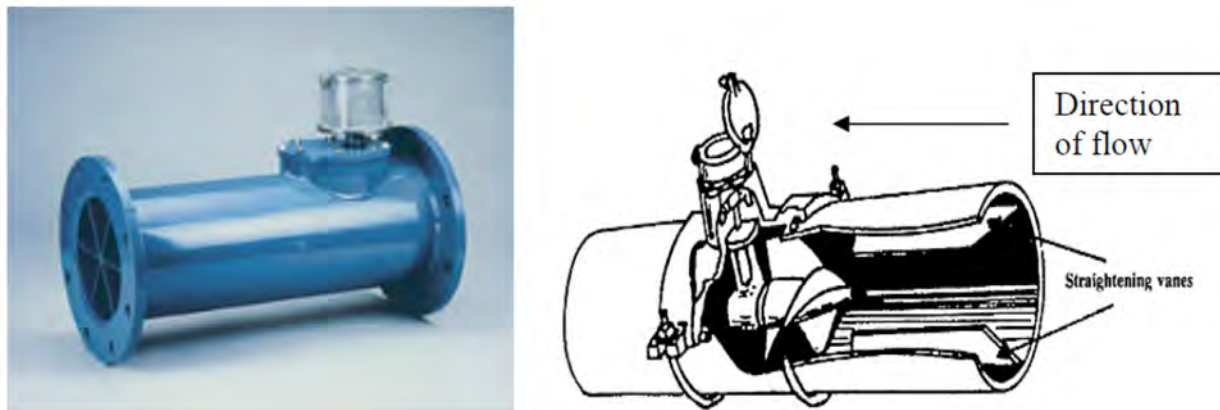


Figure 2: Flow meter with straightening vanes upstream of the meter.

3.3 General Procedures for Flow Meter Installation

General procedures for installing a flow meter after it has been purchased and its installation location has been determined are presented below. Well owners or users could potentially do this on their own, but assistance in flowmeter selection and installation from the flow meter supplier is recommended to improve the likely quality of installation and of future flow measurements.

1. Conduct a pre-installation site inspection to review well configuration and piping and potential hazards. Determine pipe diameters, run lengths, and locations of elbows, valves, and other obstructions.

2. Confirm installation design with supplier.
3. If necessary (e.g., if there is the potential for groundwater contamination), ensure that personnel have appropriate proper personal protective equipment (PPE) before proceeding.
4. Clear a 30' diameter area around the installation location to reduce the potential of grass fire during welding or grinding work, and have a water source available.
5. Turn off the power source/electrical main and any necessary pipeline valving.
6. Verify that water system is at zero pressure.
7. Install meter at established location, making sure that full flow and straightness of pipe at the meter sensor is achieved. Saddle mounting can be used for propeller meters and some types of magnetic meters, where a hole is cut in the pipe to install a saddle-mounted meter. Often when straightening vanes are required, a section of the existing pipe system is cut out and replaced by a flanged meter.
8. Resume normal operations after turning back on piping appurtenances and the power source/electrical main.
9. Conduct a post-installation site inspection.

Section 4. Collecting Flow Data

Manual groundwater well flow (totalizing) meter readings should be conducted in a prescribed manner in order to ensure consistency in the data collection process. The following provides a step-by-step process for collecting this data, as well as a section specifically on reading meters.

4.1 General Procedures for Collecting Data

General procedure for collecting meter measurements. Note that these instructions are for collecting totalizing (volume of flow) data, rather than velocity (flow rate) data.

1. Inspect the groundwater well and surrounding area. Note any new or changed conditions.
2. Refer to previous well meter readings to estimate the expected reading.
3. Access the totalizing flow meter. If vault entry is required, exercise precautionary safety procedures.
4. Read the meter directly where possible. If the meter cannot be accessed directly (e.g. it is located in a vault), read the meter using binoculars if possible, or carefully enter the vault to directly read the meter.
5. For consistent documentation, record measurement results on a standardized form. In addition to the total flow volume and instantaneous flow rate readings from the flow meter, the form should also include information such as: well identification and location, date and time of data collection, flow meter information (meter location, installation date, serial number, type, size, manufacturer, etc.). Note if the meter has “rolled over” and started counting from zero again. If possible, take a photo of the meter face that legibly shows the totalizer numbers.
6. For quality control, compare the meter reading to previous readings. Does the total flow difference make sense?
7. Re-secure the well and meter.

Figure 3 shows an example of a flow meter display. **Figure 4** is a diagram explaining how to read common types of flowmeters, which can be trickier than it sounds. Note that the units (e.g., gallons, cubic feet, acre-feet, acre-inches) on different flowmeters may vary, and decimal points often are implied instead of shown (digits after the decimal are commonly indicated by yellow numbers instead of white). The totalizer shown on **Figure 3** is measuring in thousandths (1/1000) of acre-feet rather than gallons. It is critical to always write down the flowmeter units that are being recorded during a monitoring period.



Figure 3: Example Flow Meter Display
(Totalizer reads 679.675 acre-feet)

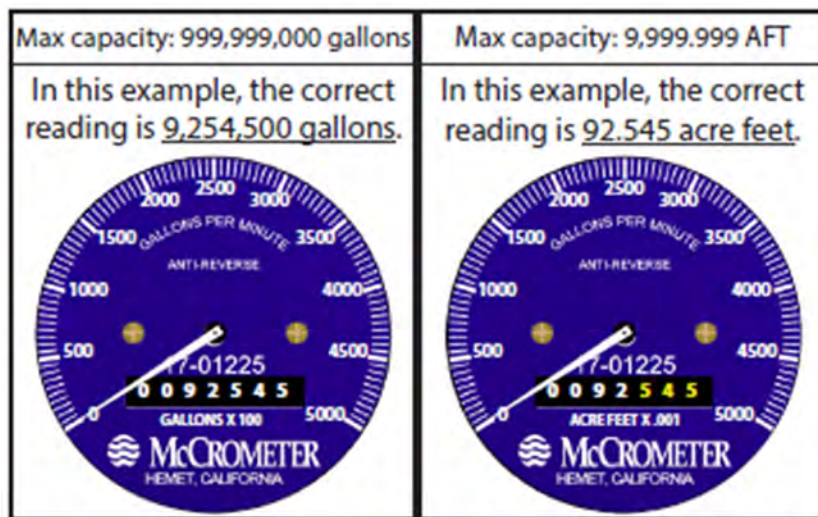


Figure 4: Examples of How to Read Different Types of Flow Meters
(image courtesy of McCrometer Corporation)

Section 5. Calibrating and Maintaining Flow Meters

Meters are initially calibrated by the manufacturer at the time of manufacture or refurbishing, prior to installation, and they should not need calibration immediately after installation. Any issues in the flow meters identified during meter readings or routine inspections should be reported to the manufacturer or supplier as soon as possible. Common issues to be aware of include worn bearings or sender cables (sometimes indicated by noise), propellers getting stuck due to mechanical failures or debris, and moisture inside the meter. With electromagnetic and ultrasonic meters, low battery, poor grounding, or software failure also can be potential problems.

Proper calibration and verification is important for ensuring data quality, and necessary for meeting the objectives of the Metering Plan. Well owners are responsible for costs for installation, calibration, verification, and maintenance of meters.

5.1 Initial Calibration/Validation of Existing Meters

New meters will require a certificate of calibration which must be provided to the GSA and recorded. Existing meters in the Basin will need to be inspected and validated to ensure proper function and calibration. These activities must be conducted by a California-licensed pump contractor. This initial calibration and validation will be conducted at the beginning of the schedule of routine metering activities, and a certificate of calibration must be produced and recorded. Certificates of calibration for new and existing meters must be submitted to the CBGSA.

5.2 Routine Calibration and Validation

The meters must be re-calibrated, rebuilt, or replaced at least every five years, except for electromagnetic meters which must be replaced after no more than 20 years, with periodic cleaning during the life of the meter. Note that installing filters ahead of the meter units help make the water cleaner and minimize fouling and wear on propeller meters; however, these filters may require periodic backwashing and/or replacement per manufacturer's instructions to maintain their effectiveness.

Section 6. Further Reading

Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources. 2012. *Guidance on Acceptable Means of Measuring or Estimating Water Withdrawals*. May.

Department of Ecology, State of Washington. *Liquid Flowmeters – A Guide for Selecting a Flowmeter for Pressurized Systems*. Available at: <https://apps.wa.gov/ecology/docs/WaterRights/wrwebpdf/gsfps.pdf>. Accessed September 2016.

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Eastern Municipal Water District, Water Resources Management Department. 2004. Standard Operations Procedures: Groundwater Extraction Monitoring Program Meter Installation, Meter Reading, and Maintenance & Calibration Procedures. June 28.

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Oregon Water Resources Department. 2010. *Water Well Owner's Handbook: A Guide to Water Wells in Oregon*. March.

Southwest Kansas Groundwater Management District #3. 2011. *Flowmeter Maintenance and Issues*. February 22-23.

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Cuyama Basin Well Metering Program: Guidance on Well Meter Data Reporting - DRAFT

Prepared by:



April 2021

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Abbreviations and Acronyms

CBGSA	Cuyama Basin Groundwater Sustainability Agency
DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
SGMA	Sustainability Groundwater Management Act

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Section 1. Introduction

The Cuyama Valley Groundwater Basin (Basin) has been identified by the California Department of Water Resources (DWR) as subject to critical conditions of overdraft (DWR 2016). As such, in accordance with California’s Sustainable Groundwater Management Act (SGMA), the Cuyama Basin Groundwater Sustainability Agency (CBGSA) was formed to develop and implement a basin-specific Groundwater Sustainability Plan (GSP). The Cuyama Basin GSP was completed and submitted to DWR in January 2020. The general purpose of the GSP is to facilitate a long-term groundwater withdrawal rate less than or equal to the sustainable yield of the Subbasin within the maximum 20-year implementation period mandated by SGMA.

The CBGSA has utilized groundwater extraction fees to promote sustainable extraction volumes of groundwater from the Basin and help fund the implementation of the GSP. Since the GSP was adopted in January 2020, groundwater pumping volumes were calculated using evapotranspiration data from remote sensing to determine estimated water use on irrigated lands, as this was the only Basin wide method for data collection available at the time. During the November 4th, 2020 Cuyama Basin Board Meeting, a motion was passed to require all non-de minimis groundwater users (a de minimis groundwater user pumps less than 2 acre-feet per year for non-commercial purposes or less than 1.5 acre-feet per year for commercial purposes) to install water measuring devices (flow meters) on all groundwater extraction wells no later than December 31, 2021.

Collection and reporting of well flow data are integral to enable proactive and adaptive management of groundwater resources and documentation of seasonal fluctuation in water demand. This data is more accurate than evapotranspiration estimates and will provide additional data for model calibration. In addition to providing an estimate of groundwater production, groundwater flow data may be used by the CBGSA in conjunction with groundwater level data to improve understanding of groundwater basin conditions. This is especially important for sustainable regional management of groundwater resources.

The purpose of this document is to provide guidance for reporting flow data to the Cuyama Basin Groundwater Sustainability Agency (CBGSA). Please see the *Cuyama Basin Well Metering Program: Guidance for Meter Installation and Data Collection* technical memorandum for more information on meter installation and how to collect meter data.

Section 2. Well Flow Meter Installation Reporting

The CBGSA will require submission of a **Well Flow Meter Installation Report** whenever a new or replacement flow meter is installed on a well, which will include information about each specific production well with an installed flow meter. Required information will include:

- Local Well Name
- State Well Number (SWN)
- Coordinate location
- Meter type/make/model number
- Meter serial number
- Meter units and multiplier
- Manufacturer calibration certificate/documentation (including the date of recalibration)
- Installation date
- Installer name, company name, address, contact information, license information
- Pictures of well and meter and the vicinity of the well location

- A sketch of the well location with prominent features (e.g., streets, structures, fences) and distances

The **Well Flow Meter Installation Report** will be required for all non-de minimis production wells currently in place by January 31, 2022. After this date, a report will be required for any new well or new meter installed within one month of installation date. Any changes or updates to the flow meters should also be reported to the CBGSA. Flow meters are not required on inactive or retired wells, however, if a well is brought back into service, a flow meter must be installed.

There are two options for reporting flow meter installation (required for each well):

1. Download the Well Flow Meter Installation Report at <https://cuyamabasin.org/resources>, and email to Taylor Blakslee at TBlakslee@hgcpm.com, or via mail to CBGSA 4900 California Ave, Tower B, Suite 210, Bakersfield, CA 93309.
2. Submit the Well Flow Meter Installation Report electronically. The form can be accessed at <https://cuyamabasin.org/resources>.

Section 3. Well Flow Meter Reporting

Well flow meter data will be collected by January 31st each year for the preceding calendar year for each non-de minimis production well in the Basin using the **Well Flow Meter Reporting Template**. For model calibration and improvement purposes, the CBGSA requests that flow data be provided in **monthly** intervals to better understand the seasonal fluctuations in groundwater demands throughout the Basin.

Data reported to the CBGSA includes:

- Local Well Name
- State Well Number (SWN)
- Flow meter serial number
- Monthly flow meter reading for the volume (including units) for the calendar year with date and time of recording
- Calculated total volume (including units) for the calendar year
- Monthly photograph of the well flow meter at the time of reading showing the totalizer value

There are three options for reporting flow meter volumes (required for each well):

1. **Online Survey:** Submit the annual well flow meter data into an online survey at *TBD*.
2. **Electronically:** Download the Well Flow Meter Reporting Template at <https://cuyamabasin.org/resources>, and submit electronically to Taylor Blakslee at tblakslee@hgcpm.com.
3. **Mail:** Download the Well Flow Meter Reporting template at <https://cuyamabasin.org/resources> and submit via mail to: Cuyama Basin Groundwater Sustainability Agency, 4900 California Ave, Tower B, Suite 210, Bakersfield, CA 93309.

To minimize costs associated with data collection, the GSA is relying on well operators to collect and record monthly data. Therefore, pictures of the flow meter totalizer are requested to validate flow values and should be submitted with the Well Flow Volume Reporting Template. Pictures for each month for each flow meter are preferred, but at a minimum are required annually to show the total flow volume for the year. If submitted electronically, each picture should be labeled as “*WellProductionID_yyyy_mm.*” Example “0295_202203” would be for well 0295, for flow volumes during March of 2022.

Please note: Initial totalizer data and pictures will also be required for all flow meters at the completion of install (to show starting value) and for existing meters when monitoring begins on **January 1, 2022**. This will be the starting value to calculate total flows for each month and year, as the totalizer provides a cumulative flow value.



