

January 25, 2020

## MEMORANDUM

To: Matt Litchfield, PE, Three Valleys Municipal Water District  
From: Anthony Brown and Brandon Eisen, **aquilologic**  
**Subject: Status Report for the Bonanza Spring Study**  
**Project No.: 052-03**

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In February 2020, the Three Valleys Municipal Water District (Three Valleys) approved a study of the Bonanza Spring (the Study) to be conducted by a technical team led by **Aquilologic**. Bonanza Spring is located on the southwesterly flank of the Clipper Mountains in the Mojave Desert. The Study will evaluate the extent, if any, of hydrologic connection between Bonanza Spring and the alluvial aquifer in the Fenner Valley below. The Cadiz Valley Water Conservation, Recovery and Storage Project (the Water Project) plans to pump groundwater that originates in the Fenner Valley, approximately 11 miles away and downgradient from the Study area, before it evaporates from the Cadiz and Bristol Dry-Lakes.

A Final Environmental Impact Report (FEIR) was prepared for the Water Project. San Bernardino County also evaluated the Water Project further before adopting a Groundwater Management, Monitoring and Mitigation Plan (GMMMP) to regulate groundwater production. However, some interested parties have raised questions as to whether these studies were sufficient. Therefore, Three Valleys previously authorized an independent review of the GMMMP. This review concluded that the GMMMP was sufficient; however, the review also included recommendations most of which focused on additional study of Bonanza Spring. Based on these recommendations, Three Valleys decided to retain **aquilologic** to implement this additional study (the Bonanza Spring Study).

The Study will assist Three Valleys in assessing whether the proposed pumping by the Water Project would have any impact on Bonanza Spring, and whether any possible impact can be mitigated. Thus, the Study results will assist Three Valleys in evaluating its' participation in the Water Project.

**Aquilologic** recommended that the scope of the Study be developed collaboratively with all interested parties. Under the agreement with **aquilologic**, Three Valleys initially approved a task

order to collaboratively develop a Study Plan. Three Valleys then issued a second task order to **aquilogic** to implement the work described in the Study Plan.

Previously, our August 28, 2020 project status memorandum provided a chronology of activity from February through August 2020. In summary, most of our efforts over the past ten months have been focused on obtaining approvals from the US Bureau of Land Management (BLM) to implement the Study on federally owned land. The Study Plan and Independent Review of the GMMP were provided to BLM in March 2020. Standard Form 299 and Plans of Development (PODs) for Parts A, B, and C of the Study were submitted to BLM in June 2020. BLM staff have indicated their support for the Study, but BLM needs to complete a thorough review of the Study as they understand the sensitivity of the Study area.<sup>1 2</sup> Below updates and summarizes project activity between August 28, 2020 and January 22, 2021.

#### September 1, 2020

Agenda received from BLM (Needles Field Office) for web call scheduled for September 2, 2020. The agenda stated that BLM had completed their review of the SF299 and plans of development (PODs) for Parts A, B and C of the Study. The agenda also outlined remaining BLM questions regarding the Study.

#### September 2, 2020

Web call between **aquilogic**, Study team specialists, BLM field office management, and BLM science specialists. Verbal discussion of BLM questions provided on September 1, 2020.

#### September 16, 2020

Email from BLM (Needles Field Office) management indicating they would schedule bi-weekly calls to maintain an open dialogue to further discuss BLM questions and the corresponding responses.

#### September 23, 2020

Web call between **aquilogic**, study team specialists, BLM field office management, and BLM science specialists. Verbal responses to BLM questions provided by **aquilogic** and Study team

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<sup>1</sup> Of note, prior research at Bonanza Spring has been implemented without BLM review and approval, even though such review and approvals were required.

<sup>2</sup> A recent research paper, "**Conservation of Mojave Desert springs and associated biota: status, threats, and policy opportunities,**" by Sophie S. Parker (Nature Conservancy) et al concludes "*the need for monitoring in the Mojave Desert is particularly acute*" and "*Continued spring monitoring is therefore critical, and an expanded network of monitoring, including at monitoring wells away from spring areas, will be needed to protect the springs of the Mojave Desert.*"

specialists. It was agreed that written responses would be provided in addenda to the PODs submitted in late June 2020.

