Peer Review Summary Document

(10/24/2013)

Peer Review Plan

https://www.usgs.gov/atom/73866 [16 KB PDF].

Title and Authorship of Information Product Disseminated

Evaluation of Alternative Groundwater-Management Strategies for the Upper Klamath Basin, Oregon and California, By Brian J. Wagner, and Marshall W. Gannett.

Peer Reviewers Expertise and Credentials

Peer Reviewer #1: A U.S. Geological Survey (USGS) Hydrologist with nearly 28 years of professional service with the Bureau. The reviewer has an M.S. degree from the University of Arizona, Department of Hydrology and a PhD from the University of Connecticut in Environmental Engineering. Reviewer #1 has expertise in the areas of groundwater/surface-water interactions and groundwater modeling, including the application of simulation-optimization modeling to groundwater studies.

Peer Reviewer #2: A USGS Hydrologist for 23 years. The reviewer has a PhD from the University of California. The reviewer has extensive experience in the development of groundwater models, including the application of MODFLOW, GSFLOW, and SUTRA. Reviewer #2 has a long history of applying optimization techniques to water-management problems, including the development of a groundwater-management model and innovative techniques for solving groundwater management problems.

Charge Submitted to Peer Reviewers

The reviewers were asked to make an objective evaluation of the research.

Summary of Peer Reviewers Comments

Reviewer #1 Comments:

The reviewer commented that the less than or equal sign in equation should have been greater than or equal. Regarding the equation variable explanation, the reviewer asked if these are real rates, as in volume per time, or volume, such as acre-feet (given the demand constraint shown in equation 10 and the demands shown in figure 3B, which are in acre-feet) and said it seems that the Qw's are actually volumes, and that a conversion is made between the rates used in the simulation model and the volumes used in the optimization model. The reviewer recommended that in any case, whether these are rates or volumes, the relation between pumping rates and demand volumes should be clarified. The authors agreed with these comments, and the description of the demand values has been enhanced in the list of variables and a new sentence has been added to the text body to clarify the conversion from rates to volumes.

With regard to the first paragraph of the section titled, "Hypothetical Groundwater Demand under the Klamath Basin Restoration Agreement," the reviewer thought it was a well written section that describes how the groundwater demand values were determined for the management model (i.e., figure 3B). Regarding the same section, the reviewer recommended clarifying the linkage of two sentences related to how the 2001, 2003, and 2004 reductions in surface water diversions discussed in one sentence, are not accounted for in the irrigation diversions discussed in another sentence. The authors' agreed and included this additional explanation by revising the paragraph to clarify how diversions were calculated in 2001, 2003, and 2004 as compared to other years.

Other editorial related comments from the reviewer were also addressed.

Reviewer #2 Comments:

The reviewer found that in general, this was one of the most technically complete reports they have reviewed. The reviewer suggested that figures to facilitate the discussion of the sensitivity analyses be added and the authors' concurred. The reviewer also recommended that the authors' test a "reduced demand" scenario, to which the authors' responded that demand reduction is implicit in the groundwater management model presented in the report, so no change is needed.

Dissemination

The published information product will be released in a USGS publication series and will be available at http://pubs.er.usgs.gov/.