TO: Standing Advisory Committee
Agenda Item No. 6c

FROM: Brian Van Lienden, Woodard & Curran

DATE: April 29, 2021

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

May 5, 2021









Groundwater Levels Monitoring Network Status Update – DWR TSS and Category 1

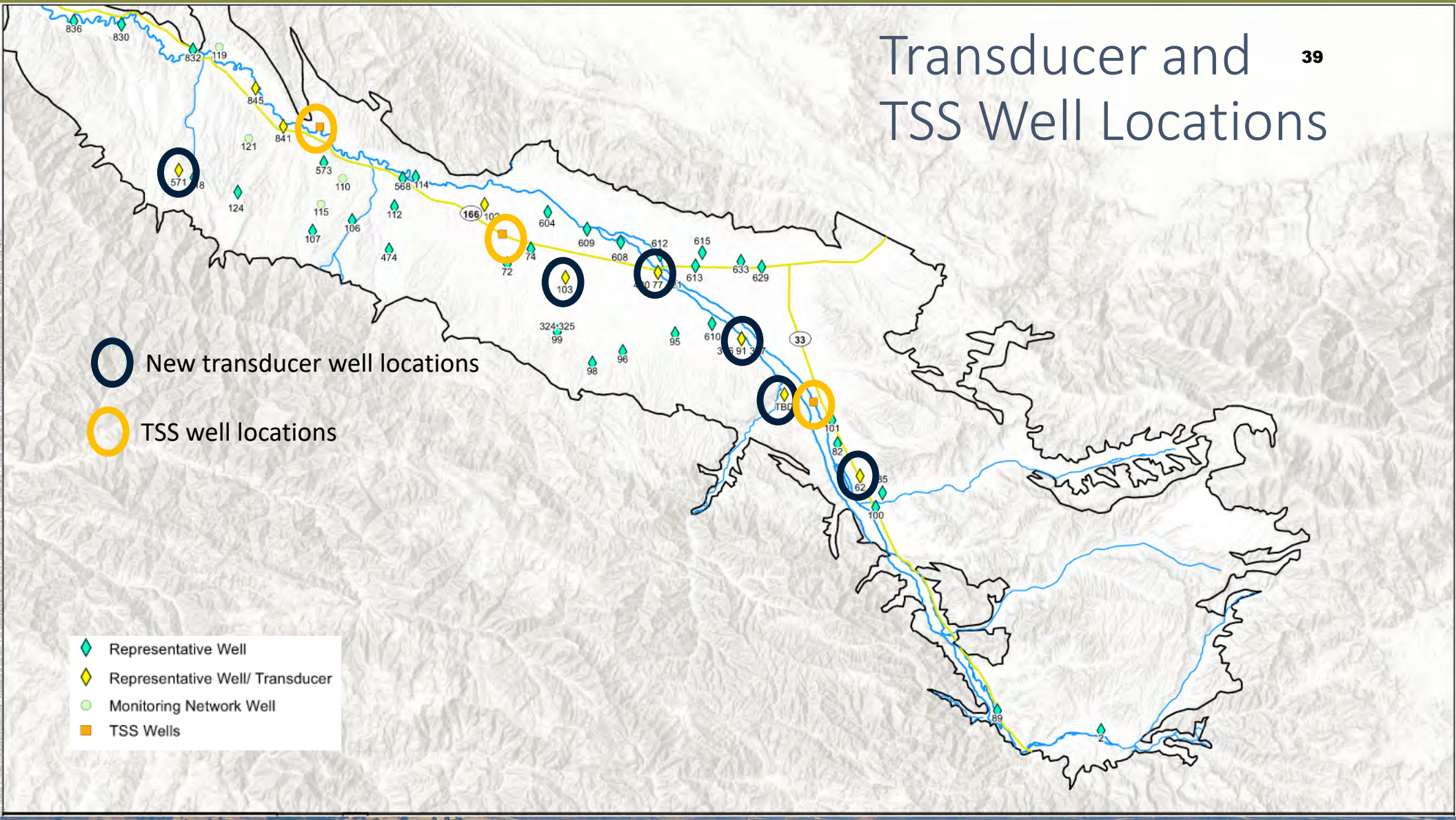
38

- Installation of new wells by DWR Technical Support Services
 - Currently working with DWR and landowners to finalize permits and agreements
 - Installation is scheduled to start in May and to be completed by August
 - Staff is working with landowners to identify an alternate site for the second well near New Cuyama
- Installation of transducers with DWR Category 1 grant funding
 - All 10 transducers have now been installed

Transducer and TSS Well Locations

-  New transducer well locations
-  TSS well locations

-  Representative Well
-  Representative Well/ Transducer
-  Monitoring Network Well
-  TSS Wells



Stream Gage Implementation – FY 2020-21

- 2 new streamflow gages will be installed by USGS using Category 1 grant funding from DWR:
 - Upstream of Ventucopa
 - Spanish Ranch
- Gage installation at both locations anticipated by end of July





TO: Standing Advisory Committee
Agenda Item No. 6d

FROM: Brian Van Lienden, Woodard & Curran

DATE: April 29, 2021

SUBJECT: Update on Monthly Groundwater Conditions Report

Issue

Update on Monthly Groundwater Conditions Report.

Recommended Motion

None – information only.

Discussion

An update regarding the groundwater levels monitoring network and select hydrographs is provided as Attachment 1. The detailed March 2021 Groundwater Conditions Report is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

Monthly Groundwater Conditions Report

May 5, 2021

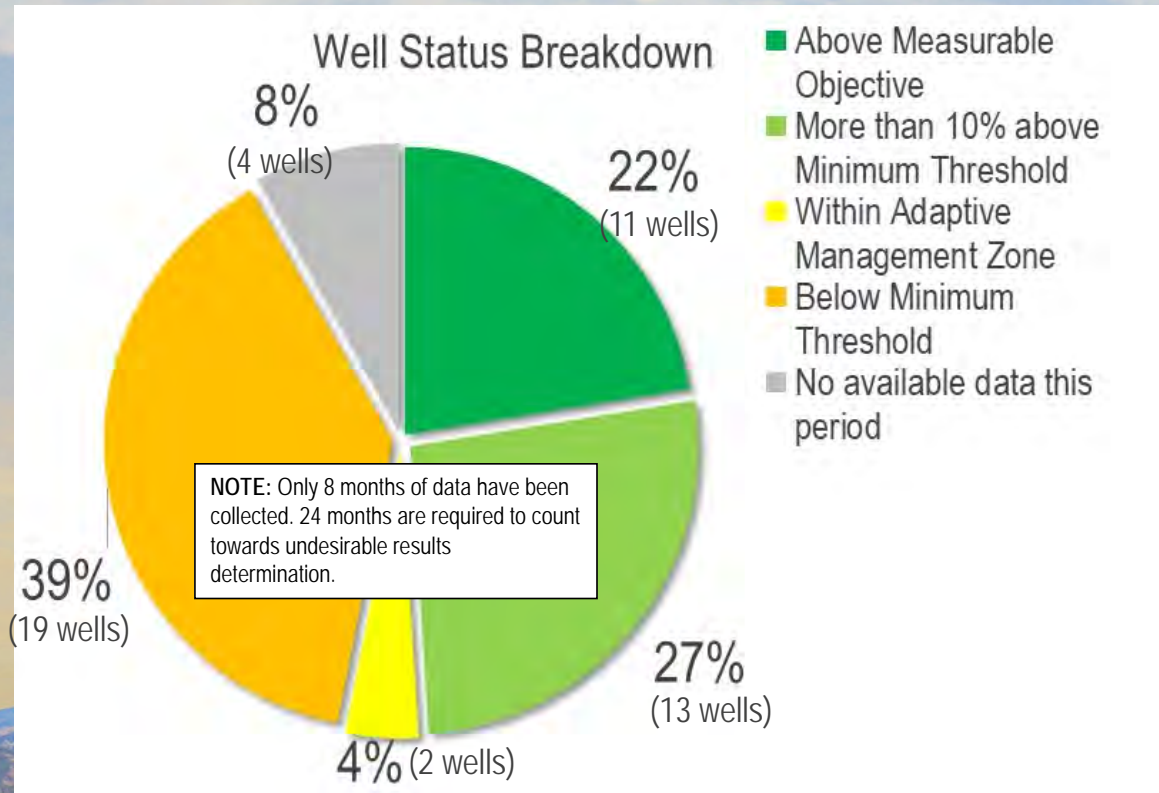


Groundwater Levels Monitoring Network – Summary of Current Conditions

- Monitoring data from Jan-Mar for representative wells is included in Board packet monitoring summary report
- 49 of 53 representative monitoring wells have levels data in March
- 19 wells were below the minimum threshold in March as compared to only 14 in February
 - This may be due to the dry conditions the Basin is experiencing this winter

Summary of Groundwater Well Levels as Compared To Sustainability Criteria

- 19 wells are currently below minimum threshold (MT)
 - 8 of these were already below MT at time of GSP adoption
- Adaptive management recommendation:
 - Continue monitoring to see how conditions change during the Spring months
 - Develop response options if needed



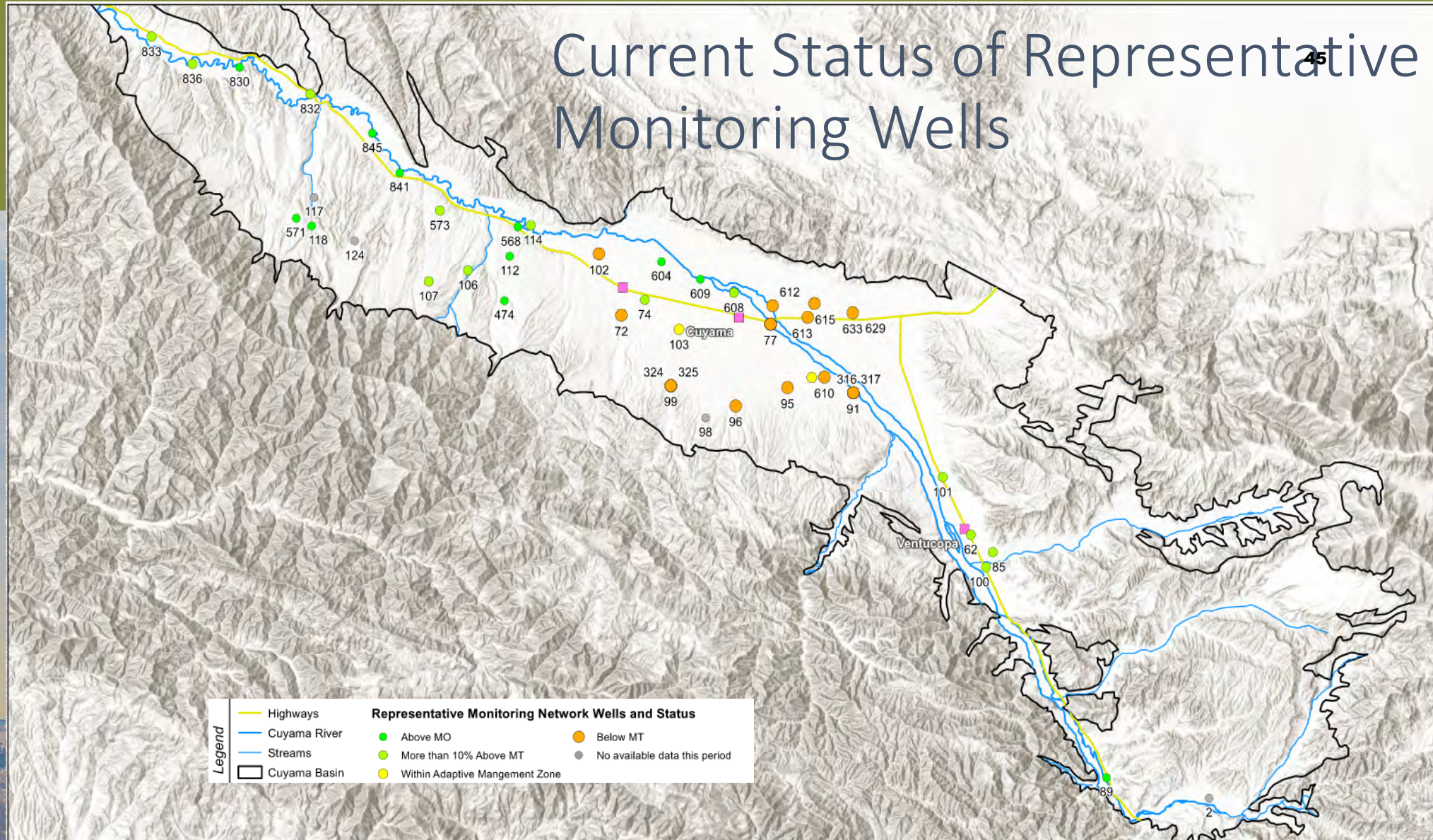
Current Status of Representative Monitoring Wells

Legend

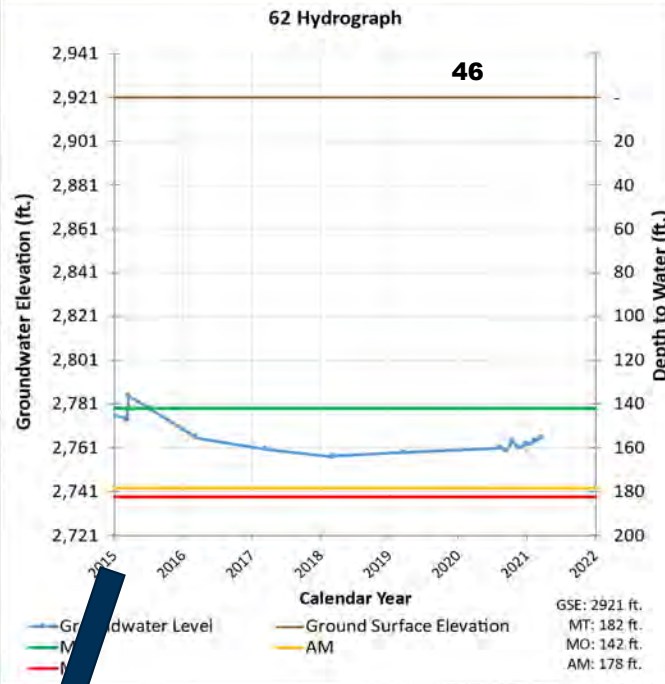
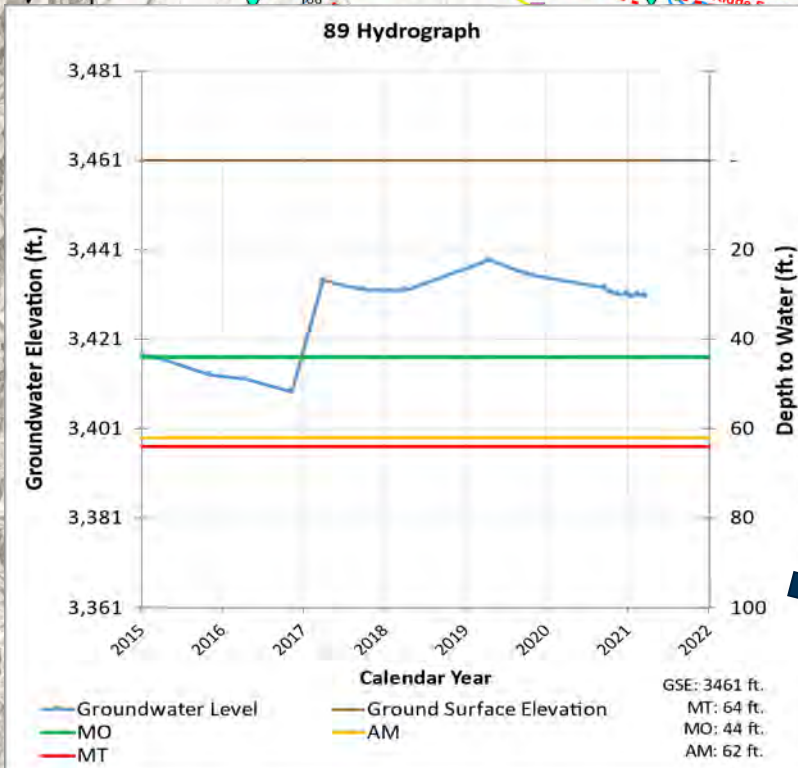
- Highways
- Cuyama River
- Streams
- Cuyama Basin

Representative Monitoring Network Wells and Status

- Above MO
- More than 10% Above MT
- Within Adaptive Mangement Zone
- Below MT
- No available data this period

