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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Mechanism of groundwater inrush hazard caused by solution mining in multilayer rock salt mine area: a case study in Tongbai County, China" *by* Bin Zeng et al.

Bin Zeng et al.

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Dear Referee and Editor:

Thank you for the valuable suggestions. We have carefully read through the comments, and our responses to the referee's questions are listed below. We greatly appreciate your time and efforts to improve our manuscript for further revision and publication.

The paper is interesting supplying new original data on a mechanism of pollution related to salt mines. But the paper cannot be printed in its actual form needing by my opinion major revision, for the following main reasons:

1. It is written in a very poor English which often avoid the possibility to understand what the Authors are describing. The must be rewritten by a mother language.

Re: The language of this paper was revised by "American Journal Experts" before submitting. And the author will ask either an English user or another language service organization to completely revise the language of this paper before submitting the revised manuscript.

2. The lithological column of fig. 3 (wrongly addressed as 2 along the paper) is not sufficiently explicative. It lacks of the definition of glutenite (it is not a general accepted geological term), of the location with a specific symbol of the gypsum layers, of specific symbols for the different exploited minerals etc...

Re: (1) The author will check and revise all the citations of Figure 3 in the manuscript. (2) The author will supply detailed definition of "glutenite" as the note of Figure 3. (3) The author will supply specific symbols for both location of the gypsum layers and the different exploited minerals in Figure 3. (4) The author will also optimize the structure and legend of this lithological column.

3. In the sketch of fig. 4 it is not clear (not explained in text) how the groundwater flow directions have been defined.

Re: The author will supply detailed information about the groundwater flow directions in chapter 2.2 "Hydrogeological conditions", and will also optimize the legend (groundwater flow direction) and its distribution in Figure 4.

4. The sketch of fig. 5 is not clear: colors of the different minerals can be confused; the development of the geological fractures are not clearly explained (nor in the text) and the contribution of the gypsum dissolution is poorly explained (in text it is sated that it is an aquiclude but this is not true: it is well known that gypsum if fractured as surely it becomes easily karstified (by an hot under pressure water. . ..) and therefore it becomes a permeable rock. . .

Re: (1) The author will optimize and change the mineral colors in Figure 5, so as to distinguish the different minerals clearly. (2) The author will supply detailed information about the geological fractures in chapter 2.1 “Geological conditions”, and will also supply corresponding legend and information in Figure 5. (3) The author will supply more analysis and discussion about the contribution of the gypsum dissolution in chapter 2.2 “Hydrogeological conditions” and chapter 2.3 “Distribution and characteristics of the ore body”, so as to better define and discuss the permeability of gypsum layers.

5. The reference list is not in alphabetical order and therefore it is impossible to be checked.

Re: The reference list in the initial manuscript has been edited in alphabetical order before submitting. The author will check the reference list again, and make revision if there are some alphabetical order mistakes.

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