

Supplementary Information:

Time series of hydrochemical parameters, iron and sulfate concentrations, E_H-pH-diagrams for the Fe-S-K-O-H system of groundwater and surface water

Article Title Retention potential of a drained wetland in the Lusatian lignite mining district, Briesener Niedermoor, Germany, Europe

Journal Name Environmental Earth Sciences, Springer

Authors: Clemens Hartmann^{1,*} – Wilfried Uhlmann² – Traugott Scheytt¹

¹ *Institute of Geology, Department for Hydrogeology and Hydrochemistry, Technical University Bergakademie Freiberg, Gustav-Zeuner-Straße 12, 09599 Freiberg, Germany, Clemens.Hartmann@geo.tu-freiberg.de*

² *Institut für Wasser und Boden Dr. Uhlmann, Lungkwitzer Straße 12, 01259 Dresden, Germany*

* Address for correspondence: E-mail: Clemens.Hartmann@geo.tu-freiberg.de

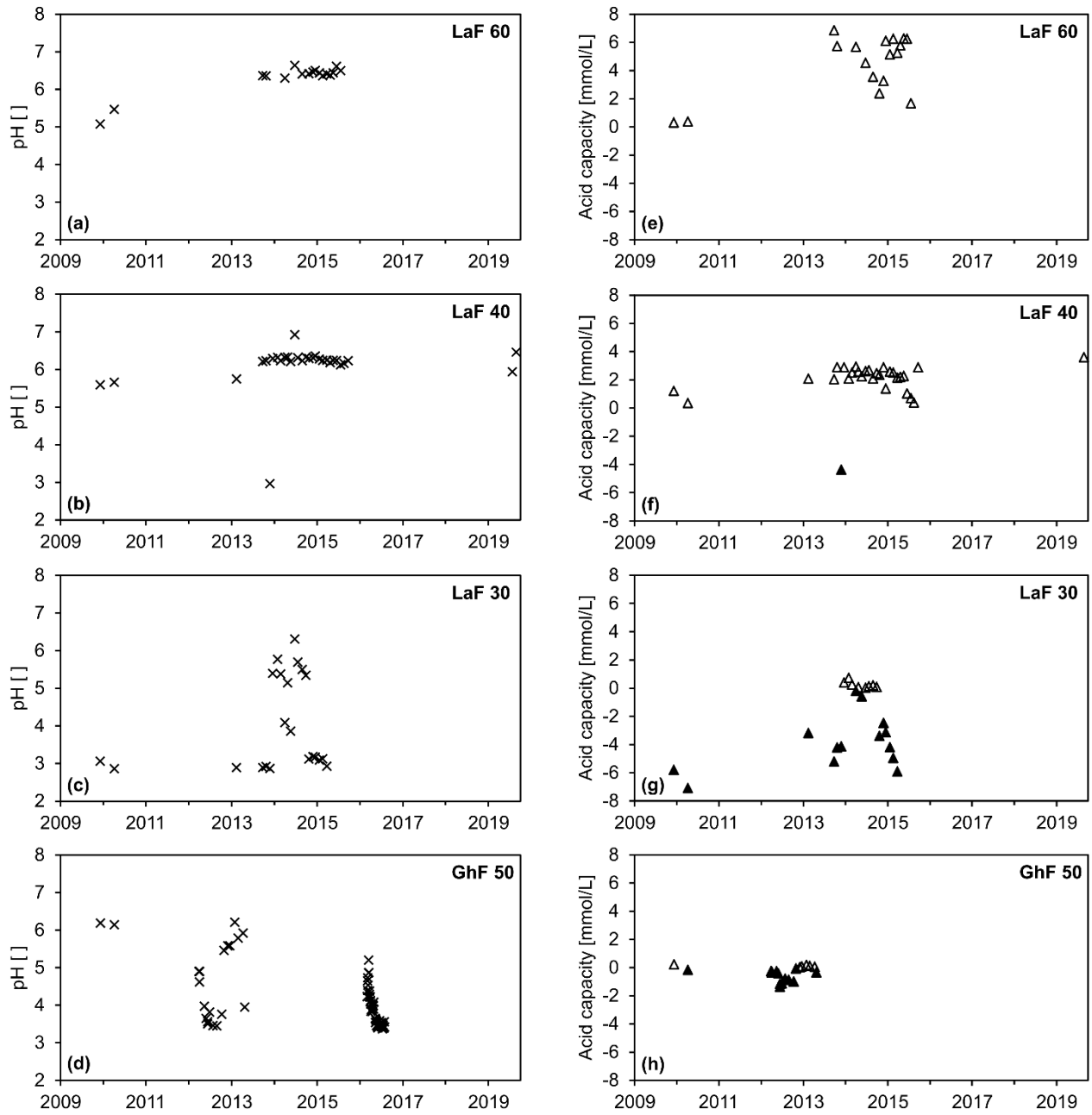


Fig. 1 Time series of pH (a, b, c, d) and acid capacity up to pH 4.3 (e, f, g, h) of surface water and groundwater. Filled triangles represent negative acid capacities up to pH 4.3 and empty triangles represent positive acid capacities up to pH 4.3 (based on LMBV mbH 2019, own measuring data)

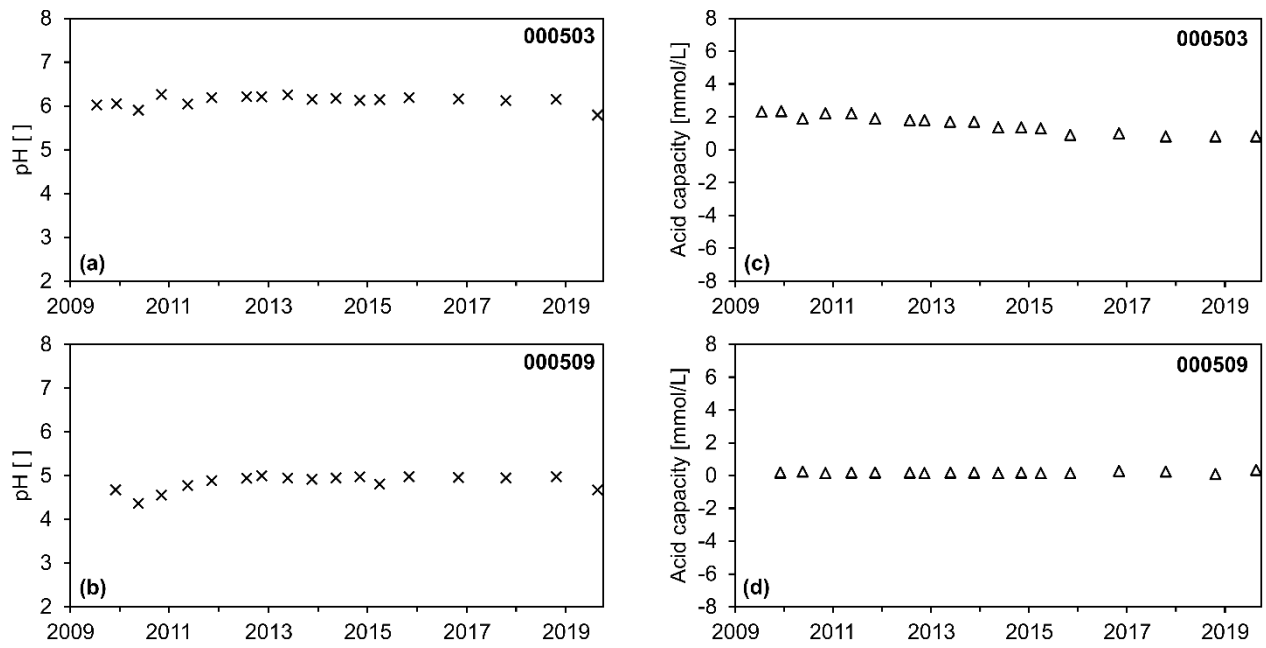


Fig. 2 Time series of pH (a, b) and acid capacity up to pH 4.3 (c, d) of groundwater. Empty triangles represent positive acid capacities up to pH 4.3 (based on LMBV mbH 2019, own measuring data)