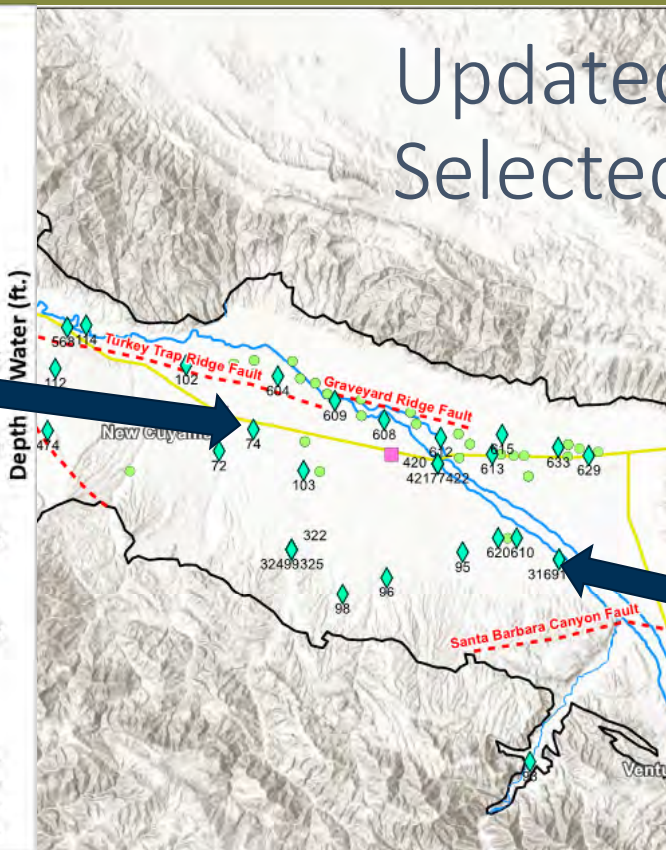
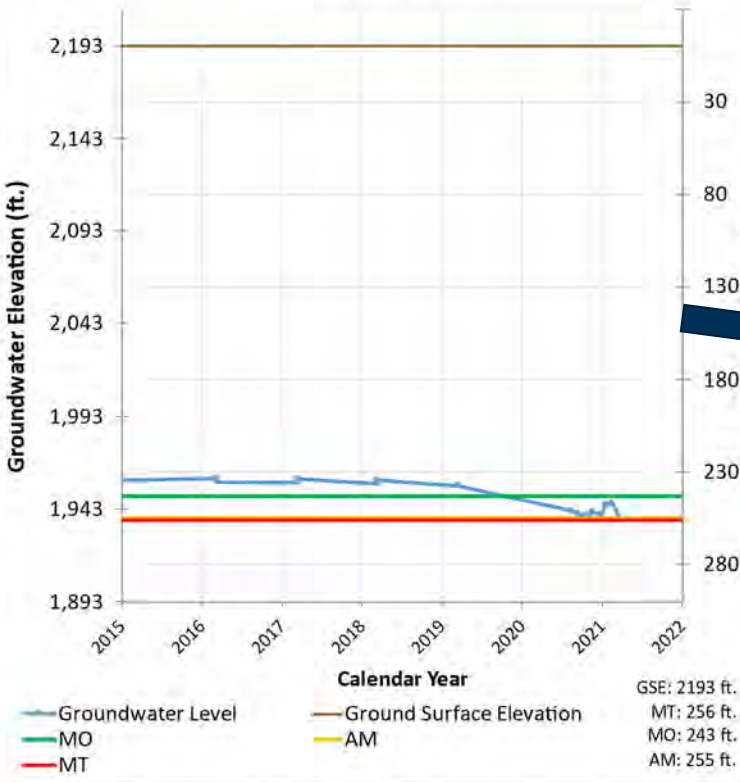


Updated Hydrographs for Selected Monitoring Wells

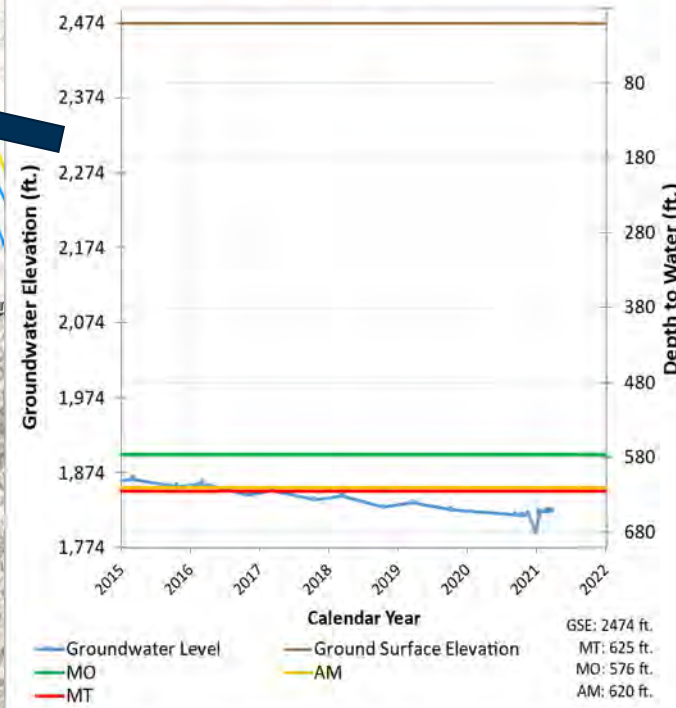


Updated Hydrographs for Selected Monitoring Wells

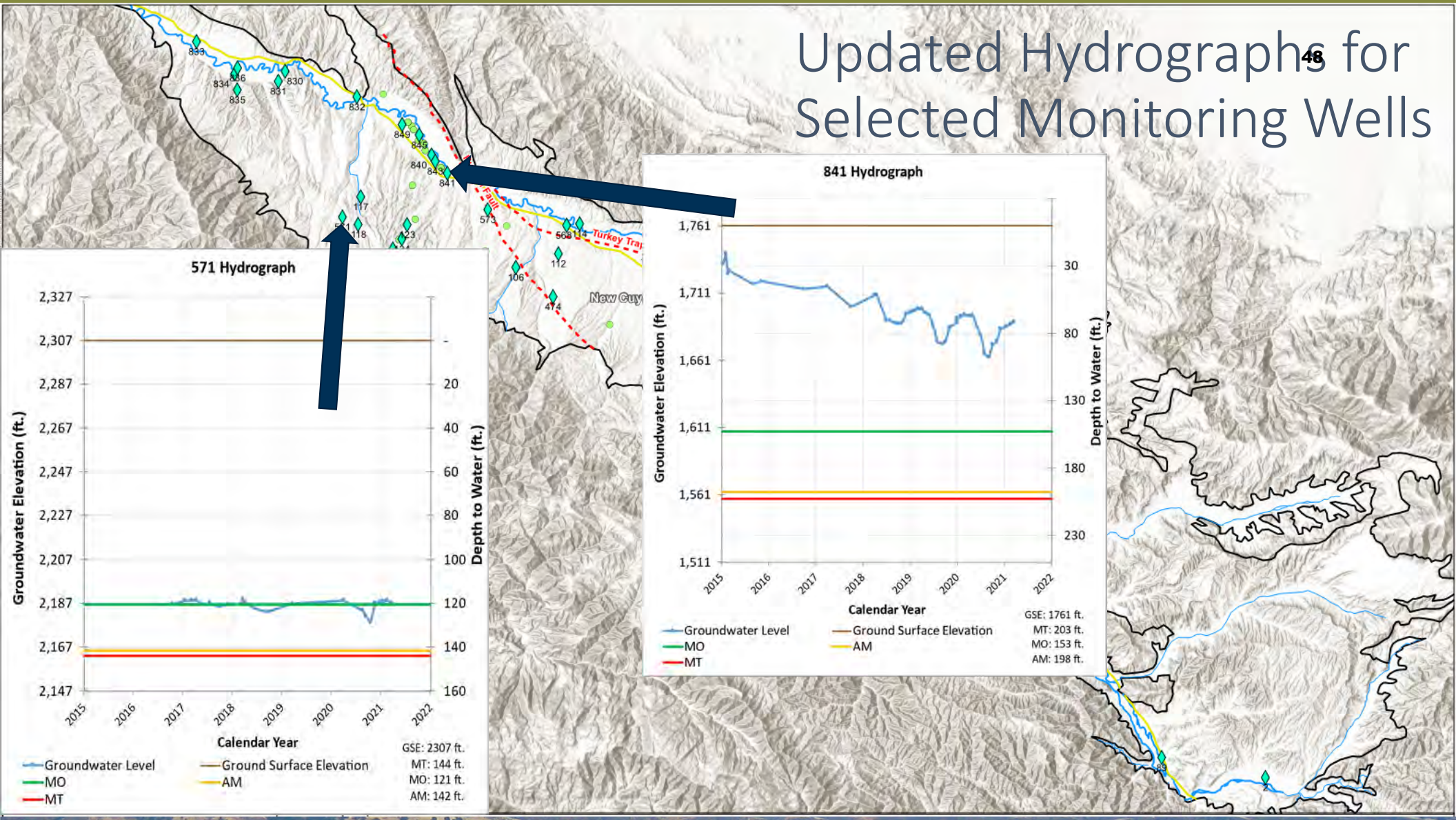
74 Hydrograph



91 Hydrograph



Updated Hydrographs for Selected Monitoring Wells





**GROUNDWATER
CONDITIONS
REPORT –
CUYAMA VALLEY
GROUNDWATER
BASIN**

March 2021

801 T Street
Sacramento, CA.
916.999.8700

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

**Cuyama Basin
Groundwater
Sustainability Agency**

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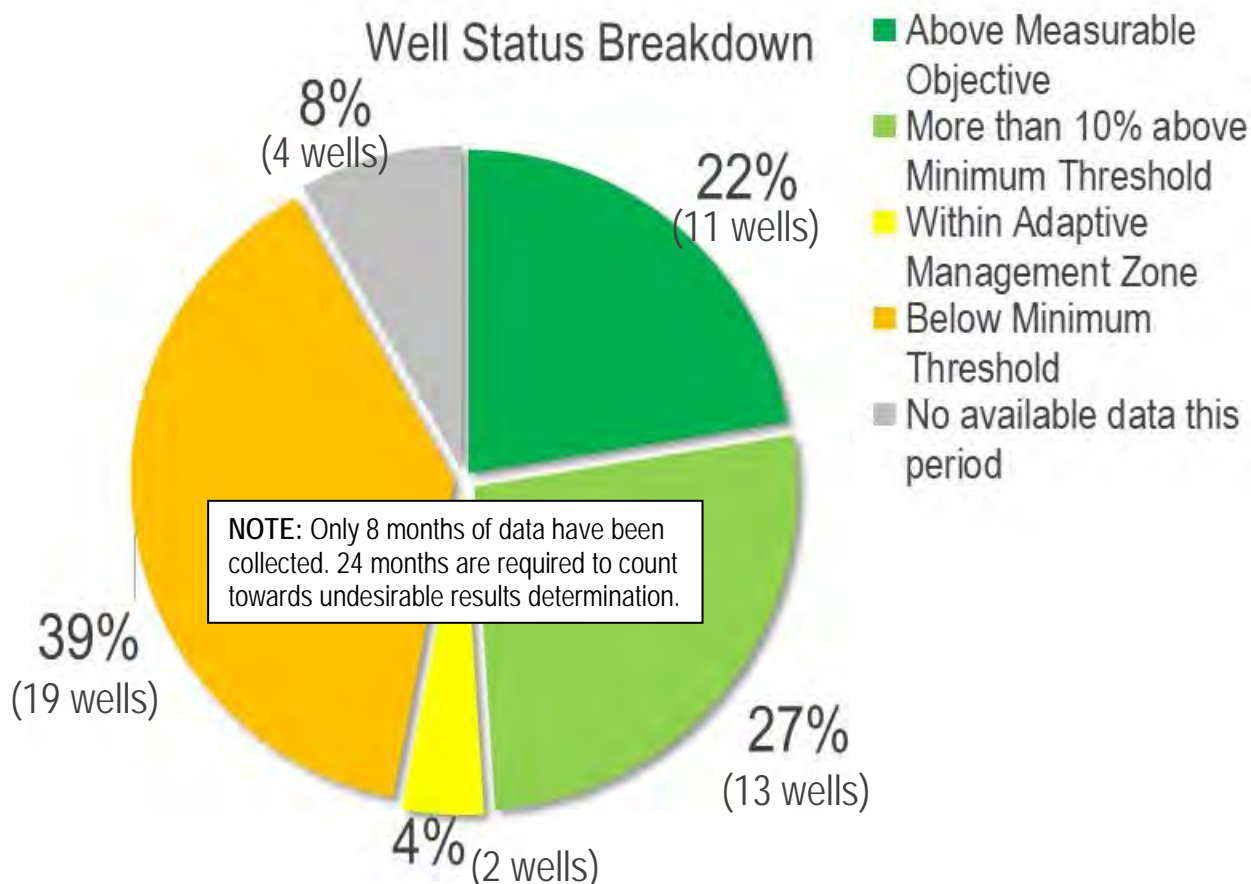
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1. INTRODUCTION

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



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).

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 be 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	Jan-21	Feb-21	Mar-21	Last Year		Annual Elevation Change
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/Year	
72	Central	-	2025	1982			
74	Central	1945	1946	1939			
77	Central	1822	1823	1821			
91	Central	1822	1822	1823			
95	Central	1854	1842	1855			
96	Central	2272	2272	2272			
98	Central	-	-	-			
99	Central	2222	2213	2181			
102	Central	1776	1774	1774			
103	Central	1994	2003	2004			
112	Central	-	2055	2054			
114	Central	-	1879	1879			
316	Central	1820	1821	1822			
317	Central	1820	1822	1822			
322	Central	2222	2213	2182			
324	Central	2220	2213	2186			
325	Central	2222	2217	2206			
420	Central	1821	1821	1820			
421	Central	1819	1820	1818			
474	Central	-	2204	2201			

Well	Region	Jan-21	Feb-21	Mar-21	Last Year		Annual Elevation Change
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/Year	
568	Central	1869	1869	1869			
604	Central	1654	1659	1665			
608	Central	1790	1795	1791			
609	Central	1807	1805	1795			
610	Central	1818	1823	1820			
612	Central	1801	1801	1801			
613	Central	1804	1804	1804			
615	Central	1821	1820	1819			
629	Central	1822	1823	1821			
633	Central	1801	1806	1798			
62	Eastern	2763	2764	2766			
85	Eastern	2845	2846	2847			
100	Eastern	2853	2853	2854			
101	Eastern	2634	2636	2635			
841	Northwestern	1686	1688	1689			
845	Northwestern	1650	1651	1651			
2	Southeastern	3690	3690	-			
89	Southeastern	3431	3431	3431			
106	Western	2184	2184	2183			
107	Western	2399	2395	2395			
117	Western	-	-	-			

Well	Region	Jan-21	Feb-21	Mar-21	Last Year		Annual Elevation Change
		GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	GWL (ft. msl)	Month/Year	
118	Western	2214	2214	2213			
124	Western	-	-	-			
571	Western	2188	2188	2187			
573	Western	-	2014	2013			
830	Far-West Northwestern	1515	-	1515			
832	Far-West Northwestern	1593	1591	1592			
833	Far-West Northwestern	-	-	1430			
836	Far-West Northwestern	1450	1450	1449			

Note: Previous year values and annual elevation changes will be reported after the CBGSA monitoring program has completed a full year of monitoring.

