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TO

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FROM

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Department of
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January 8, 2001

Jack Safely
Metropolitan Water District of Southern California
P.O. 54153
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Dear Sir,

In August, 2000 I had the opportunity to visit the Metropolitan/Cadiz pilot spreading basins and do field work in the Fenner Basin. I was impressed by the scale of your project design and the thoroughness of its planning. The monitoring plan outlined in the Draft Supplement to the EIR also appears well designed for detecting any potential impacts to the Fenner groundwater basin during operation of the Cadiz Groundwater Storage and Dry Year Supply Program. P84-1

However, I was alarmed when I came across a USGS review (dated Feb. 23, 2000) of the Draft EIR/EIS. This extraordinary USGS review asserts that the Draft EIR/EIS overestimated natural recharge to the Fenner Basin by "5 to 25 times" the values estimated by the USGS review team using "similar methods" (p. 1 & 2). I have conducted an independent review of the USGS review and find it to be without scientific substance. The serious deficiencies disclosed by my review and my own examination of the Fenner Basin include the following: P84-2

1) The USGS report uselessly mis-characterizes the hydrogeologic and tectonic setting of the basin. For example, p II-5 refers to the probable low permeability of the "dominantly granitic and metamorphic consolidated rock types of the watershed area." Astonishingly, more than 80% of the Fenner Basin is characterized by unconsolidated alluvial deposits. The authors of the USGS review could not harbor such basic geologic misconceptions of the region had they made a single trip to the area, or even had they simply referred to a state geologic map. P84-3

2) In their criticism of the precipitation estimates for the Fenner Basin, the USGS reviewers discard valid precipitation data collected within the basin (e.g., Mitchell Caverns SP), and instead substitute precipitation data collected outside the basin. The latter are obviously invalid, and the only apparent reason for such a "substitution" is to achieve a predetermined result that supports the USGS position and contradicts the claims of the Draft EIR/EIS. The USGS review then presents distorted, confusing plots that support their point of view. P84-4

3) The low groundwater recharge estimates (1710 acre feet per year; p. 3) made by the USGS is four times lower than the current pumping rate on the Cadiz Inc. property. This pumping has been ongoing for more than a decade and there is no evidence of subsidence, declines in water levels, or negative impacts to the down gradient playas. P84-5

4) In my visit to the USGS gauging station in Caruthers Canyon, near the NE border of the Fenner Basin in the New York Mts., I found the location of the station purported by USGS to be in error by more than 0.5 km! The actual location was at a significantly higher elevation and wasn't even in the same township as reported by USGS.

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5) The isotopic and geochemical models presented by USGS are contrived, outdated and baseless. No reference is made in the USGS report to the finest current literature on desert hydrology.

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In short, while the USGS review asserts that it is using "similar methods" as the Draft EIR/EIS to derive its conclusions, the USGS authors present no evidence of familiarity with the most basic hydrogeologic characteristics of the Fenner Basin. Moreover, data are distorted, substituted and eliminated at will to derive conclusions favored by USGS. Unencumbered by the constraints of the scientific method and, evidently, of peer review, the report appears to be a rambling, baseless, and possibly unethical attempt to interfere with a private corporation and a municipal entity that are cooperating on a legitimate project that could very likely benefit millions of US citizens. Having been employed by the USGS earlier in my own career, I cannot conceive how such a destructive and unscholarly document could have received the "Director's Approval" that is required for all USGS publications.

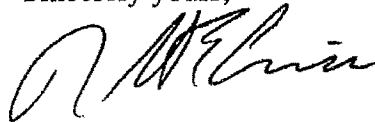
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I suggest that the authors of the USGS review should actually visit the Fenner Basin. Such a trip would provide them with a much-needed opportunity to correct their hydrogeologic misconceptions, and might even enable them to contribute some data rather than baseless assertions. At the same time they could confirm the serious misrepresentation by their organization of the location and site hydrology of the Caruthers Canyon gauging station. They could also confirm the erroneous USGS representation of the UTM coordinates of the Pinto Mountain topographic quadrangle. Until such shortcomings are addressed, the USGS operations in this area cannot be construed as "Science in the Public Service."

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Thank you for your attention.

Sincerely yours,



Robert E. Criss
Professor

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Mark Liggett