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Hydrology and Earth System Sciences Discussions

Interactive comment on "Tracing groundwater salinization processes in coastal aquifers: a hydrogeochemical and isotopic approach in Na-Cl brackish waters of north-western Sardinia, Italy" *by* G. Mongelli et al.

M. Nathenson (Referee)

mnathnsn@usgs.gov

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Review of: Mongelli, G., Monni, S., Oggiano, G., Paternoster, M., and Sinisi, R., 2013, Tracing groundwater salinization processes in coastal aquifers: a hydrogeochemical and isotopic approach in Na-Cl brackish waters of north-western Sardinia, Italy: Hydrology and Earth System Sciences Discussions, v. 10, p. 1041-1070.

By Manuel Nathenson U.S. Geological Survey Menlo Park, CA 94025 U.S.A. mnathnsn@usgs.gov

The data set in this paper for the Na-Cl brackish waters of north-western Sardinia, Italy, is valuable with data for all samples for oxygen-18 and deuterium isotopes in water, and sulfur-34 and oxygen-18 isotopes in sulfate as well as data for water chemistry. The purpose of this expanded data set is to identify whether the brackish ground water is created by mixing of rain water with sea water and/or from water-rock interaction. Unfortunately, the mixing line between sea water and rain water for oxygen-18 in water and chloride was calculated incorrectly in their Fig. 6, and this changes the interpretation for the source of chloride. In addition, a comment is added on the possibility of oxygen-18 in sulfate being changed by incomplete equilibrium between sulfate and water.

The review is attached as a pdf in the Supplement, because it contains symbols, superscripts, subscripts, and figures.

Please also note the supplement to this comment:
http://www.hydrol-earth-syst-sci-discuss.net/10/C296/2013/hessd-10-C296-2013-supplement.pdf

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 1041, 2013.