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	189	3/22/2021	169	165	124	790	Below Minimum Threshold (1 month)	No
74	Central	254	3/22/2021	256	255	243		More than 10% above Minimum Threshold	No
77	Central	465	3/22/2021	450	445	400	980	Below Minimum Threshold (7 months)	No
91	Central	651	3/22/2021	625	620	576	980	Below Minimum Threshold (7 months)	No
95	Central	594	3/22/2021	573	570	538	805	Below Minimum Threshold (8 months)	No
96	Central	334	3/23/2021	333	332	325	500	Below Minimum Threshold (4 months)	No
98	Central	-	N/A	450	449	439	750	No available data this period	No
99	Central	332	3/23/2021	311	310	300	750	Below Minimum Threshold (1 months)	No
102	Central	272	3/23/2021	235	231	197		Below Minimum Threshold (3 months)	No
103	Central	285	3/22/2021	290	285	235	1030	Within Adaptive Management Zone	No
112	Central	85	3/22/2021	87	87	85	441	Above Measurable Objective	No
114	Central	46	3/22/2021	47	47	45	58	More than 10% above Minimum Threshold	No
316	Central	652	3/22/2021	623	618	574	830	Below Minimum Threshold (7 months)	No
317	Central	652	3/22/2021	623	618	573	700	Below Minimum Threshold (7 months)	No
322	Central	331	3/23/2021	307	306	298	850	Below Minimum Threshold (1 months)	No
324	Central	327	3/23/2021	311	310	299	560	Below Minimum Threshold (1 months)	No
325	Central	307	3/23/2021	300	299	292	380	Below Minimum Threshold (1 months)	No
420	Central	466	3/22/2021	450	445	400	780	Below Minimum Threshold (7 months)	No
421	Central	468	3/22/2021	446	441	398	620	Below Minimum Threshold (7 months)	No
474	Central	168	3/22/2021	188	186	169	213	Above Measurable Objective	No

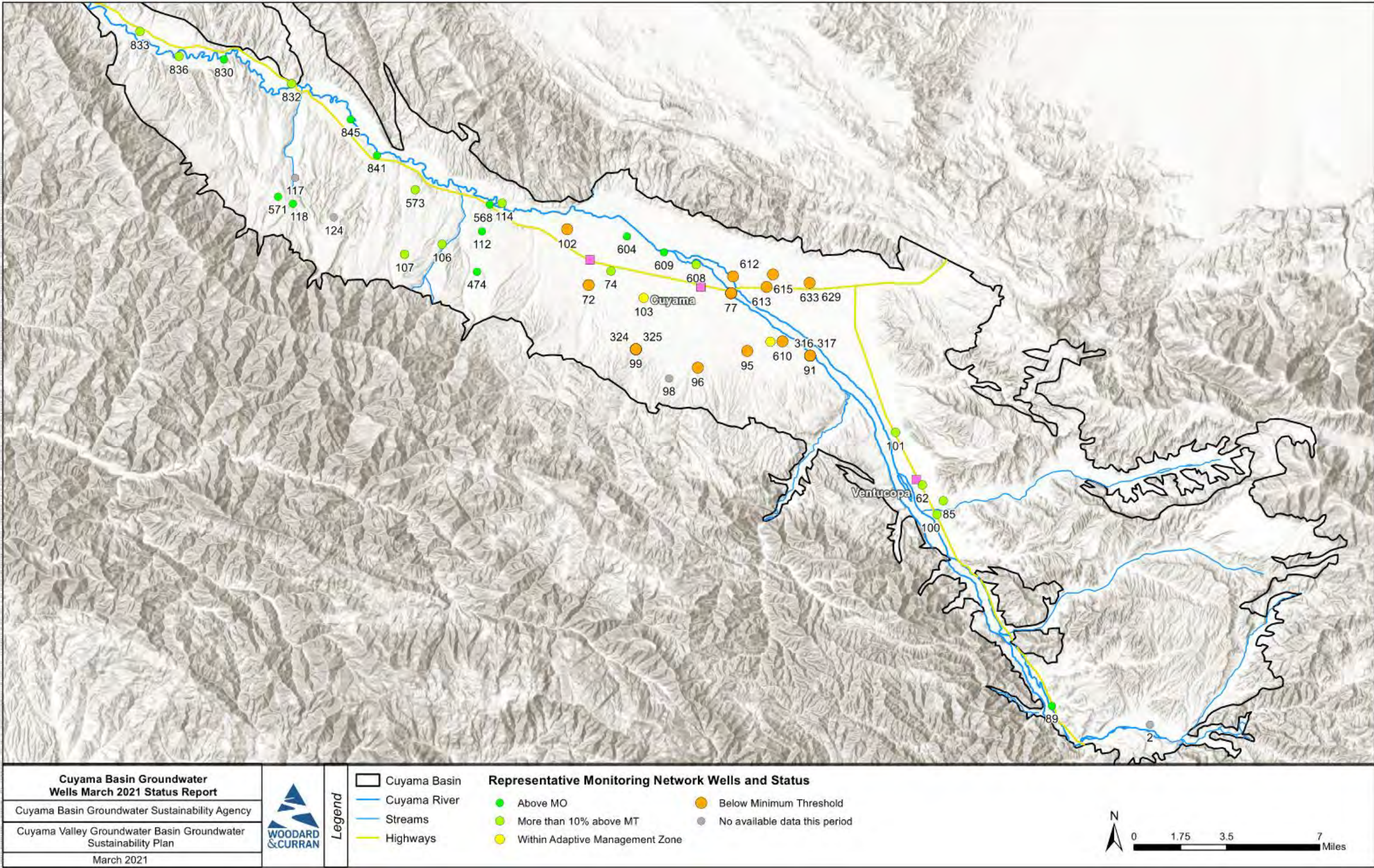
Well	Region	Current Month		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Well Depth	Status	GSA Action Required?
		GWL (DTW)	Month/Year						
568	Central	36	3/22/2021	37	37	36	188	Above Measurable Objective	No
604	Central	460	3/23/2021	526	522	487	924	Above Measurable Objective	No
608	Central	433	3/23/2021	436	433	407	745	More than 10% above Minimum Threshold	No
609	Central	372	3/23/2021	458	454	421	970	Above Measurable Objective	No
610	Central	622	3/23/2021	621	618	591	780	Below Minimum Threshold (1 months)	No
612	Central	465	3/23/2021	463	461	440	1070	Below Minimum Threshold (4 months)	No
613	Central	526	3/23/2021	503	500	475	830	Below Minimum Threshold (5 months)	No
615	Central	508	3/23/2021	500	497	468	865	Below Minimum Threshold (4 months)	No
629	Central	558	3/23/2021	559	556	527	1000	Within Adaptive Management Zone	No
633	Central	566	3/23/2021	547	542	493	1000	Below Minimum Threshold (8 months)	No
62	Eastern	155	3/22/2021	182	178	142	212	More than 10% above Minimum Threshold	No
85	Eastern	200	3/22/2021	233	225	147	233	More than 10% above Minimum Threshold	No
100	Eastern	150	3/22/2021	181	175	125	284	More than 10% above Minimum Threshold	No
101	Eastern	106	3/22/2021	111	108	81	200	More than 10% above Minimum Threshold	No
841	Northwestern	72	3/15/2021	203	198	153	600	Above Measurable Objective	No
845	Northwestern	61	3/15/2021	203	198	153	380	Above Measurable Objective	No
2	Southeastern	-	N/A	72	70	55	73	No available data this period	No
89	Southeastern	30	3/22/2021	64	62	44	125	Above Measurable Objective	No
106	Western	144	3/22/2021	154	153	141	228	More than 10% above Minimum Threshold	No
107	Western	87	3/22/2021	91	89	72	200	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						
117	Western	-	N/A	160	159	151	212	No available data this period	No
118	Western	57	3/22/2021	124	117	57	500	Above Measurable Objective	No
124	Western	-	N/A	73	71	57	161	No available data this period	No
571	Western	120	3/23/2021	144	142	121	280	Above Measurable Objective	No
573	Western	71	3/22/2021	118	113	68	404	More than 10% above Minimum Threshold	No
830	Far-West Northwestern	56	3/22/2021	59	59	56	77	Above Measurable Objective	No
832	Far-West Northwestern	38	3/22/2021	45	44	30	132	More than 10% above Minimum Threshold	No
833	Far-West Northwestern	27	3/22/2021	96	89	24	504	More than 10% above Minimum Threshold	No
836	Far-West Northwestern	37	3/22/2021	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

