County of San Diego   May 21, 2019
Planning & Development Services
C/O: Mr. Jim Bennett   (by email to: PDS.LUEGGGroundWater@sdcounty.ca.gov)
5510 Overland Avenue, Suite 310
San Diego, CA 92123

CC (by email)
         Gary Haldeman, BWD Ratepayer Representative
         Borrego Water District

RE: Draft Groundwater Sustainability Plan for Borrego Valley Groundwater Subbasin

Dear Mr. Bennett,

I am a Borrego Springs resident and homeowner and I am writing to comment on the draft Groundwater Sustainability Plan (GSP) for Borrego Springs.

Comment 1

Section 4.1.1, page 4-21 states "The BPA [Baseline Pumping Allocation] is determined to be the maximum annual groundwater extraction during the baseline pumping period… The BPA methodology developed for the subbasin is detailed in Appendix F." It must be noted that the methodology outlined in Appendix F is not a measure of *water extraction* over the survey period. It is, rather, a method to estimate the *irrigation needs* of agricultural and recreational pumpers in the subbasin.

This is not to say that the methodology in Appendix F is inappropriate – it is certainly better than nothing, but it is a scientific *wild guess* rather than a precise measurement. Could the number be off by a factor of 20%? As much as 30% or more? This imprecision was not addressed in the GSP.

This is important because:

1. The calculated BPA for the subbasin – and basis for possible future adjustments – is based on two sets of data: one is an historical record of pumping by the Borrego Water District (BWD), a history that goes back well over 50 years. The other is the estimate of unknown accuracy generated by Mann. The BWD data set should only be subject to future "adjustment" if the data are proven to be in error. Any miscalculation of current water extraction from the subbasin must be assumed to be an error in the *estimated value;* any future adjustment to the BPA must only be applied to the *estimated values*.

2. Table 4-2 on page 4-15 quotes Mann (the author of the methodology in Appendix F): The "potential water savings for agriculture is less than 2% of the BPA…" If the total volume of water extracted by agricultural and recreational interests can be only grossly estimated, it is unreasonable and unscientific to assign a precise value for potential water savings.

> **Support:**
>
> Appendix F outlines a methodology using *evapotranspiration* (ET) which estimates water use by an individual plant species in order to estimate the plant's water requirements over time. This number is then used to estimate water use by a field of similar plants. The methodology in Appendix F makes many assumptions about local terrain, temperature, wind conditions, growing seasons, and applies those assumptions to large tracts of land under irrigation in the Borrego Subbasin. One of those assumptions, for example, involves *soil moisture content* (SMC).

The measurement of SMC is intimately tied to the ET in calculating irrigation needs of plants. SMC is not considered in the methodology outlined in Appendix F because variations in soil properties, terrain, temperature and wind conditions would make the task impossible. The resulting methodology outlined in Appendix F ignores SMC and assumes that all soil under every crop and every section of turf irrigated by agricultural and recreational pumpers is exactly equal. And the value derived, however inexact, is a calculation of the irrigation needs of the subbasin, not a measure of the water extracted over a five year period of time.

Water use by agriculture in the region is an estimate based on numerous factors outlined on page 4-11 of the GSP. Considering all of the unknowns involved in arriving at the agricultural and recreational portion of the 15,729 AFY (Acre Feet per Year) baseline, the accuracy of this number should be questioned or, at the very least, it should be assigned a margin of error to indicate the precision of the approximation. Is the actual number 15,729 AFY +/- 20%? +/- 30%?

Considering the inexact method for deriving the agricultural extraction values, 2% would seem to be well within the range for a rounding error. However the assumption made by Mann in his 2014 analysis is that the "potential water savings for agriculture is less than 2% of the BPA…" The 2% value is illogical and unreasonable, especially when this number (Estimated Potential Water Savings) is used in the calculus to determine the BPA for all users, including BWD ratepayers, where history shows *actual* water extraction data for over 50 years, not based on estimates.

