



## United States Department of the Interior

MAY 19 1998

U.S. GEOLOGICAL SURVEY  
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May 15, 1998

Rick Breitenbach  
CALFED Bay Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, CA 95814

Dear Mr. Breitenbach,

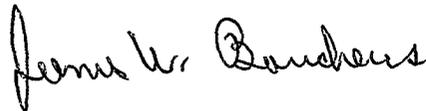
Yesterday I received a copy of a response by Ken Kessel, Architect, Sonora California, to CALFED's Draft Programmatic EIR/EIS. Mr Kessel has long advocated scientific evaluation of water resources in Tuolumne County, California. He and Mr. Jolly Dwyer have encouraged various county and local agencies to study ground-water-flow in fractured rocks of the Sierra Nevada and foothills. On numerous occasions I and other staff of the U. S. Geological Survey have discussed the state of knowledge regarding ground-water-flow systems in this region with Mr Kessel. I appreciate that Mr. Kessel recognizes the need for hydrogeologic investigations in the Sierra Nevada and foothills.

Mr. Kessel's response to the EIR/EIS included a news clipping (The Union Democrat, Sonora, California, December 16, 1992, page 1) purporting to convey information that was presented by the U. S. Geological Survey (USGS) at a public meeting during the evening of Tuesday, December 15, 1992. The USGS attended this meeting and presented considerable information regarding an ongoing hydrogeologic investigation in the Wawona area of Yosemite National Park. Unfortunately, the newspaper inaccurately reported some of the information presented by the USGS. The article leaves the reader with the mistaken impression that a nearly limitless supply of ground water lies beneath the Sierra Nevada. This impression is nearly the opposite of our conclusions.

At the December 1992 meeting I stated that although our two test wells at Wawona flowed at rates between 20 and 100 gallons per minute shortly after they were drilled, these flow rates were not sustained. In fact, over a period of four months our deepest well (1027 ft below land surface) ceased flowing and flow from our shallower well (425 ft below land surface) decreased by 80 percent. During the flow tests the dissolved mineral content of water discharging from both wells increased 100 percent-- exceeding secondary drinking water standards at the deeper well.

My purpose in writing this letter is not to either refute or confirm each bit of hydrologic information in the article. But, because this article has resurfaced after many years, and was submitted to CALFED with EIR comments, I feel that I must point out that the article contains inaccuracies. I must also emphasize that I wholeheartedly agree with statements in the article describing ground-water-flow systems in the Sierra Nevada as complex and poorly understood. I also concur with Mr. Kessel's observation (third paragraph, page 4, Kessel's EIR response) that understanding these ground-water-flow systems requires scientific investigation and research.

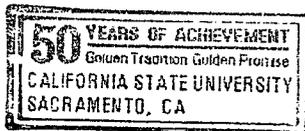
Sincerely,



James W. Borchers  
Hydrologist

CC Kenneth Kessel, Architect, 19296 Cordelia Court, Sonoma, California 95370  
Larry Smith, Hydrologist, USGS, Placer Hall, 6000 J Street, Sacramento, CA 95819-6129

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