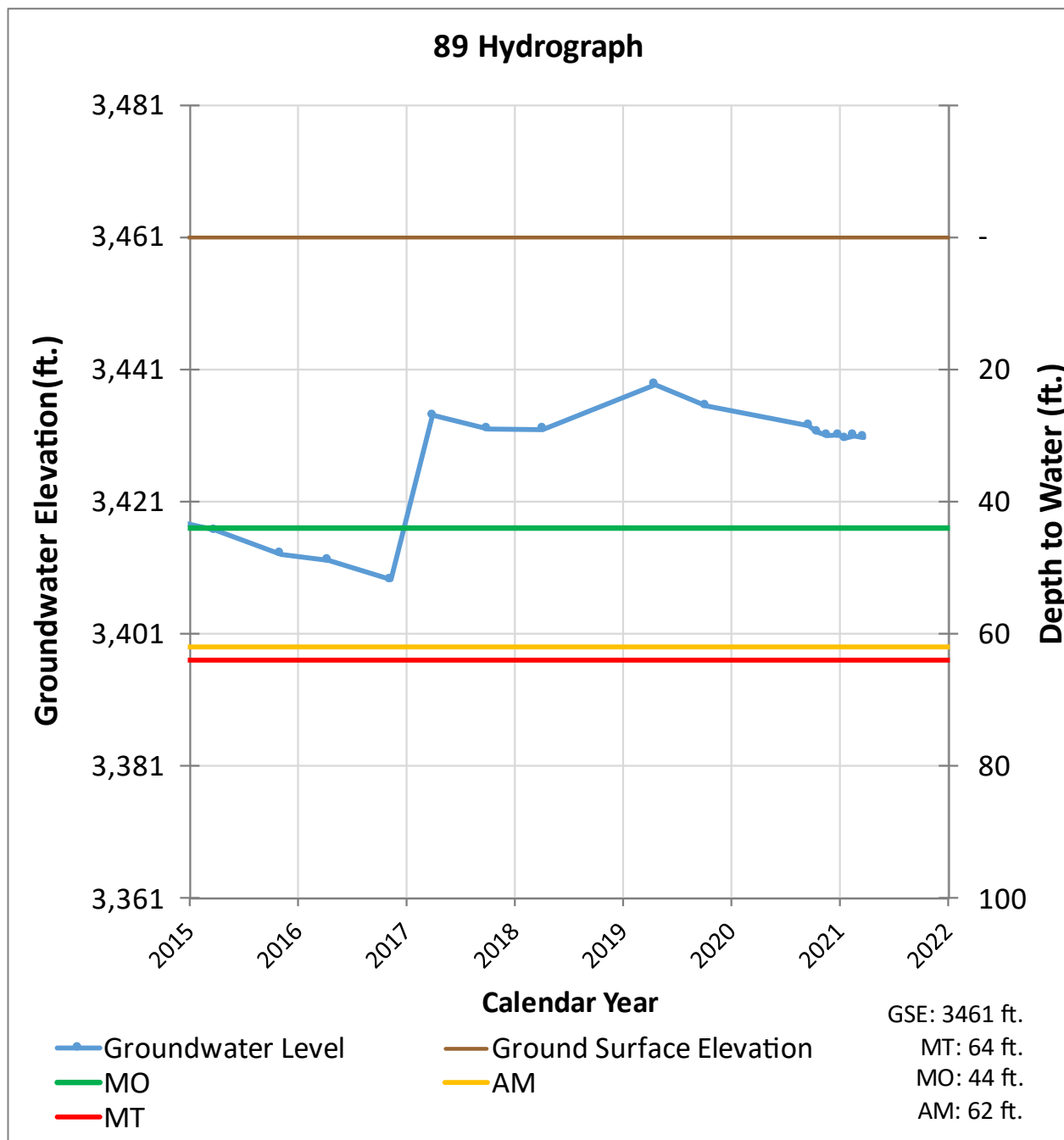


Figure 3: Eastern Region – Well 62

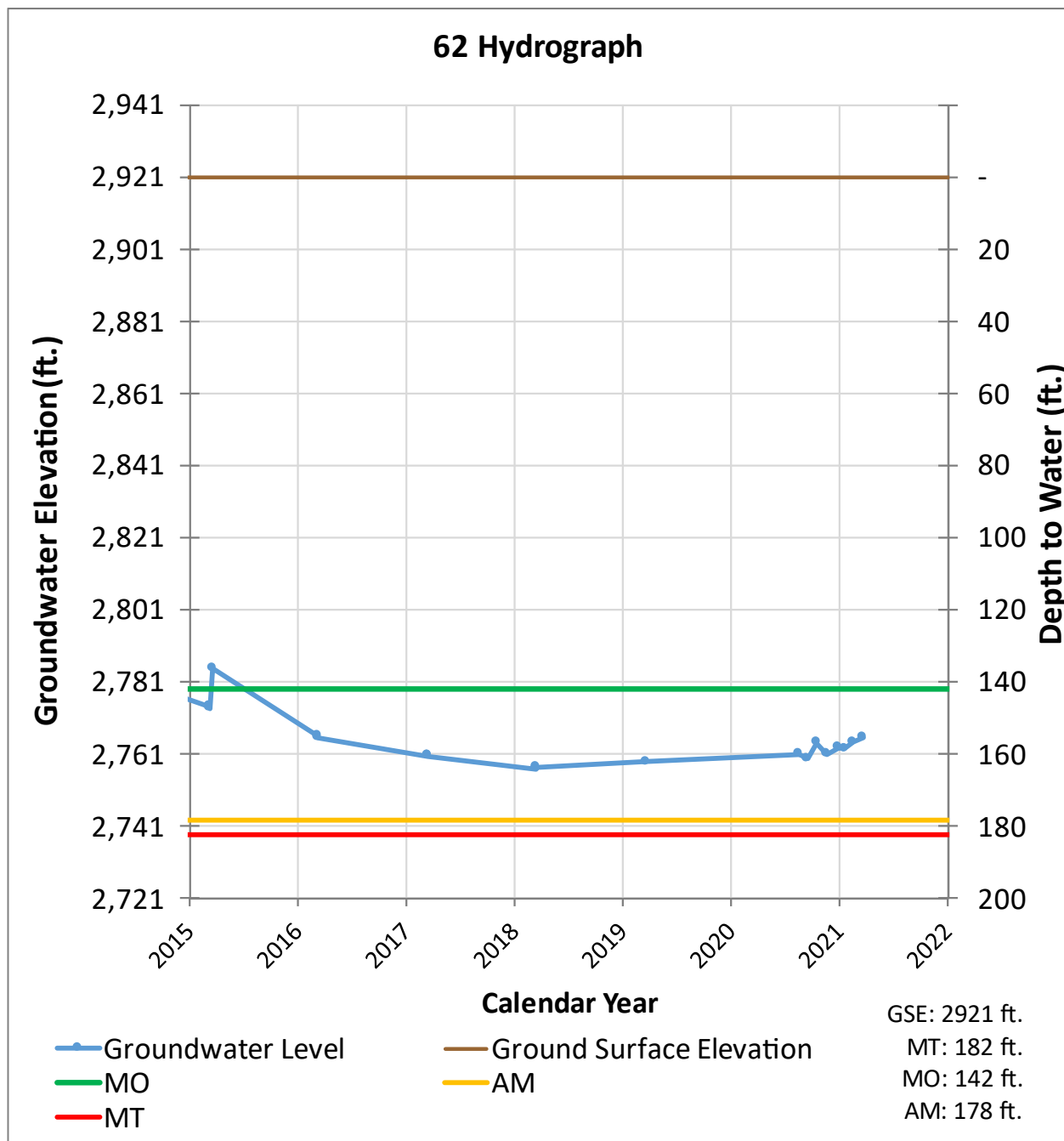


Figure 4: Central Region – Well 91

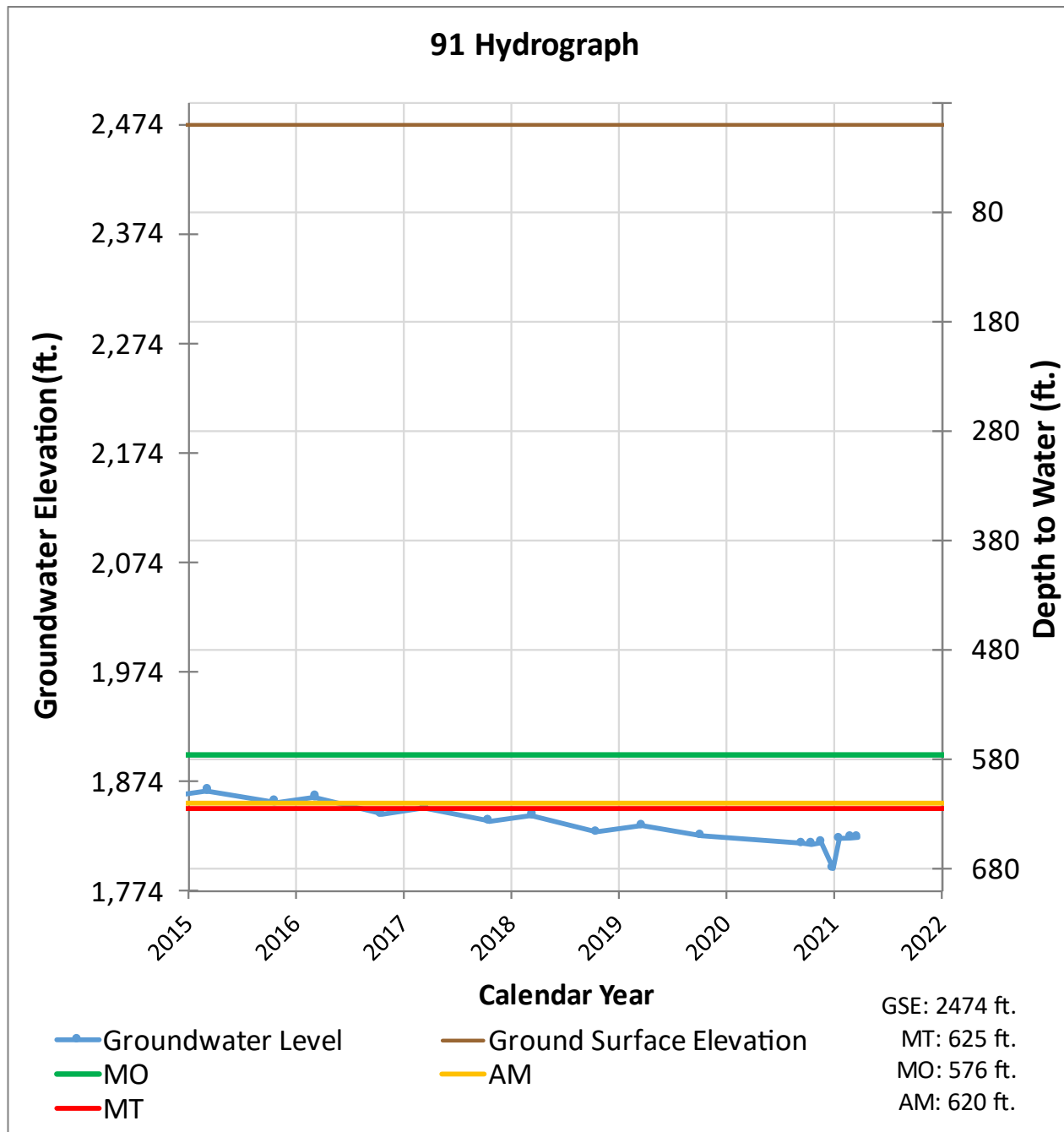


Figure 5: Central Region – Well 74

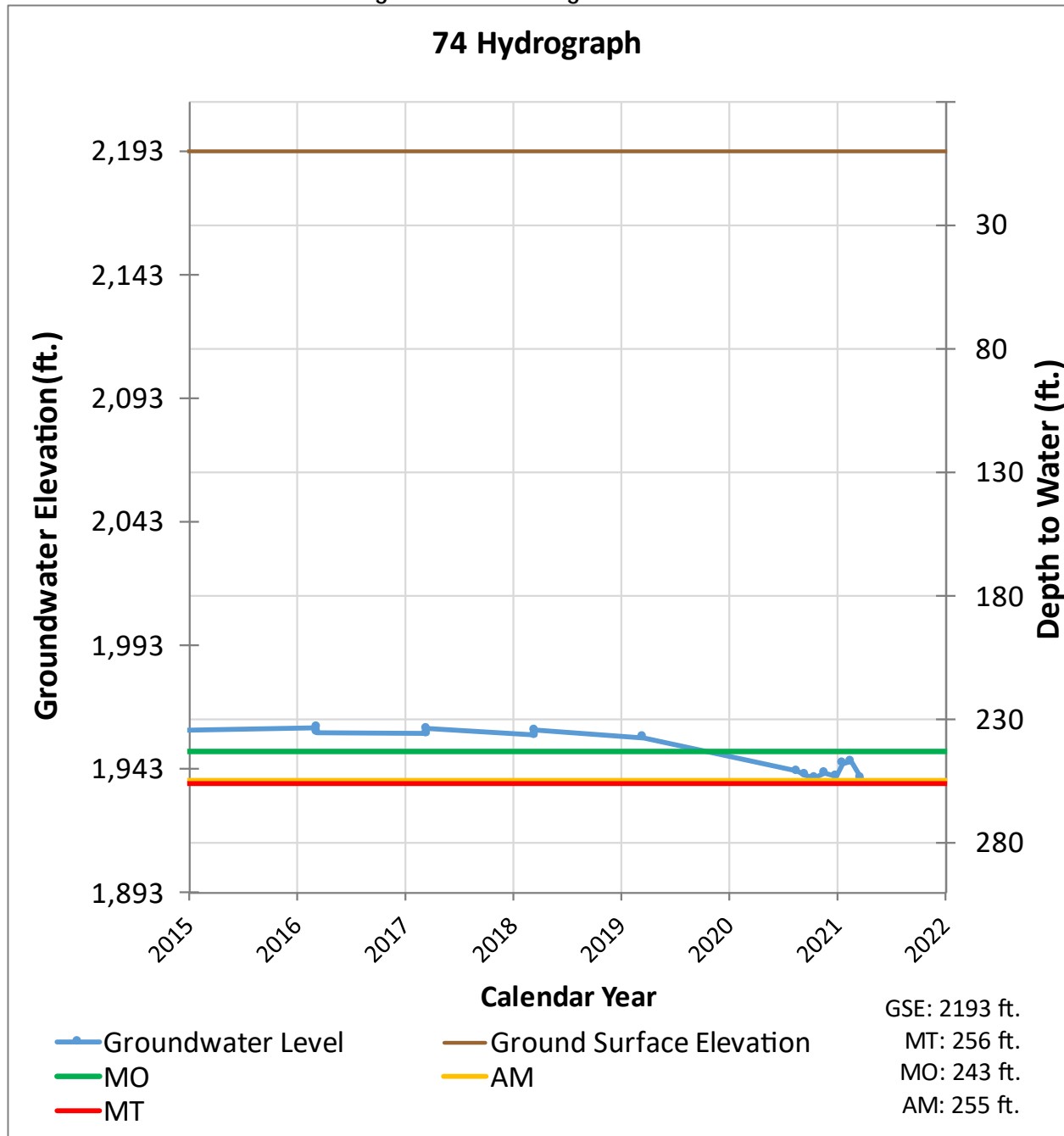


Figure 6: Western Region – Well 571

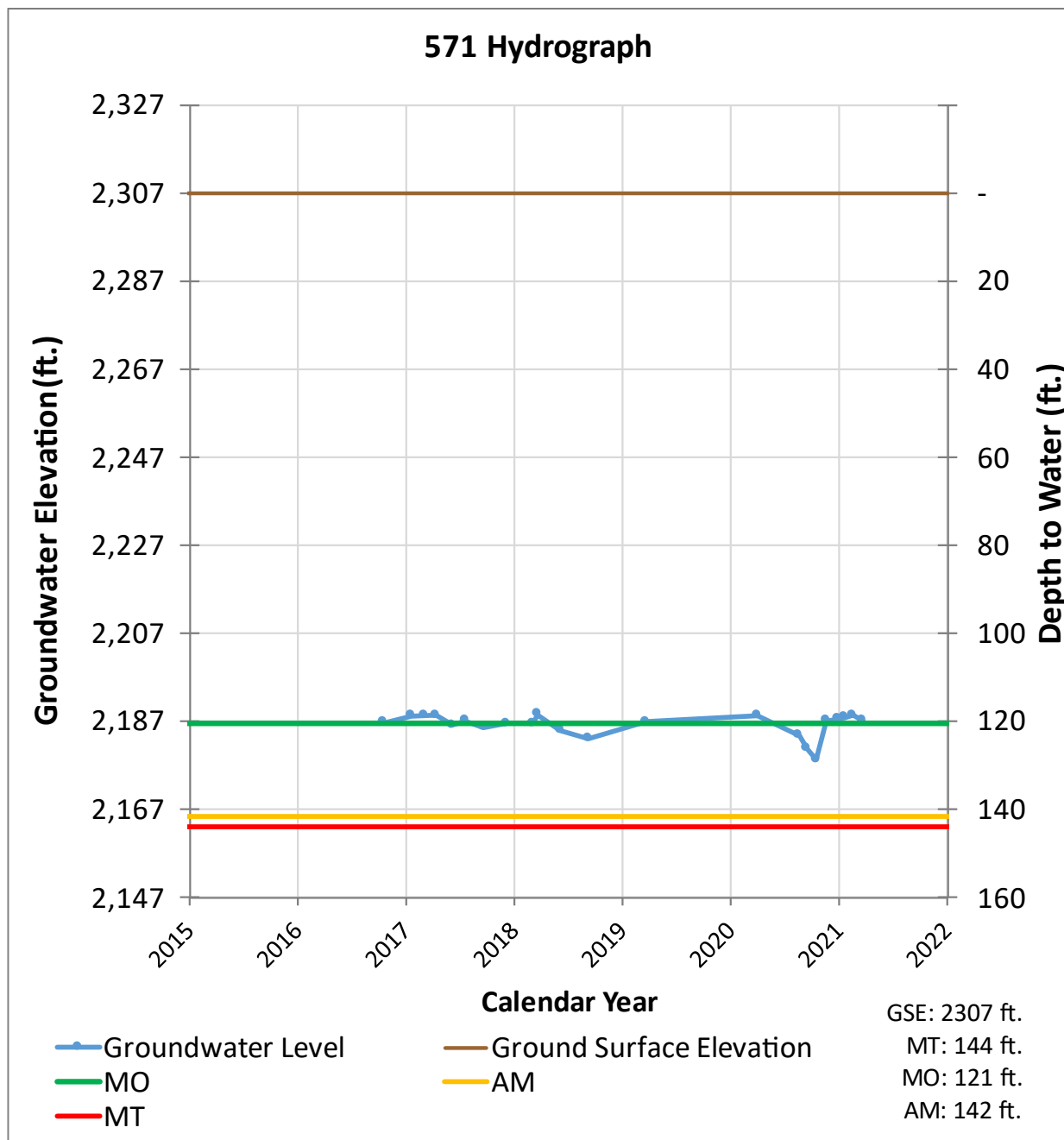
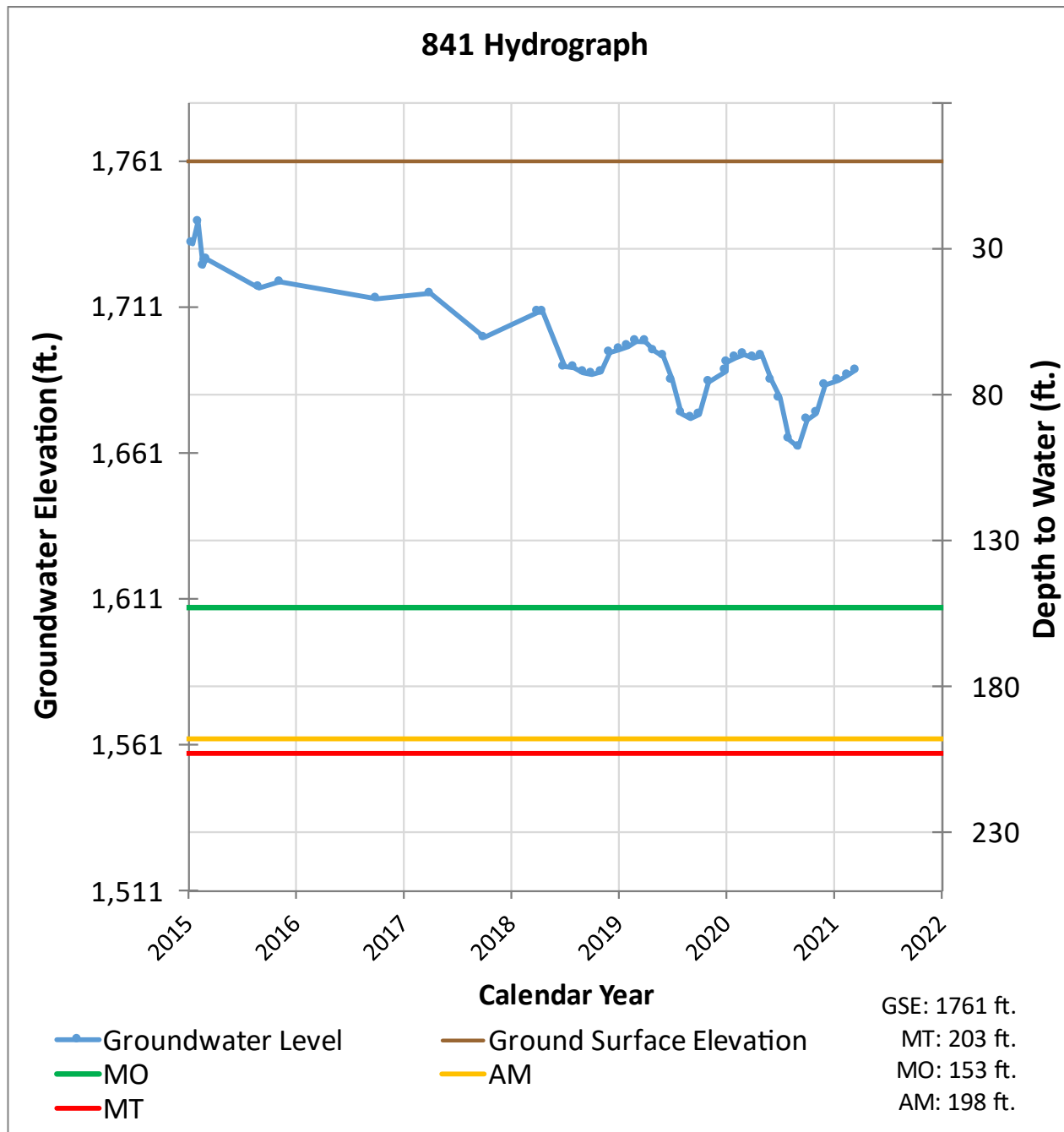


Figure 7: Northwestern Region – Well 841



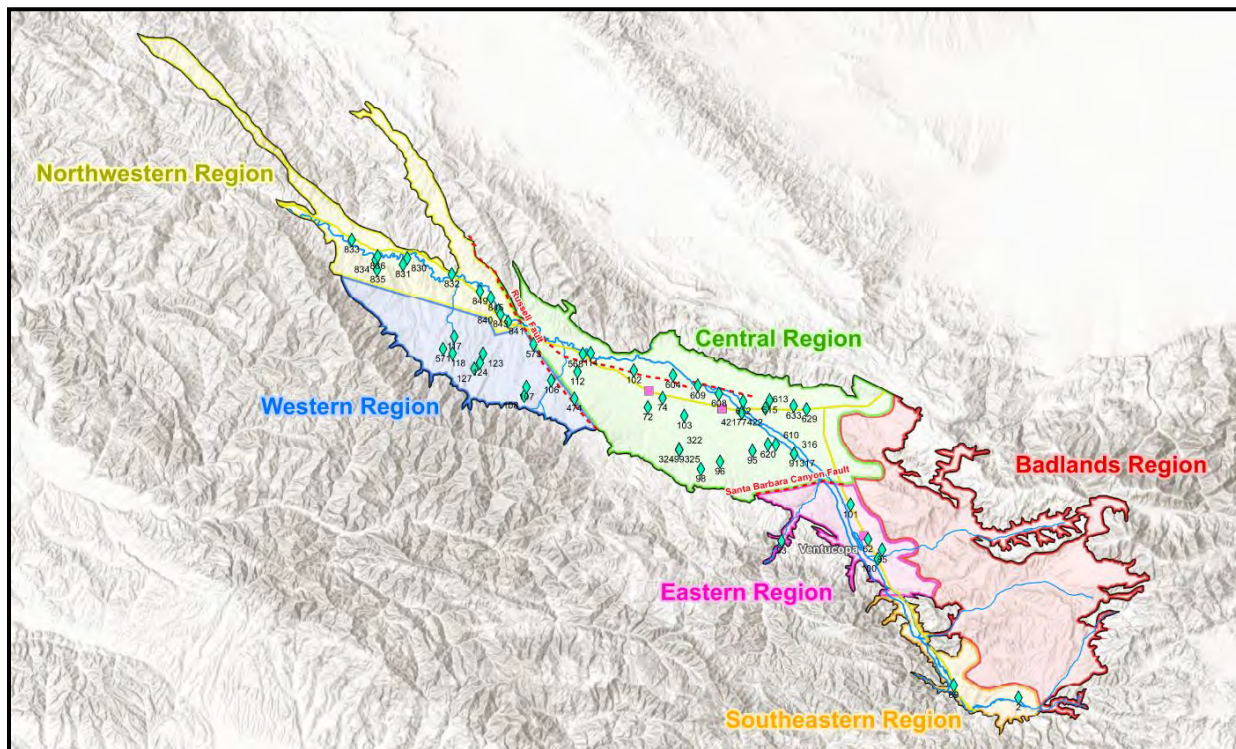


Figure 8: Threshold Regions in the Cuyama Groundwater Basin

5. MONITORING NETWORK UPDATES

As shown in the Summary Statistics Section, there are 4 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, 117, 124



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COMMITMENT & INTEGRITY DRIVE RESULTS



TO: Standing Advisory Committee
Agenda Item No. 6e

FROM: Brian Van Lienden, Woodard & Curran

DATE: April 29, 2021

SUBJECT: Update on Annual Groundwater Quality Report

Issue

Update on Annual Groundwater Quality Report.

