

Responses to Editor and Reviewer

Dr. Dongmei HAN
Key Laboratory of Water Cycle & Related Land Surface Processes
Institute of Geographic Sciences and Natural Resources Research
Chinese Academy of Sciences
Beijing 100101, P.R. China
Fax: +86-10-64889849
Tel: +86-10-64889367
Beijing, 11 May, 2018

To: The Editor
Hydrology and Earth System Sciences

Dear Editor,

We are submitting the revised manuscript titled “Delineating multiple salinization processes in a coastal plain aquifer, northern China: hydrochemical and isotopic evidence” (Manuscript ID: hess-2017-617) to *Hydrology and Earth System Sciences*. We made revisions based on the comments provided by the reviewer. We gratefully acknowledge the editor’s and the anonymous reviewer’s generous help.

Our detailed response, including changes made, as a result of the constructive suggestions made by the reviewer are detailed below. We have updated a revised version of the manuscript in both ‘tracked changes’ form, and a ‘clean’ version with all changes accepted:

Response to Reviewer #2’s comments:

(1) Abstract: The abstract is a reasonable description of what the paper is about, however it would benefit from some more details. Specifically, there are a lot of qualitative terms in the description of major ion geochemistry - put the key values in the text where possible.

Answer: Agree, changes made (see lines 20 to 25). The abstract has been updated to include the key values for important data types (e.g. chloride concentrations, stable isotopic compositions) along with the existing values for strontium concentrations and Sr/Cl ratios (lines 25-26).

(2) Lines 23, 77, and 511: By mineralization do you mean TDS (try to avoid using multiple terms for the same thing as it gets confusing)?

Answer: Agree, changes made.

The text has been revised and the term ‘TDS’ is used consistently to describe the total dissolved ion content of the groundwater:

Line 23: “the geothermal water *with high TDS* (up to 10.6 g/L)”.

Line 77: “*the high TDS-geothermal water*”.

Lines 510-511: “The upward mixing of *high TDS-geothermal water*”.

(3) In the figure captions of Figs 2&12, it should simply be 'water table' not 'groundwater table'. Figure S1. 'groundwater levels' in the caption could be changed to 'water tables'

Answer: Agree, changes made. Figure captions updated as suggested.

(4) Line 191: Line 191: 'water demands...'? - what water demands? This needs a bit of explanation

Answer: Agree, Changes made. Line 195 inserted “for agriculture and industrial usage (Meng, 2004)”

(5) Line 342: change 'observed' to 'measured'

Answer: Agree, changes made.

(6) Line 358: change 'originates in' to 'originates from'

Answer: Agree, changes made.

(7) Figure S1. Hard to read (colourful zone for the depression area would help).

Answer: Agree, changes made. The depression areas enclosed by the 0 m.a.s.l. water table contour line are now shown in a shaded color version of the figure.

Thank you very much for your time and consideration. If you have any further questions regarding our manuscript, please let us know.

Sincerely Yours,

Corresponding Author:

Dr. Han Dongmei

Key Laboratory of Water Cycle & Related Land Surface Processes,

Institute of Geographic Sciences and Natural Resources Research,

Chinese Academy of Sciences,

Beijing, 100101,

P.R.China

Tel: +86-10-64889367

Email:dmeihan@gmail.com