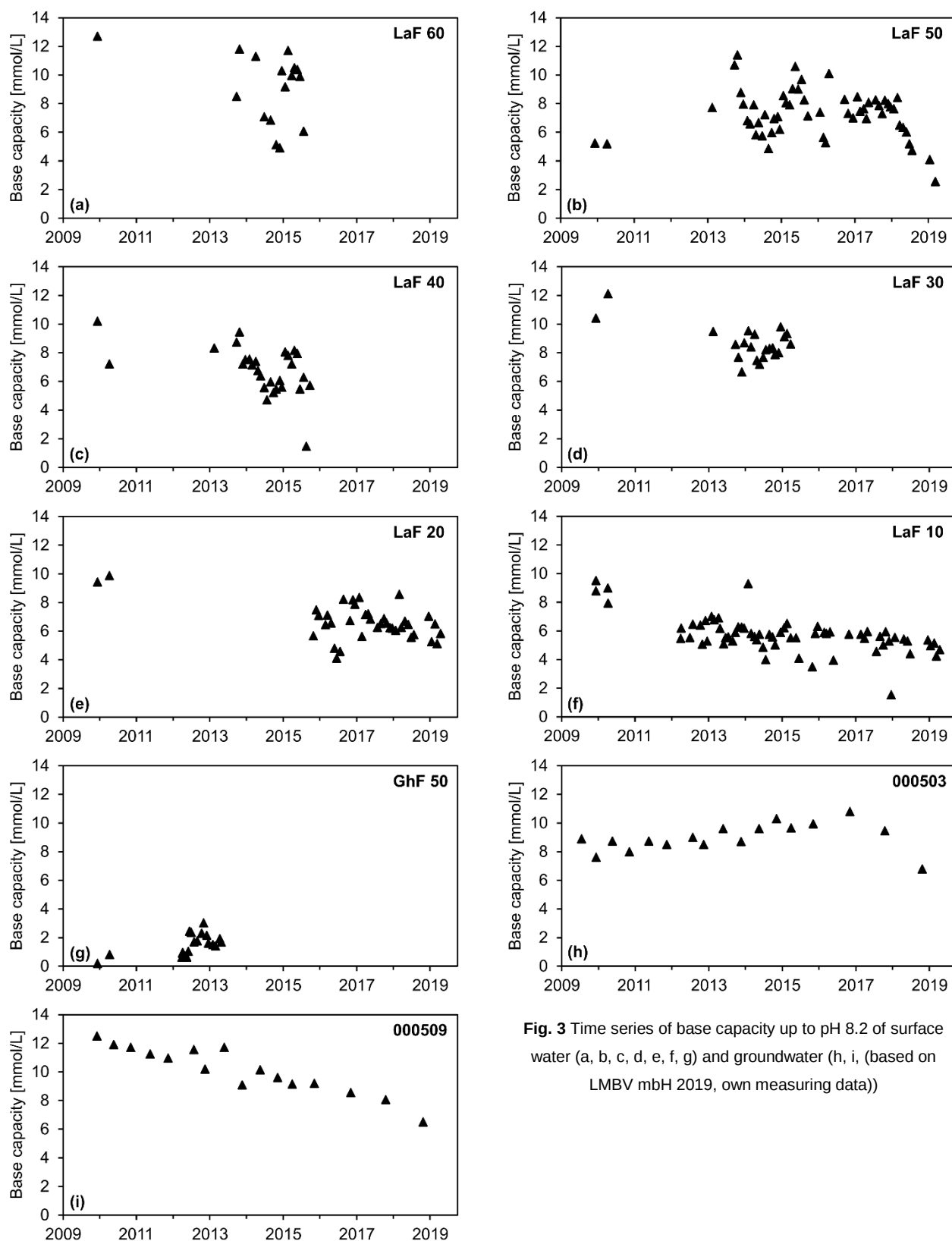


Fig. 3 Time series of base capacity up to pH 8.2 of surface water (a, b, c, d, e, f, g) and groundwater (h, i, (based on LMBV mbH 2019, own measuring data))