Recommended Motion

None – information only.

Discussion

An update regarding the groundwater quality monitoring network and select well results for total dissolved solids (TDS) is provided as Attachment 1. The detailed 2020 Annual Water Quality Report is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

Annual Groundwater Quality Report

May 5, 2021



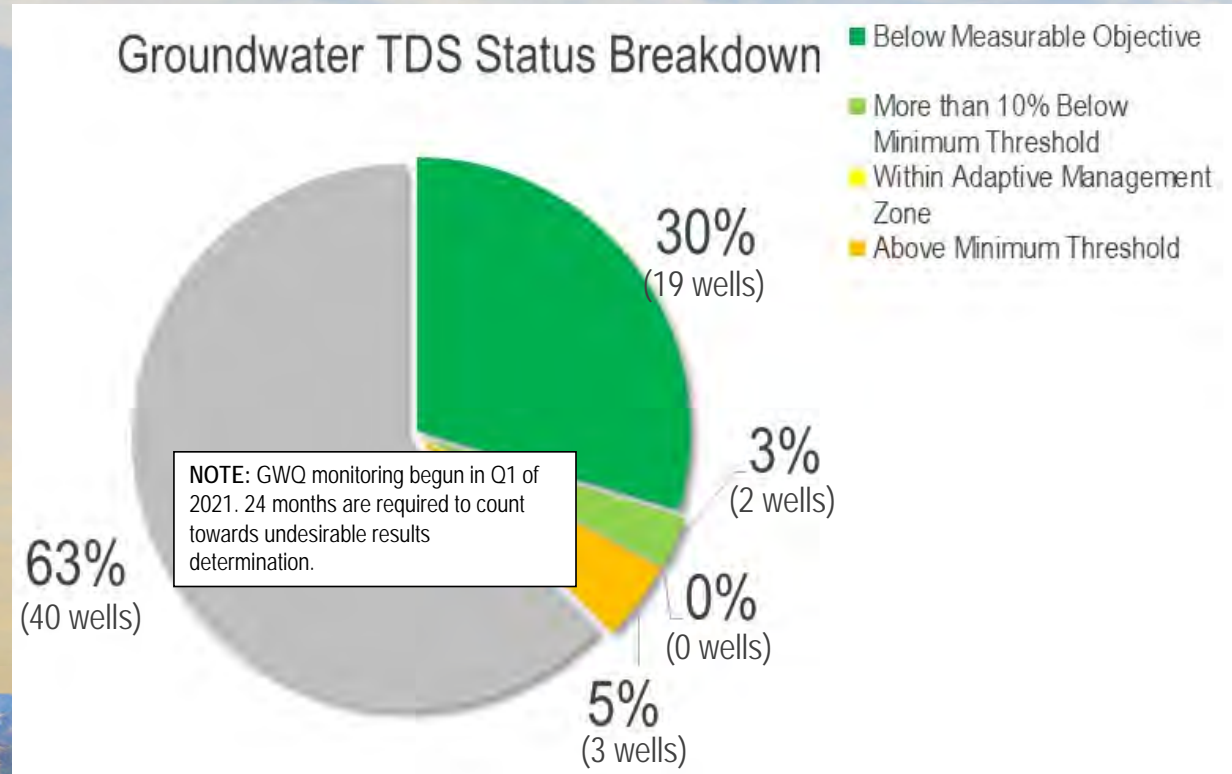
Groundwater Quality Monitoring Network Implementation – Status Update

69

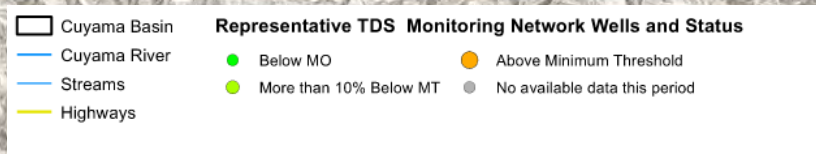
- TDS monitoring at water quality wells was performed during February and March and is included in Board packet monitoring summary report
- 24 of 64 representative monitoring wells have levels measurements
 - Most of the remainder are missing due to lack of landowner agreement or contact information
- In most wells, it has been 8 or more years since the last TDS measurement

Summary of Groundwater Quality Levels as Compared To Sustainability Criteria

- 3 wells (12.5% of measured wells) are currently above minimum threshold (MT)

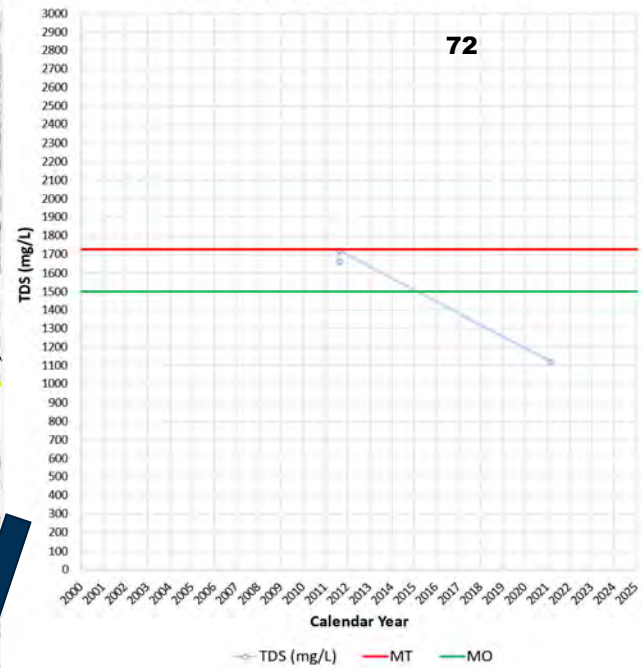


Current Status of Representative Monitoring Wells

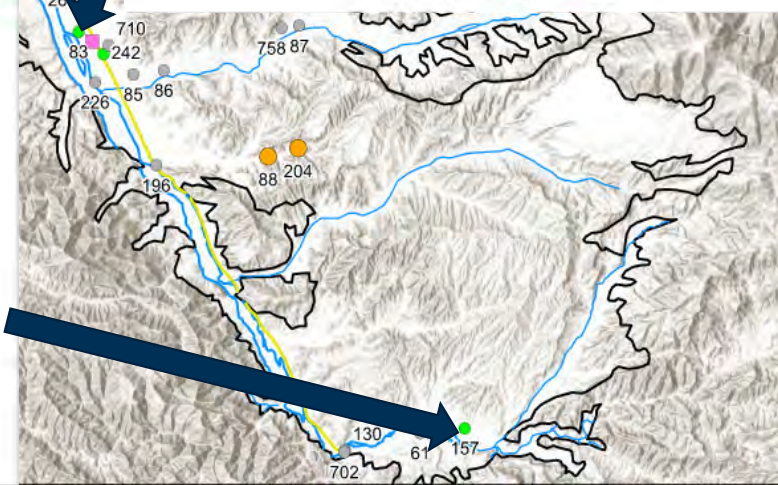


Updated TDS for Selected Monitoring Wells

Well 83 Total Dissolved Solids

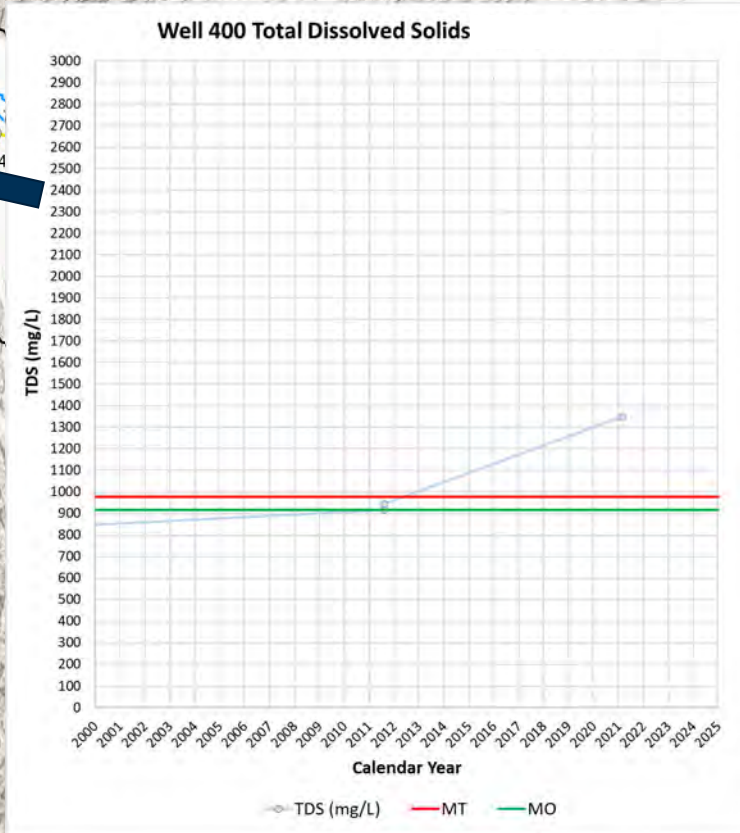
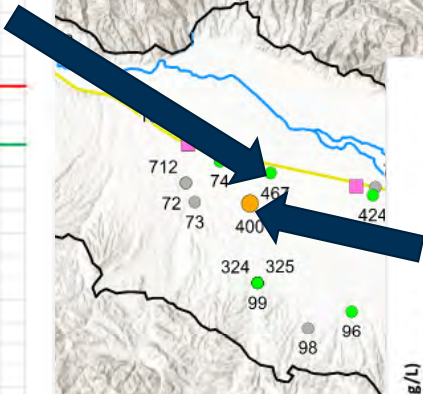
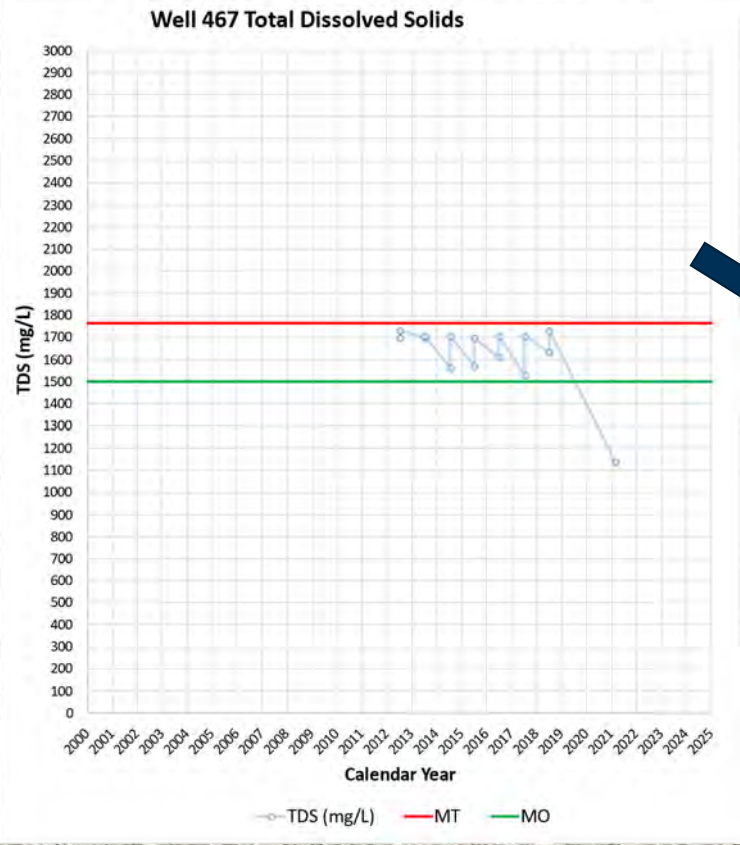


Well 157 Total Dissolved Solids



Updated TDS for Selected Monitoring Wells

76



702 61 107

Groundwater Quality Monitoring Network Implementation – Next Steps

74

- Identify additional wells to fill the data gaps using current budgeted funds for P&P
- Investigate changes in TDS measurements
- Consider appropriate modifications to the water quality monitoring plan (if necessary)



**GROUNDWATER
QUALITY
CONDITIONS
REPORT –
CUYAMA VALLEY
GROUNDWATER
BASIN**

February-March 2021

801 T Street
Sacramento, CA.
916.999.8700

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

**Cuyama Valley
Groundwater
Sustainability Agency**

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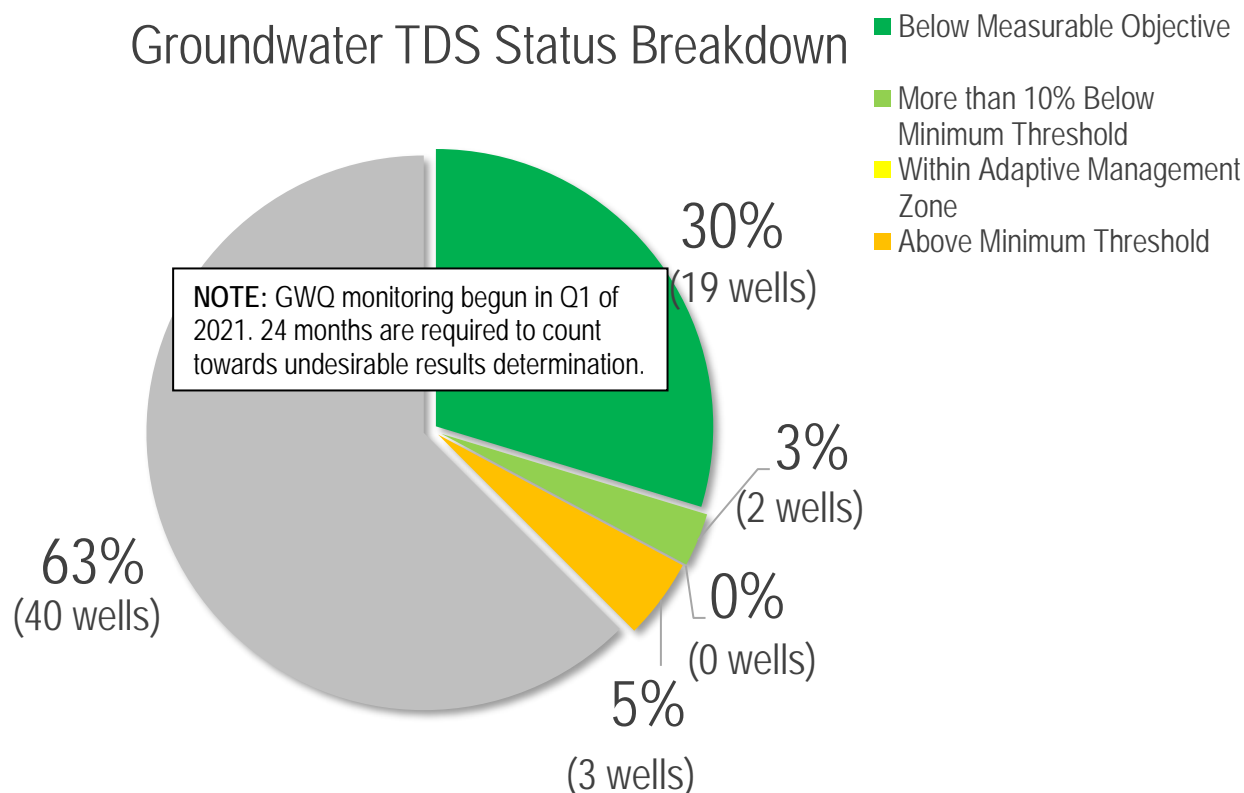
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1. INTRODUCTION

This report is intended to provide an update on the current groundwater quality as total dissolved solids (TDS) conditions in the Cuyama Valley Groundwater Basin. TDS measurements were taken during February and March, 2021. This work is completed by the Cuyama Basin Groundwater Sustainability Agency (CBGSA), in compliance with the Sustainable Groundwater Management Act.

2. SUMMARY STATISTICS



As outlined in the GSP, undesirable results for degraded water quality occurs, “when 30 percent of representative monitoring points... fall below their minimum groundwater elevation threshold for two consecutive years.” (Cuyama GSP, pg. 3-4).

3. CURRENT CONDITIONS

Table 1 includes the most recent TDS measurements taken in the Cuyama Basin from representative wells included in the Cuyama GSP Groundwater Quality Monitoring Network, which were taken during February and March, 2021. Per the plan described in the GSP, it is the intention of the GSA to take TDS measurements once per year. 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 be incorporated into the Cuyama DMS, which may be accessed at <https://opti.woodardcurran.com/cuyama/login.php>.