Comment 2

The BWD has recorded over 50 years of pumping data, which represents the *"best available information"* for water extraction in the subbasin. Chapter 4, section 4.0 of the GSP states "Under the Regulations, the Groundwater Sustainability Plan (GSP) is to include the following: 3. Projects and management actions [PMA] shall be supported by best available information and best available science." To achieve fidelity with this mandate the entire BWD water pumping record must be considered in the BPA allotment formula, not the narrow window of 2010-2015 which is used in the GSP. Considering only the BWD 2010-2015 usage levels (after significant conservation measures were already in place, reducing water use in the district by over 50%) penalizes municipal water users for their conservation efforts. The BPA for BWD ratepayers must factor in the entirety of the historical usage record.

> **Support:** Applying the 2010-2015 survey period for all entities may seem to level the playing field for all water users in the district, but that is an unreasonable assumption.
>
> The opening of Section 4.3 of the GSP states: "The BWD has historically implemented measures to encourage efficient water use. These include a tiered water rate structure and other incentive programs (BWD 2009). In the past, rebate programs were established for the purchase of low flow toilets, low water use washing machines, and high water use turf removal. [Note: these measures were implemented prior to the 2010-2015 BPA survey period.] The Borrego Springs Community Plan (County 2013) includes a policy requiring the continuation of …aggressive, multi-faceted water conservation programs to reduce existing agricultural, golf course, commercial and residential [water] use."
>
> The irony of this situation is that, even with significant savings by the BWD ratepayers, the water table in our aquifer has continued to drop an alarming rate. The only plausible explanation is that non-metered pumpers have extracted the entire BWD water savings. Using the 2010-2015 dates to calculate the BWD share of BPA perversely increases agriculture and recreation's baseline by adding BWD's water savings to their total.

Comment 3

If a 74% reduction must be achieved for all pumpers in the subbasin, the BWD should be awarded a BPA of at least 1,000 AFY. PMA #3 states in part: "Each non-de minimis groundwater user within the subbasin will be assigned an allocation based on its historical groundwater use." To achieve fidelity with PMA #3 the Baseline Pumping Allocation (BPA) for the Borrego Water District (BWD) must be based on the 50 year historical BWD average of over 4,000 AFY. Furthermore, since the BPA for BWD is based on historical fact (unlike the BPA for agricultural and recreational pumpers which is an estimate with an unknown level of accuracy) the BPA for BWD ratepayers must be fixed and not be subject to any downward adjustment in the future. If a downward adjustment in BPA would become necessary in the future it must be borne solely by those entities whose BPA is based upon an estimate.

> **Support:** The BPA is derived from five years of recorded historical data from the BWD and *an estimate* of water extraction by agricultural and recreational pumpers from the 2010-2015. Selecting these dates, while ignoring over 50 years of historical pumping data from the BWD places the community of Borrego Springs at an extreme disadvantage because it fails to capture the success of the community's conservation efforts over the past two decades. Our community's population is relatively unchanged in decades but our water use has decreased by well over 50% in the last 20 years. The conservation efforts resulting in those water savings were, for the most part, already in place before 2010. Where actual historical data are available, as in the case of the Borrego Water District, it must be used as specified in PMA #3.

Comment 4

PMA #5 discusses Water Quality Optimization but only addresses naturally occurring contaminants. Contamination from outside sources must be considered in the GSP as well. If contaminants are being introduced from an outside source the parties responsible must be held accountable for any remediation that might be necessary.

Comment 5

Tourism is the primary industry in Borrego Springs. The 600,000-acre Anza-Borrego Desert State Park which surrounds the town is the largest desert state park in the nation, and attracts hundreds of thousand of visitors every year. Among the most popular local attractions are *groundwater dependent ecosystems* (GDEs): palm canyons, maidenhair waterfalls, and mesquite forests. The GSP recognizes that substantial damage has already been done to area GDEs; this damage is especially evident in dead mesquite forests and severely stressed mesquite bosques. GDEs must be given greater consideration in the overall water allocation calculus and timing of reductions. Water set-asides for GDEs are meaningless if the "set-aside water" sits in a drastically reduced water table, unavailable to the ecosystems it is intended to support.

Thank you for reviewing and considering my comments. Your efforts are greatly appreciated.

Regards,

Garold L. Edwards
312 Ocotillo Circle; Box # 1858
Borrego Springs, CA 92004
garoldedwards@gmail.com