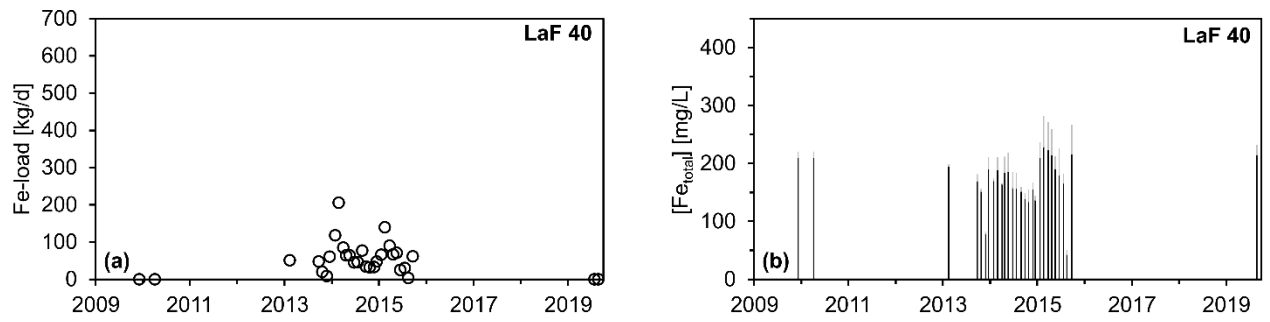


Fig. 4 Time series of iron loads (a) and total iron concentrations (b) of LaF 40. Grey bars represent the total undissolved iron concentrations while black bars represent total dissolved iron concentrations (based on LMBV mbH 2019, own measuring data)

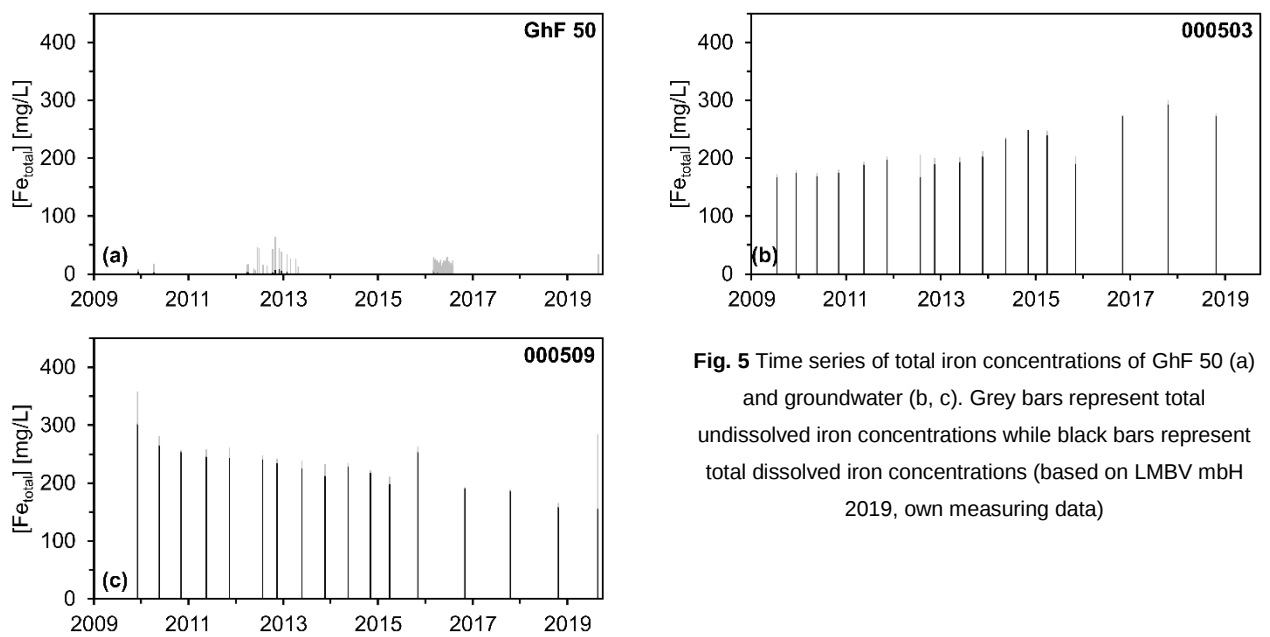


Fig. 5 Time series of total iron concentrations of GhF 50 (a) and groundwater (b, c). Grey bars represent total undissolved iron concentrations while black bars represent total dissolved iron concentrations (based on LMBV mbH 2019, own measuring data)