September 24, 2020

**Aquilologic** summarized BLM questions and aquilologic responses in a tabular format.

October 4, 2020

**Aquilologic** provided contact information for all aquilologic and study team specialists to BLM.

October 7, 2020

Web call between **aquilologic**, BLM field office management, and BLM science specialists.

**Aquilologic** provided an update on the preparation of addenda. Aquilologic requested, and subsequently received, information from BLM needed for the addenda.

October 19, 2020

Email from BLM (Needles Field Office) management stating that, if BLM questions can be addressed and/or any potential small ecological impacts avoided or mitigated, the Study would qualify to be approved under a Categorical Exemption (CX) to the National Environmental Protection Act (NEPA).

October 21, 2020

Web call between **aquilologic**, BLM field office management, and BLM science specialists.

**Aquilologic** asked for, and received, clarification on certain BLM questions.

November 11, 2020

Web call between **aquilologic**, BLM field office management, and BLM science specialists.

**Aquilologic** provided an update on the preparation of addenda and indicated that they would be submitted in one week (Part A) and two weeks (Parts B and C).

November 18, 2020

**Aquilologic** submitted addenda for Part A of the Study to BLM. Web call between **aquilologic**, BLM field office management, and BLM science specialists. **Aquilologic** provided a verbal presentation of Part A addendum content.

November 26, 2020

**Aquilologic** submitted addenda for Parts B and C of the Study to BLM. In response to questions posed by BLM on the aquifer pumping test, **Aquilologic** requested Balleau Groundwater, an independent consulting firm, to perform an analysis of the proposed aquifer pumping test using

numerical groundwater modeling. This analysis indicated that the aquifer pumping test would only reduce flow at the spring by <1% during the test and for a short time thereafter.

December 16, 2020

Web call between **aquilologic**, BLM field office management, and BLM science specialists. **Aquilologic** provided a verbal presentation of Parts B and C addenda content. BLM stated they would complete their review of the addenda by January 13, 2021.

January 13, 2021

Web call between **aquilologic**, BLM field office management, and BLM science specialists. BLM stated that they will approve the work described in Part A of the Study by mid-February 2021 under a CX to NEPA. BLM also stated that approval of portions of Part B (ecological assessment) and Part C (water sampling) would also likely be approved under the CX. With BLM approval in mid-February 2021, the geophysical assessment and surface water monitoring (Part A) field work will begin in early March 2021. BLM indicated that, prior to issuance of an approval, a cost-recovery agreement would be needed with the project applicant (aquilologic/Three Valleys). **Aquilologic** indicated that the parties would execute the cost-recovery agreement upon receipt and review.

A geologist had been added to the BLM science specialists team reviewing the study. The BLM geologist had additional questions on the monitoring well installations and aquifer pumping test. Aquilologic verbally addressed these questions. Many of these questions were previously raised by BLM in September 2020 and already addressed in the addenda. BLM stated they would provide an additional request for information on the monitoring well installations and aquifer pumping test in writing by January 14, 2021 (not yet received as of this writing). **Aquilologic** stated they would respond to these comments immediately upon receipt.

A final decision as to whether the remaining elements of the Study (i.e., monitoring well installations, aquifer pumping test) would be covered by a CX or require an EA would be made after receipt of the requested additional information.

January 15, 2021

Call between **aquilologic** and BLM (Russell Hansen) regarding CX steps and schedule, including cost recovery agreement, right-of-way offer, and lease payment.

January 19, 2021

Received comments from Christopher Dalu (BLM Archaeologist) through Russell Hansen (BLM Realty Specialist) regarding completion of cultural resources and sacred lands records search for Section 106 review and publication of findings on NEPA register.

January 20, 2021

Completed conference between **aquilogic**, BLM staff (Russell Hansen and Christopher Dalu), and Cardno staff (Tamara Klug and Vanessa Ortiz) regarding January 19 comments related to cultural and sacred lands record searches. Submitted Fieldwork Authorization (FA) request to BLM (Christopher Dalu, BLM Archaeologist) to conduct cultural resources assessment at Bonanza Spring.