Table 1: Recent Total Dissolved Solids Measurements for Representative Monitoring Network

Well	Region	N/A	N/A	Q1, 2021
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
61	Southeastern			-
72	Central			559
73	Central			-
74	Central			1260
76	Central			-
77	Central			1070
79	Central			1790
81	Central			-
83	Eastern			1120
85	Eastern			-
86	Eastern			-
87	Badlands			-
88	Badlands			330
90	Central			-
91	Central			-
94	Central			964
95	Central			1290
96	Central			1210
98	Central			-
99	Central			1010
101	Eastern			-
102	Central			905
130	Southeastern			-
131	Eastern			-
157	Southeastern			1360
196	Eastern			-
204	Badlands			826
226	Eastern			-
227	Eastern			-
242	Eastern			826

Well	Region	N/A	N/A	Q1, 2021
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
269	Eastern			-
309	Central			-
316	Central			-
317	Central			692
318	Central			-
322	Central			1120
324	Central			488
325	Central			746
400	Central			1350
420	Central			-
421	Central			797
422	Central			-
424	Central			1270
467	Central			1140
568	Central			872
702	Southeastern			-
703	Northwestern			-
710	Eastern			-
711	Central			872
712	Central			-
713	Central			-
721	Central			-
758	Badlands			-
840	Northwestern			-
841	Northwestern			-
842	Northwestern			-
843	Northwestern			-
844	Northwestern			-
845	Northwestern			-
846	Northwestern			-
847	Northwestern			-

Well	Region	N/A	N/A	Q1, 2021
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
848	Northwestern			-
849	Northwestern			-
850	Northwestern			-

Note: Previous year values and annual changes in TDS will be reported after the CBGSA monitoring program has completed a second round of monitoring in the next fiscal year.

Table 2: Well Status Related to Thresholds

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
61	Southeastern	-	-	615	612	585	No available data this period	No
72	Central	559	2/25/2021	1023	1020	996	Below Measurable Objective	No
73	Central	-	-	856	851	805	No available data this period	No
74	Central	1260	2/25/2021	1833	1800	1500	Below Measurable Objective	No
76	Central			2307	2226	1500	No available data this period	No
77	Central	1070	2/16/2021	1592	1583	1500	Below Measurable Objective	No
79	Central	1790	3/17/2021	2320	2238	1500	More than 10% Below Minimum Threshold	No
81	Central	-	-	2788	2659	1500	No available data this period	No
83	Eastern	1120	3/17/2021	1726	1703	1500	Below Measurable Objective	No
85	Eastern	-	-	1391	1314	618	No available data this period	No
86	Eastern	-	-	975	974	969	No available data this period	No
87	Badlands	-	-	1165	1157	1090	No available data this period	No
88	Badlands	330	2/25/2021	302	302	302	Above Minimum Threshold	No
90	Central	-	-	1593	1584	1500	No available data this period	No
91	Central	-	-	1487	1479	1410	No available data this period	No
94	Central	964	3/17/2021	1245	1226	1050	Below Measurable Objective	No
95	Central	1290	2/15/2021	1866	1829	1500	Below Measurable Objective	No
96	Central	1210	2/25/2021	1632	1619	1500	Below Measurable Objective	No
98	Central	-	-	2400	2310	1500	No available data this period	No
99	Central	1010	2/16/2021	1562	1555	1490	Below Measurable Objective	No

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
101	Eastern	-	-	1693	1674	1500	No available data this period	No
102	Central	905	2/25/2021	2351	2266	1500	Below Measurable Objective	No
130	Southeastern	-	-	1855	1820	1500	No available data this period	No
131	Eastern	-	-	1982	1934	1500	No available data this period	No
157	Southeastern	1360	3/17/2021	2360	2274	1500	Below Measurable Objective	No
196	Eastern	-	-	904	898	851	No available data this period	No
204	Badlands	826	2/26/2021	269	267	253	Above Minimum Threshold	No
226	Eastern	-	-	1844	1810	1500	No available data this period	No
227	Eastern	-	-	2230	2157	1500	No available data this period	No
242	Eastern	826	2/26/2021	1518	1513	1470	Below Measurable Objective	No
269	Eastern	-	-	1702	1682	1500	No available data this period	No
309	Central	-	-	1509	1499	1410	No available data this period	No
316	Central	-	-	1468	1459	1380	No available data this period	No
317	Central	692	2/25/2021	1337	1329	1260	Below Measurable Objective	No
318	Central	-	-	1152	1145	1080	No available data this period	No
322	Central	1120	2/16/2021	1386	1382	1350	Below Measurable Objective	No
324	Central	488	2/25/2021	777	774	746	Below Measurable Objective	No
325	Central	746	2/25/2021	1569	1559	1470	Below Measurable Objective	No
400	Central	1350	3/17/2021	976	970	918	Above Minimum Threshold	No
420	Central	-	-	1490	1484	1430	No available data this period	No

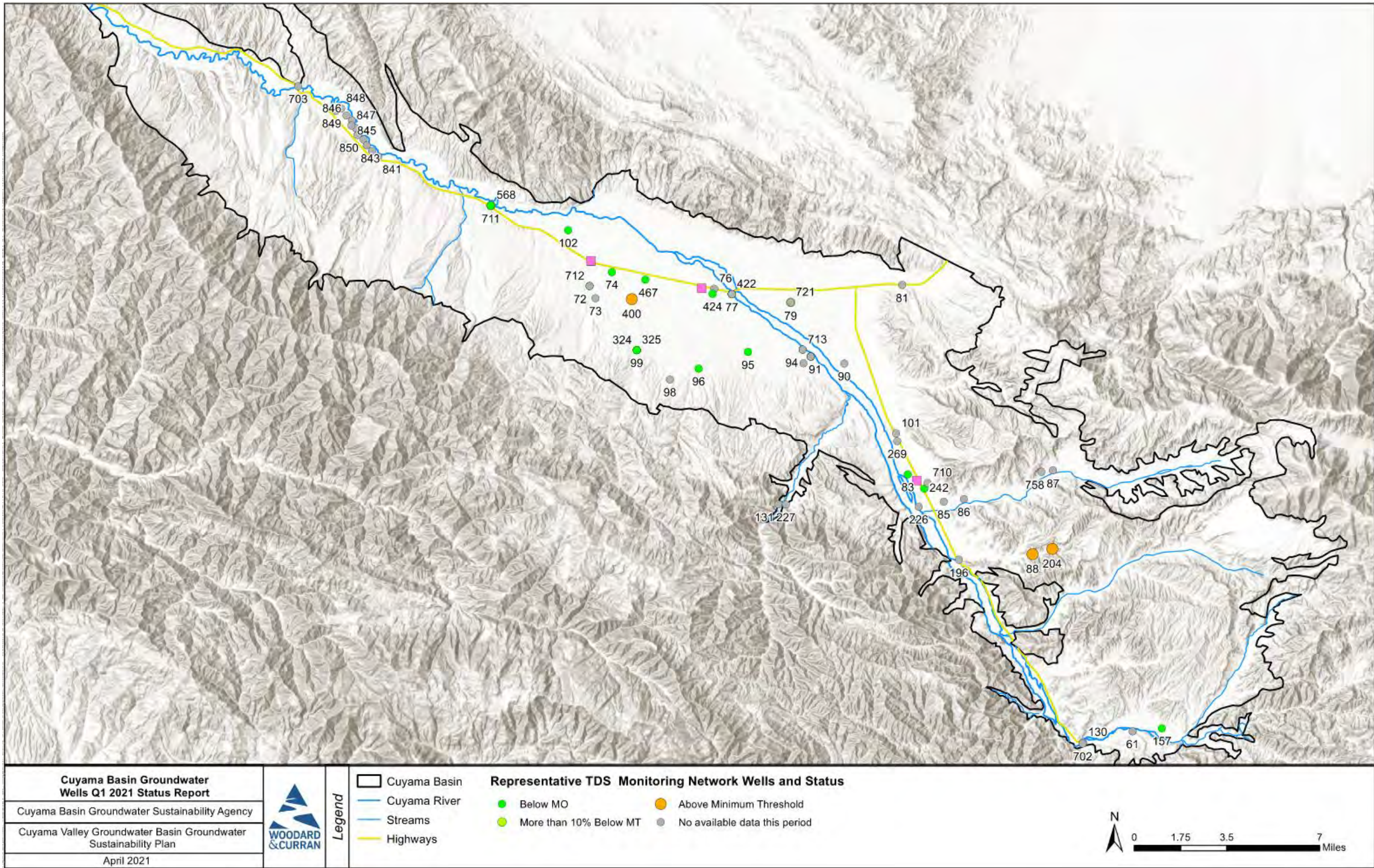
Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
421	Central	797	2/25/2021	1616	1604	1500	Below Measurable Objective	No
422	Central	-	-	1942	1898	1500	No available data this period	No
424	Central	1270	2/25/2021	1588	1579	1500	Below Measurable Objective	No
467	Central	1140	3/17/2021	1764	1738	1500	Below Measurable Objective	No
568	Central	872	2/15/2021	1191	1159	871	More than 10% Below Minimum Threshold	No
702	Southeastern	-	-	2074	1878	110	No available data this period	No
703	Northwestern	-	-	4097	3727	400	No available data this period	No
710	Eastern	-	-	1040	1040	1040	No available data this period	No
711	Central	872	2/15/2021	928	928	928	Below Measurable Objective	No
712	Central	-	-	978	977	977	No available data this period	No
713	Central	-	-	1200	1200	1200	No available data this period	No
721	Central	-	-	2170	2103	1500	No available data this period	No
758	Badlands	-	-	954	949	900	No available data this period	No
840	Northwestern	-	-	559	559	559	No available data this period	No
841	Northwestern	-	-	561	561	561	No available data this period	No
842	Northwestern	-	-	547	547	547	No available data this period	No
843	Northwestern	-	-	569	569	569	No available data this period	No
844	Northwestern	-	-	481	481	481	No available data this period	No
845	Northwestern	-	-	1250	1250	1250	No available data this period	No
846	Northwestern	-	-	918	918	918	No available data this period	No

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
847	Northwestern	-	-	480	480	480	No available data this period	No
848	Northwestern	-	-	674	674	674	No available data this period	No
849	Northwestern	-	-	1780	1752	1500	No available data this period	No
850	Northwestern	-	-	472	472	472	No available data this period	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 Quality Representative Wells and Status



