

November 22, 2010

Paula Landis, Chief
Division of Integrated Regional Water Management
California Department of Water Resources
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 94236-0001

Re: Comments on DWR CASGEM Draft (October 2010) Monitoring Guidelines

Dear Ms. Landis:

The Nature Conservancy in California is very supportive of the improved monitoring of groundwater conditions in California mandated by SBx7-6, and we are pleased to see the progress that has been made by the Department of Water Resources (DWR) toward implementing this monitoring program. Successful implementation of the California Statewide Groundwater Monitoring (CASGEM) program is critical to effective management of California's water resources for the protection of ecosystems and for providing reliable water supplies for people.

Accordingly, we have reviewed the Draft Procedures for Monitoring Entity Reporting and the Draft Groundwater Elevation Monitoring Guidelines prepared by DWR. We find the documents to be very helpful and thoughtfully prepared. Looking at the groundwater monitoring needs from an ecosystem health perspective, we have the following suggestions for improving the monitoring guideline document:

- 1) On page 1 (last paragraph) of the Guidelines, the documents reads, "... monitoring wells near rivers or aquifer storage and recovery projects should be avoided due to the potential for rapidly fluctuating water levels and engineered groundwater systems." We suggest that monitoring water groundwater levels near streams and rivers is not only useful, but is critical to understanding the behavior of our aquifers. Since rivers and streams are often a major discharge point for groundwater and/or major sources of groundwater recharge, monitoring groundwater levels in the vicinity of streams is necessary to understand some of the most important aspects of aquifer dynamics. It would be a gross oversight to explicitly avoid monitoring groundwater levels near streams and rivers, and in fact, it is appropriate to consider a higher density of monitoring wells near rivers and streams given the importance of the near-stream aquifer dynamics and the significant effects that groundwater management has on stream flows. We encourage DWR to revise the monitoring guidelines to encourage inclusion of an appropriate number of monitoring wells in the vicinity of perennial streams and rivers, ephemeral stream channels, and wetlands as an important component of a robust monitoring network. In the case of network wells that are located near streams and rivers, it would also be important to document the distance to the stream (or stream channel or wetland) and the general condition of the stream or wetland at the time of level measurement in the well. For instance, an appropriate note might say that the nearby stream

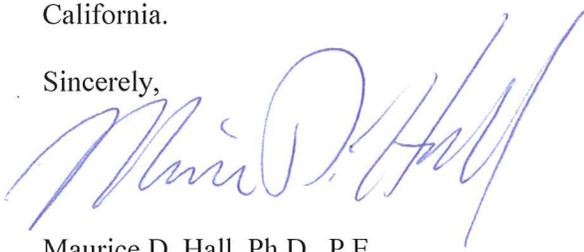
channel is dry at the time of the measurement or that the stream is flowing at normal summer levels at the time of the measurement, as appropriate for the situation.

- 2) On pages 2-7 of the document, the appropriate density of monitoring wells in a given monitoring network is discussed. On the general point of monitoring well density, we encourage DWR to suggest that a higher spatial density of monitoring wells is encouraged in areas of the aquifer where relatively steep groundwater gradients are known or expected to exist, locations where aquifer recharge and discharge are expected to occur (such as near streams or wetlands), or in areas where relatively high levels of pumping are known to exist.

- 3) In general, we have found the use of automatic pressure transducers to be a cost-effective method for monitoring groundwater levels at a relatively high temporal frequency. In addition, monitoring at higher frequencies (monthly, weekly, or even daily) is very informative in understanding the behavior of the groundwater. While it is unreasonable to try and implement monitoring at higher frequencies in all areas, it would be very informative to have higher frequency level measurements where it is practical. Therefore, we recommend that DWR highlight the value and possible low-cost of automatic transducers in your guidance documents and prepare supplemental guidance on the transducer options and how implementation of transducers can be achieved with minimum effort and cost.

Please feel free to contact me if you have any questions about our comments. We look forward to working with DWR and other partners in implementing an effective groundwater monitoring program in California.

Sincerely,



Maurice D. Hall, Ph.D., P.E.
Associate Director, Integrated Water Management
The Nature Conservancy, California Water Program