

MEMORANDUM

To: Darrell Lacy – General Manager, Nye County Water District
From: Levi Kryder – Geoscience Manager, Nye County Nuclear Waste Repository Project Office
Subject: **Technical considerations regarding BrightSource Hidden Hills Project**

Mr. Lacy:

This memorandum contains technical recommendations regarding conditions recommended by other agencies with respect to groundwater pumping for the BrightSource Hidden Hills Project (Project). Although the Project is located in California, it shares groundwater basin 162 with the Town of Pahrump, Nevada and Nye County, Nevada.

- The California Energy Commission (CEC) staff's rebuttal testimony ¹, published February 11, 2013, states on page 85(c) in reference to the Stateline fault system that "... some drawdown [from pumping at the Project site] could, and likely would, still be transmitted across the fault."
 - The water level data collected under Nye County's water level measurement program suggest that the fault is a barrier to flow, but to date no quantitative testing has been done to determine the actual effects of the fault on groundwater flow. The statement that drawdown "likely would" be transmitted across the fault is qualitative, and should not be used to support quantitative triggers on ground water pumping.
- In a letter to the CEC dated March 12, 2012 ², the Bureau of Land Management (BLM) has expressed concern that pumping in the Project area could adversely affect water levels at Stump Springs, located about 2.5 miles from the nearest Project boundary, thereby negatively affecting the health of mesquite bosques in the area.
 - Mesquite trees themselves are not threatened or endangered, but serve as shelter for several species of migratory birds, such as the Phainopepla. There are several larger mesquite woodlands that also serve these birds in southern Pahrump and Stewart Valleys.
 - Based on the rooting characteristics of mesquite, it is highly unlikely that mesquite health will be affected by a 6-inch or even 2-foot decline in water levels near or at Stump Spring.
- In the same letter, the BLM suggests installing monitoring wells between the Project site and Stump Springs. Installing and monitoring such well(s) would provide valuable data regarding water levels and help validate the results of groundwater modeling in the area.
 - It would behoove the Nye County Water District, as the local agency with responsibility and authority regarding water issues within Nye County, to stay involved with (and obtain data from) monitoring efforts related to the Project.
 - If required, BrightSource/Hidden Hills would be the entity responsible for drilling and completing monitoring wells. The NCWD could contract with the Project to provide funding for the NCWD to conduct the monitoring during the project lifetime.
- The CEC has proposed that the Project be required to undertake mitigation measures if a water level decline of 6 inches attributable to the project occurs at a nearby stand of Mesquite trees. These mitigation measures include a health assessment of the trees in question, moving pumping west (away from the Mesquite), and several other options.

- Groundwater modeling conducted by Jim Reisterer³ (consultant to Nye County) predicts that the Project pumping will cause a water level decline at Stump Spring of 0.17 feet (2 inches) after pumping 280 acre-feet per year (afy) for 3 years and 140 afy for 27 years.
- Water levels in the Stump Spring monitoring well exhibit seasonal fluctuations on the order of 2 feet, and have been declining since a recharge event in 2005. In addition, there will be Project-related and other pumping influences present during Project construction and operation. Given these conditions, and the absence of long-term monitoring data in any new wells drilled for the Project, it would be very difficult to detect a Project-induced water level decline of 6 inches.
- Nye County recognizes the efforts the Project has taken to use dry cooling to reduce projected water usage to 140 afy during operations. This approach should result in much lower water usage than other solar projects in Nye County.

References

- ¹ Energy Commission staff's rebuttal testimony. TN # 69486, February 11, 2013. http://www.energy.ca.gov/sitingcases/hiddenhills/documents/2013-02-11_Staff_Rebuttal_Testimony_TN-69486.pdf.
- ² BLM letter to CEC regarding the use of water from the Pahrump ground water basin. TN # 64131, March 12, 2012. http://www.energy.ca.gov/sitingcases/hiddenhills/documents/others/2012-03-12_BLM_Comment_Letter_Regarding_Water_TN-64131.pdf.
- ³ Letter from Jim Riesterer, P.G., Glorieta Geoscience, Inc. to Levi Kryder, Nye County NWRPO on Evaluation of Pumping from Proposed BrightSource project site, April 30, 2012.