

*[Geochemistry, Geophysics, Geosystems]*

Supporting Information for

**Geochemistry of Zr, Hf and REE in a wide spectrum of Eh and water composition: The case of Dead Sea Fault system (Israel)**

P. Censi1\*, M. Raso1, Y. Yechieli2, 3, H. Ginat4, F. Saiano5, P. Zuddas6, L. Brusca7, W. D’Alessandro7, C. Inguaggiato1, 6, 7

1 Department of Earth and Marine Sciences, University of Palermo, Via Archirafi, 36 - 90123 Palermo, Italy.

2 Geological Survey of Israel, 30 Malkhe Israel Street, Jerusalem 95501, Israel.

3 Department of Hydrology & Microbiology, Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Midreshet Ben-Gurion 84990, Israel.

4 Dead Sea and Arava Science Centre, Yotvata, Hevel Eilot, 88825, Israel

5 SAF Department, University of Palermo, Viale delle Scienze, 13 - 90128 Palermo, Italy

6 Sorbonne Universités, UPMC Univ. Paris 06, CNRS, Institut des Sciences de la Terre de Paris, 4 place Jussieu 75005 Paris, France

7 Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Palermo, Via U. La Malfa, 153, 90146 Palermo, Italy.

Corresponding author: Paolo Censi [paolo.censi@unipa.it]

**Contents of this file**

This supporting information contains four Tables from S1 to S4.

**Introduction**

Here are reported the table relative to the data quality (Table S1), the major element and Fe composition of studied waters, the rock type forming the different aquifers where the collected samples were drawn and the origin of samples from springs or wells (Table S2), the saturation indexes of the most common minerals (Table S3) and the Zr, Hf and REE contents of studied waters and related geochemical parameters (Table S4). Analytical procedures and calculations carried out in this study are reported in the Materials and Methods section of the manuscript

Table S1. Analyses of NASS-6 and NASS-5 standard reference materials used to evaluate data quality and analytical procedures. For further details see text. Reference values are reported from Raso et al. [2013] and Zhu et al. [2009]. REF\*: data from Willie and Sturgeon [2001], Shaw et al. [2003], Firdaus et al. [2007]. Data are given in pmol l-1.

Table S2. Physical-chemical characters, major ion and Fe concentrations in studied waters.

Table S3. Saturation indexes of the main occurring minerals in studied waters.

Table S4. Zr, Hf, REE concentrations and derived parameters in studied waters. Data are given in pmol l-1.