

Interactive comment on “Quantification of anthropogenic impact on groundwater dependent terrestrial ecosystem using geochemical and isotope tools combined with 3-D flow and transport modeling” by A. J. Zurek et al.

Anonymous Referee #2

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I have found the ms very interesting focusing on GDE which is a complex and valuable ecosystem. Investigations carried out get indepth to deal with the topic and specifically the tools used (hydrochemistry, isotope hydrology; geophysic and modeling). These ccombined tools did make a good advance in the system functioning. However, I have to put forward two aspects which the authors should consider prior final acceptance.

1. General comments

- Description and pertinence of the tools should be stated in the introduction – authors

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should make a link with the context of the study area. Some of these aspects are included – but not in the introduction

- In most parts of the ms, authors used qualitative estimate instead giving number. I believe that quantitative estimate will be more appropriate to estimate impact.
- Sampling network should be developed in section materials and methods
- In page 5 first paragraph, authors should give the scientific basis for depth classification – is this classification related to depth of the root zone or not§
- Comments on model result are not well developed
- One striking point is the lack of discussion taking into account the isotopic, hydro-chemistry and model result in term of flow exchange and contribution and validate them with the system functioning and stream flow with regard the the new pumping stress
- Abstract doest not reflect main findings of the ms

2. Specific comments

- A lot of style and grammatical errors – may be some revisions for the writing will help
- References in text should be in date ordre
- Page 7 last paragraph of conceptual model should be in this part – however, I propose to authors to add a section related to hydrodynamic in section “results” where conceptual model should be described
- First paragraph and sentence in page 9 is too long

In conclusion, the paper should be considered after moderate revision.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 9671, 2014.

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