

Interactive comment on “Screening of sustainable groundwater sources for integration into a regional drought-prone water supply system” by T. Y. Stigter et al.

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We greatly acknowledge the comments of Referee #1 and will certainly take them into consideration when submitting an updated version of the manuscript in the period indicated by HESS. We were pleased to know that the Referee found the paper interesting and well arranged and we agree that one or two sections (particularly the discussion of the quality index) may have resemblances with the layout of a technical report, as a consequence of reporting results obtained in a practical research project. We also consider that the article is within the scope of HESS, particularly regarding two aspects of the Aims and Scope specified by the journal: i) to serve not only the community of hydrologists, but all water engineers and water managers, and ii) to contribute to the holistic understanding towards sustainable management of water resources and water

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quality. We believe the results reported may be of interest as they report the problems found in the application of known methodologies to real data, and the solutions found to overcome such difficulties.

Though the applied methodologies are not innovative, we do not consider them non-relevant, as stated by the Referee. Moreover, we believe that it is the integration of the groundwater screening method with the groundwater flow model and the discussion on resource sustainability that results in a relevant contribution of the manuscript to the scientific community. We agree that the paper can be improved by shortening the introduction (the second part of section 2.2 is indeed less important for this paper) and by including a more detailed analysis regarding the validation of the recharge methodology and the groundwater flow model. The latter analysis already exists, but was not included in sufficient detail in the paper, as we were concerned about an excessive focus on the technical aspects. In the new version of the manuscript, details will be included and existing publications will be cited on how recharge was evaluated (Kessler was applied, but also validated with other methods such as the FAO dual crop coefficient method) and how the transmissivity sub-regions and final flow simulations were defined and validated (using monthly hydraulic head observations and pumping tests, with very good results).

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 85, 2009.

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