4. WATER QUALITY TIME SERIES FIGURES

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

Figure 2: Southeast Region – Well 157

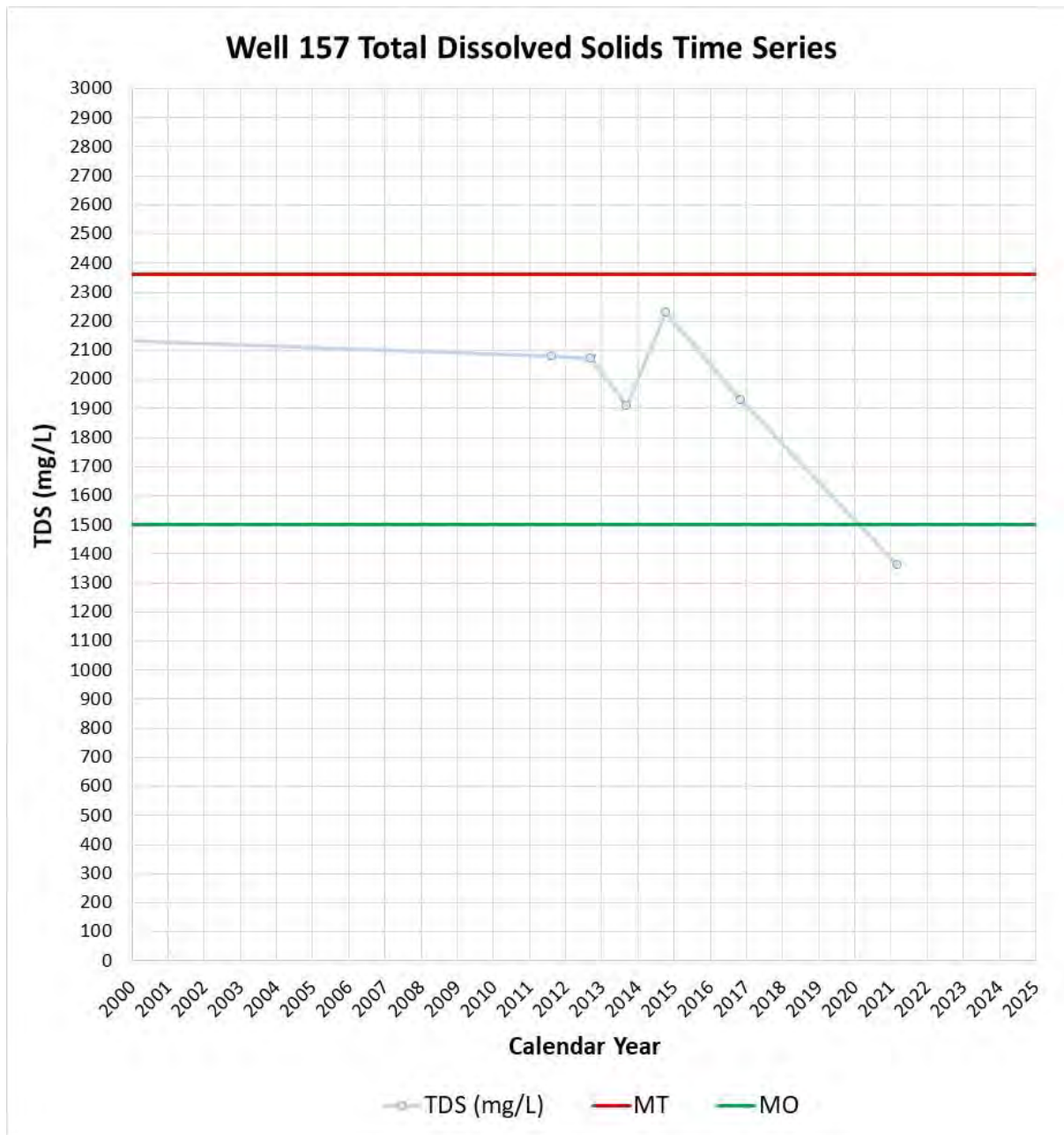


Figure 3: Eastern Region – Well 83

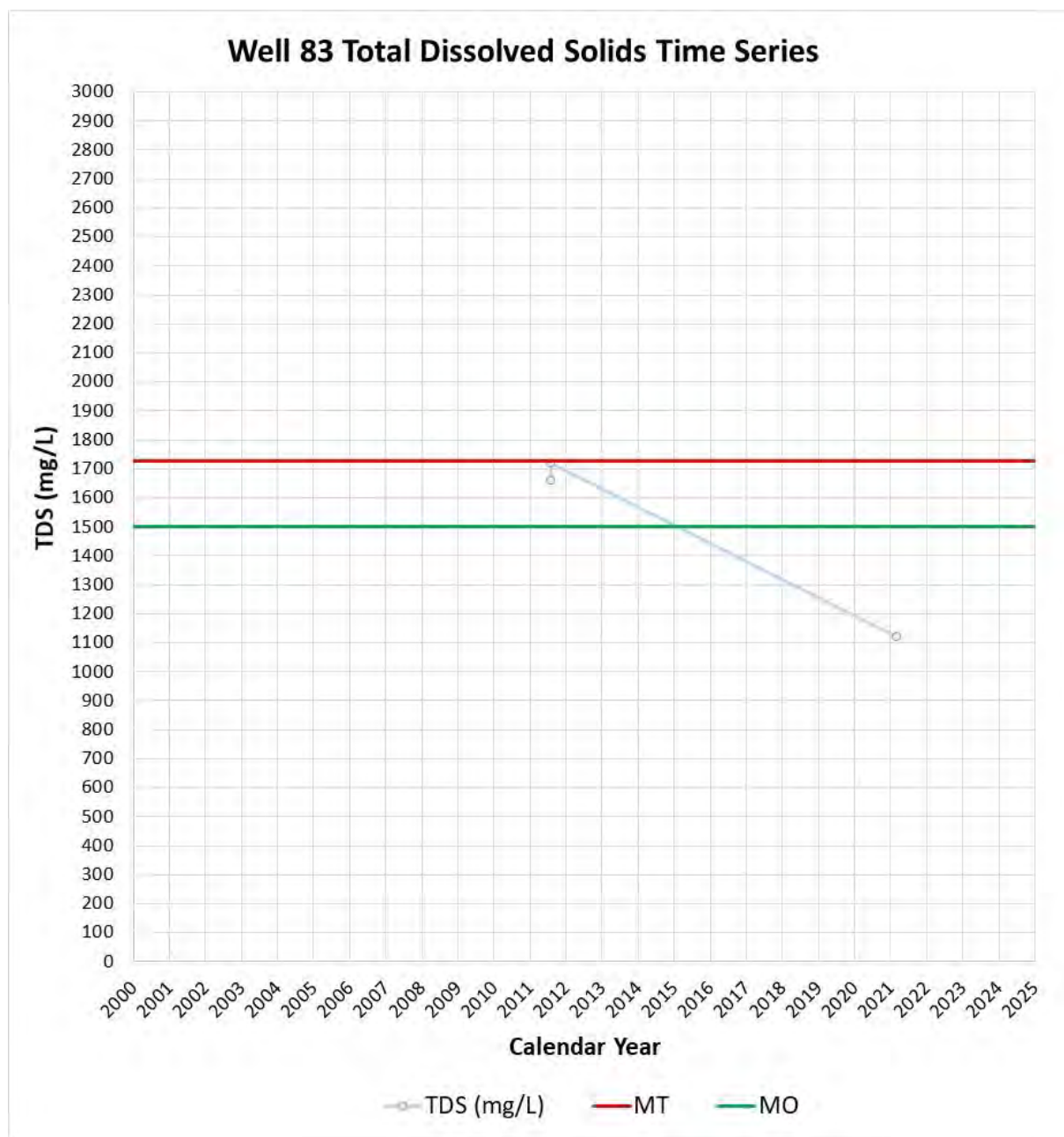


Figure 4: Central Region – Well 467

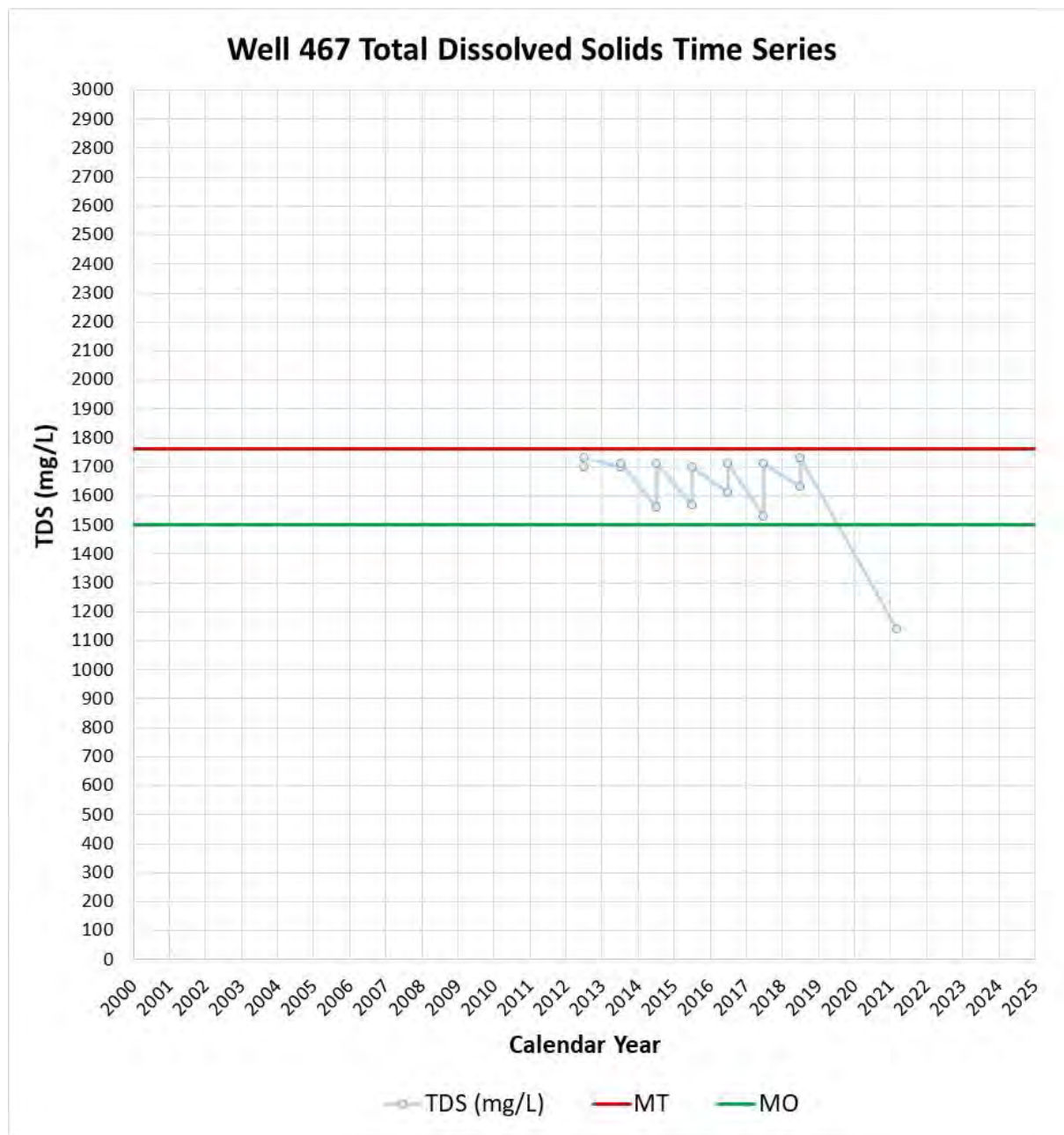


Figure 5: Central Region – Well 400

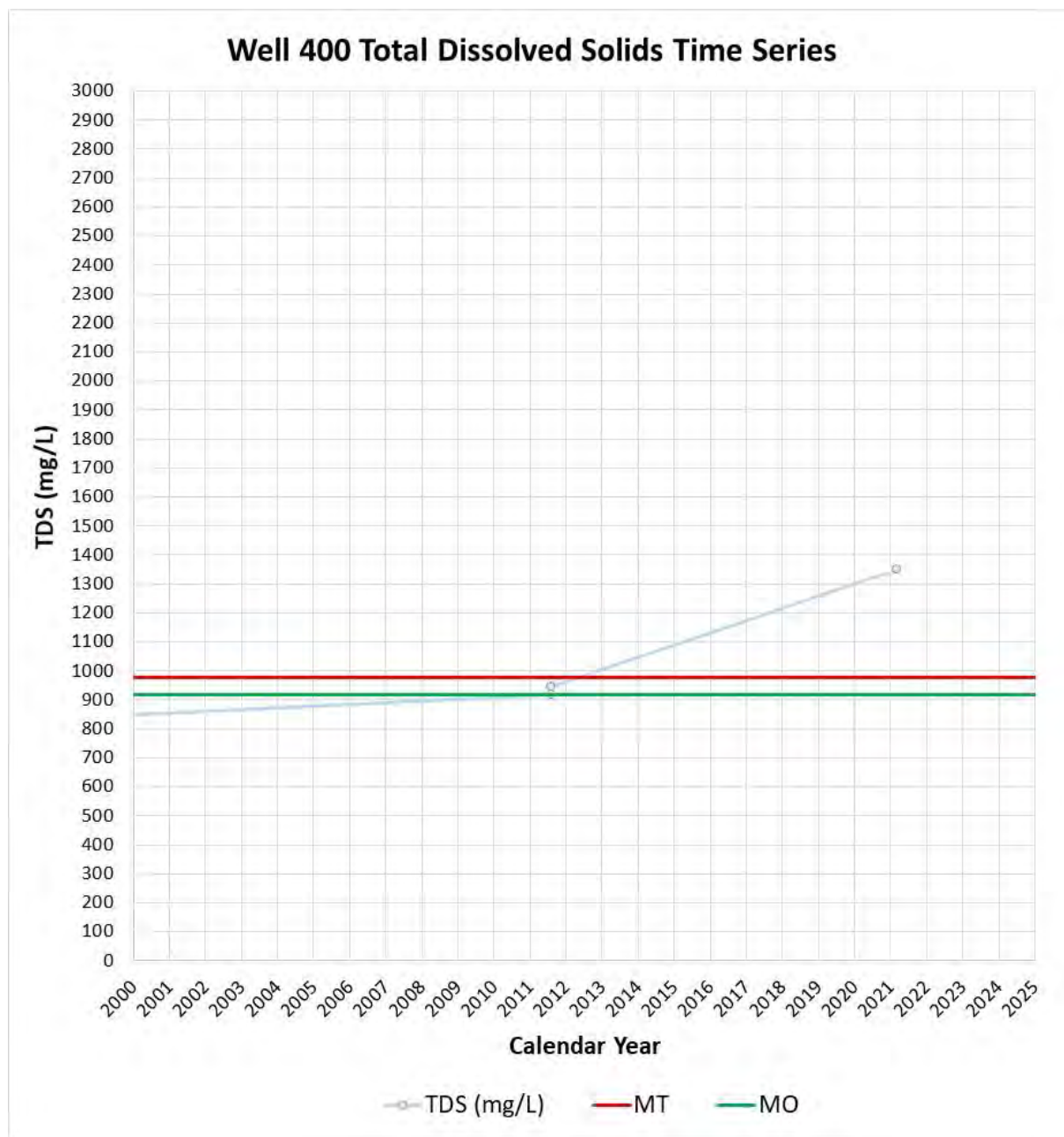


Figure 6: Western Region – Well TBD

No data from this Threshold Region at this time.

Figure 7: Northwestern Region – Well TBD

No data from this Threshold Region at this time.

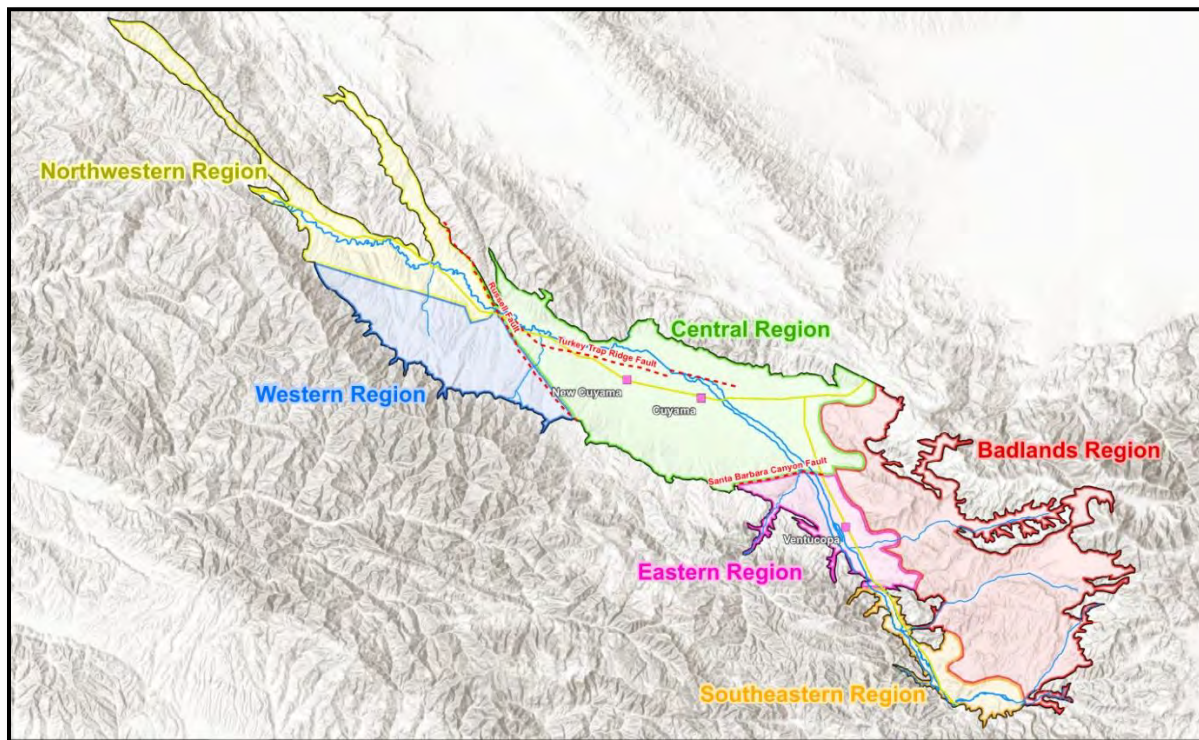


Figure 8: Threshold Regions in the Cuyama Groundwater Basin

5. MONITORING NETWORK UPDATES

As shown in the Summary Statistics Section, there are 40 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 61, 73, 76, 81, 85, 86, 87, 90, 98, 101, 130, 131, 196, 226, 227, 269, 309, 702, 703, 710, 712, 713, 721, 758, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850
- Transducer data is not currently available:
 - Wells 91, 316, 420
- The well has gone dry:
 - Well 318, 422



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COMMITMENT & INTEGRITY DRIVE RESULTS



TO: Standing Advisory Committee
Agenda Item No. 7b

FROM: Jim Beck, Executive Director

DATE: April 29, 2021

SUBJECT: Board of Directors Agenda Review

Issue

Board of Directors Agenda Review.

Recommended Motion

None – information only.

Discussion

Provided as Attachment 1 is the Cuyama Basin Groundwater Sustainability Agency Board of Directors agenda for the May 5, 2021 regular meeting.



CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY BOARD OF DIRECTORS

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 Baste Cuyama Basin Water District
Jane Wooster Cuyama Basin Water District
Vacant Cuyama Basin Water District

AGENDA

MAY 5, 2021

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Board of Directors to be held on Wednesday, May 5, 2021 at 4:00 PM. ***Due to COVID-19 pandemic restrictions and resulting suspension of certain components of the Brown Act per Executive Order Nos. N-25-20 and N-29-20, this meeting will be a remote-only meeting.*** To hear the session live call (646) 749-3122, 203-153-453 or logon to <https://global.gotomeeting.com/join/203153453> to view meeting materials.

The order in which agenda items are discussed may be changed to accommodate scheduling or other needs of the Committee, the public or meeting participants. Public comments should be emailed to Taylor Blakslee at tblakslee@hgcpm.com by close of business on Tuesday, May 4, 2021 to assist in facilitating this remote meeting, but may still be provided at the meeting.

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Introduction of New Director
5. Appoint SAC Member
6. Standing Advisory Committee Meeting Report

CONSENT AGENDA

7. Approval of Minutes – March 3, 2021
8. Approval of Payment of Bills for February and March 2021
9. Approval of Financial Report for February and March 2021

ACTION ITEMS

10. Consider for Approval Resolution No. 2021-051 Authoring the Delegation of Two Groundwater Management Resources Measures to the Cuyama Basin Water District

11. Consider for Approval Resolution No. 2021-052 Authorizing the Submission of 2019 and 2020 Delinquent Groundwater Extraction Fees to County Tax Collectors for Collection
12. Approval of Meter Guidance and Reporting Instructions
13. Approval of Fiscal Year 2021-2022 Budget and Cash Flow
14. Approval of FY 21-22 Consultant Task Orders
15. Approval of FY 20-21 Consultant Task Order Amendment Adjustments

REPORT ITEMS

16. Administrative Updates
 - a) Report of the Executive Director
 - b) Report of the General Counsel
 - c) Update on Development of FY 21-22 Groundwater Extraction Fee
17. Technical Updates
 - a) Update on Groundwater Sustainability Plan Activities
 - b) Update on Monitoring Network Implementation
 - c) Update on Monthly Groundwater Conditions Report
 - d) Update on Annual Groundwater Quality Report
18. Report of the Ad Hoc Committee
19. Directors' Forum
20. Public comment for items not on the Agenda
21. Correspondence

PUBLIC HEARING

22. **PUBLIC HEARING** – Groundwater Extraction Fee (6:30 p.m.)
23. Consider for Approval Resolution No. 2021-053 Setting a Groundwater Extraction Fee for Fiscal Year 2021-22 and Authorize Invoicing of Landowners
24. Adjourn