

**Borrego Springs Watermaster
Technical Advisory Committee Meeting
April 27, 2021 @ 1:00 p.m.**

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AGENDA

Items with supporting documents in the TAC Meeting Package are denoted with a page number.

I. OPENING PROCEDURES

- A. Roll Call
- B. Review of Meeting Protocols

II. PUBLIC COMMENTS

This is an opportunity for members of the public to address the TAC on items included on the agenda. Comments will be limited to three minutes per commenter. If you wish to comment, please join the meeting five minutes early to request to speak (verbally or via GoTo meeting Chat feature).

III. RECOMMENDED SCOPE-OF-WORK AND BUDGET TO REDETERMINE SUSTAINABLE YIELD

Objective: Discuss the process to redetermine the Sustainable Yield of the Borrego Springs Subbasin (Basin) by January 1, 2025, which will inform the development of technical scope-of-work and budget for water years 2022 and 2023.....**Page 2**

IV. PUBLIC COMMENTS (time permitting).

This is an opportunity for members of the public to address the TAC on items discussed during the meeting. Comments will be limited to three minutes per commenter, time permitting.

V. FUTURE MEETINGS

- **May 25, 2021 at 1 p.m.** Finalize the technical scope-of-work and budget for water years 2022 and 2023.

VI. ADJORNMENT

**Borrego Springs Watermaster
Technical Advisory Committee Meeting
April 27, 2021
AGENDA ITEM III**

To: Technical Advisory Committee (TAC)
From: Andy Malone, PG (West Yost Associates), Lead Technical Consultant
Date: April 21, 2021
Subject: Recommended Scope-of-Work and Budget to Redetermine Sustainable Yield

Objective

The objective of this memorandum is to prepare the TAC for a discussion on the process to redetermine the Sustainable Yield of the Borrego Springs Subbasin (Basin) by January 1, 2025, which will inform the development of technical scope-of-work and budget for water years 2022 and 2023.

Background

Section IV.G.2 of the Judgment defines the duties and responsibilities of the TAC:

The Technical Advisory Committee's responsibilities will include, without limitation, making recommendations based on best science and data collected regarding the Water Budget and the avoidance of Undesirable Result, determined by the TAC based on best available data, including without limitation information generated from BVHM model runs. Such assessment must consider all inflows and outflows from the Basin, including without limitation mountain front underflow and flux into the Borrego Springs Basin across the Coyote Creek fault and all other underflows, agricultural and recreational irrigation return flows; specific yield differences of the three aquifers (upper, middle and lower) within the different Management Areas of the Basin; and other matters approved by the Watermaster to improve upon initial assumptions regarding the Water Budget that will enable better Adaptive Management of the Basin.

Section III.F. of the Judgment describes a process and schedule for re-determining Sustainable Yield and the implementation of the Rampdown through 2040. It states that the TAC is to recommend a technical scope-of-work and budget for water years 2022 and 2023 to address the required update of the Sustainable Yield by January 1, 2025. The recommended scope and budget for water years 2022 and 2023 is due to the Board by June 1, 2021. Section III.F. further states:

- The redetermination of the Sustainable Yield will include collecting additional data, refining the Borrego Valley Hydrologic Model (BVHM), and using model runs to update the Sustainable Yield.
- The choice to perform specific technical tasks will be informed by considering the value and importance of the work to attain a better understanding of the Basin and the goal of advancing Sustainable Groundwater Management in comparison to the cost of the work.

Discussion

The Judgment calls for collection of additional data and information, model refinements, and use of model runs to update the Sustainable Yield by January 1, 2025. To achieve this milestone, the Judgment calls for a TAC recommendation for a specific technical scope-of-work and budget for water years 2022 and 2023. It is likely that the technical scope-of-work in 2022 and 2023 will involve data collection and model refinements. Water year 2024 will likely involve the use of the model to redetermine the Sustainable Yield.

There are two publications that describe the BVHM and its use to determine the initial estimate of the Sustainable Yield (5,700 acre-feet per year):

- USGS. 2015. [Hydrogeology, Hydrologic Effects of Development, and Simulation of Groundwater Flow in the Borrego Valley, San Diego County, California.](#)
- DUDEK. 2019. [Update to USGS Borrego Valley Hydrologic Model for the Borrego Valley GSA \(draft final\).](#)

These reports outline the areas of greatest model uncertainty, and hence, where additional data and understanding could be used to improve the model:

- *Estimation of un-metered pumping.* The BHVM uses the Farm Process Package (FMP) to estimate: (i) groundwater pumping to satisfy irrigation demands and (ii) irrigation return flows. The Watermaster's new meter-reading program is collecting metered groundwater pumping from many wells that were previously un-metered. The metered groundwater pumping data could be used to improve the FMP. In addition, the coarse cell size of the BHVM was identified as a potential source of error in the estimation of irrigation demands and return flows by the FMP.
- *Aquifer properties.* The results of model calibration and model validation indicate a slight bias of the model to underestimate hydraulic heads in certain areas. Aquifer stress testing at wells could provide site-specific and depth-specific estimates of hydraulic conductivity and storage parameters that could then be used to constrain future model calibration efforts and improve model accuracy.
- *Estimation of natural recharge.* The primary sources of natural recharge to the basin are mountain-block recharge and infiltration from ephemeral streams entering the Borrego Valley from the adjacent mountain watersheds. These sources of recharge were estimated using data from the regional Basin Characterization Model (BCM). The installation of stream gaging stations in Coyote Creek and other major drainages to the valley could improve the estimates of runoff to the basin.

Other types of data that will need to be collected to update and use the BVHM to redetermine the Sustainable Yield are:

- Groundwater-levels.
- Land use types, precipitation, and evapotranspiration to update the FMP.
- Septic system return flows.

In addition, the models that were used to estimate Sustainable Yield were originally prepared by the USGS and calibrated over 10 years ago. Update and use of the USGS models, and obtaining support from the USGS, can be challenging. The TAC can consider recalibrating these models using new data and information and newer versions of the modeling codes. Alternatively, the TAC could consider using newer, more advanced modeling tool(s) with a graphic user interface.

At the TAC meeting the Technical Consultant will:

- Review the Judgment requirements to redetermine the Sustainable Yield by January 1, 2025 (39 months from October 1, 2021).
- Have Trey Driscoll from Dudek provide a presentation on the use of the BCM and the BVHM in developing the current estimate of the Sustainable Yield.
- Lead a discussion on various approaches that could be employed to redetermine the Sustainable Yield, including data collection, model codes, model updates, and model uses.

The objective of the meeting is to obtain feedback and recommendations from the TAC on a preferred approach to redetermine the Sustainable Yield, which will inform the development of technical scope-of-work and budget for water years 2022 and 2023.

The Technical Consultant will use the TAC feedback and recommendations to develop a draft technical scope-of-work and budget for water years 2022 and 2023, which will be included in the TAC agenda packet for the TAC meeting on May 25, 2021. The goal is to prepare a final TAC recommendation for the technical scope-of-work and budget for Board consideration at its meeting in June 2021.