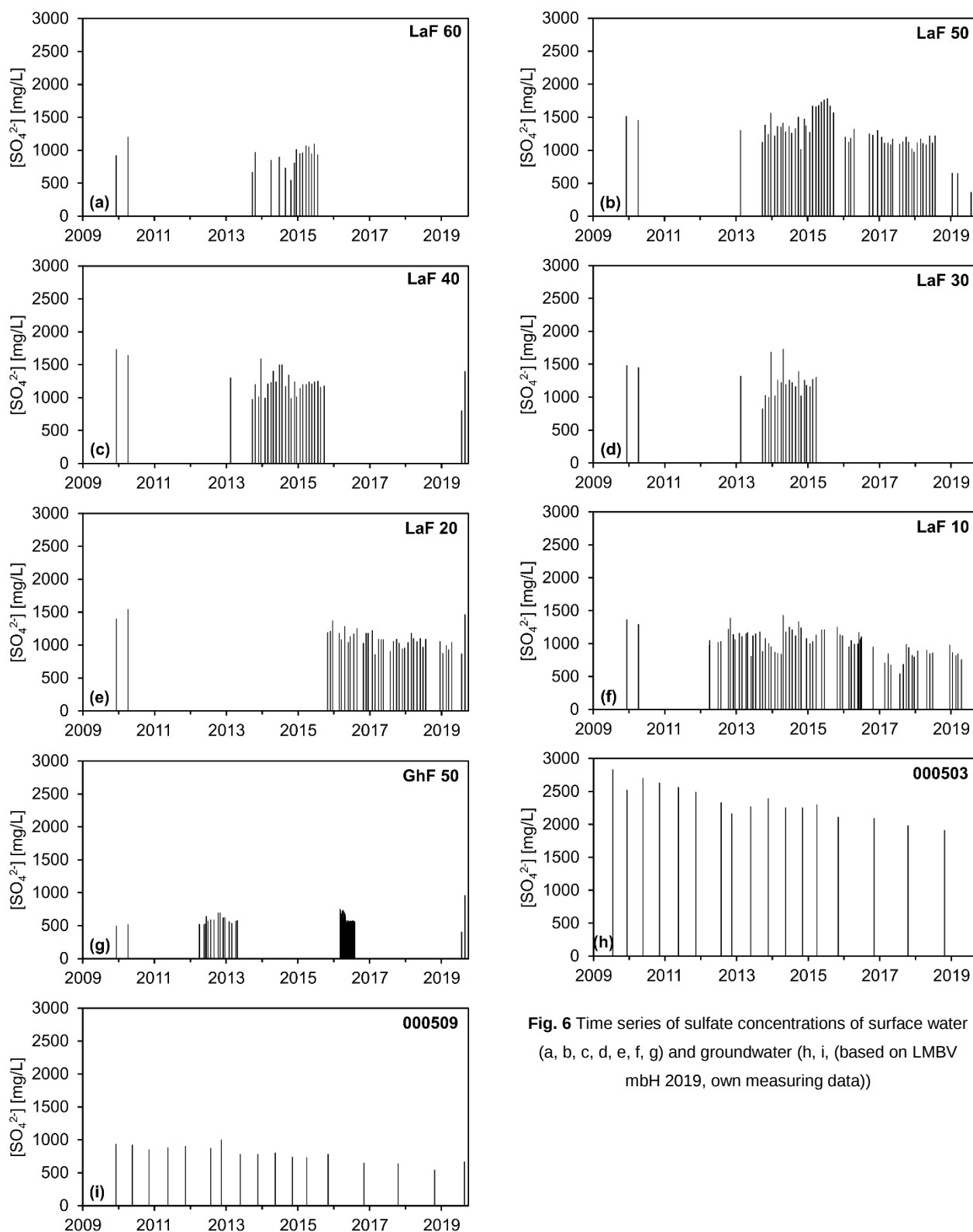


Fig. 6 Time series of sulfate concentrations of surface water (a, b, c, d, e, f, g) and groundwater (h, i, (based on LMBV mbH 2019, own measuring data))

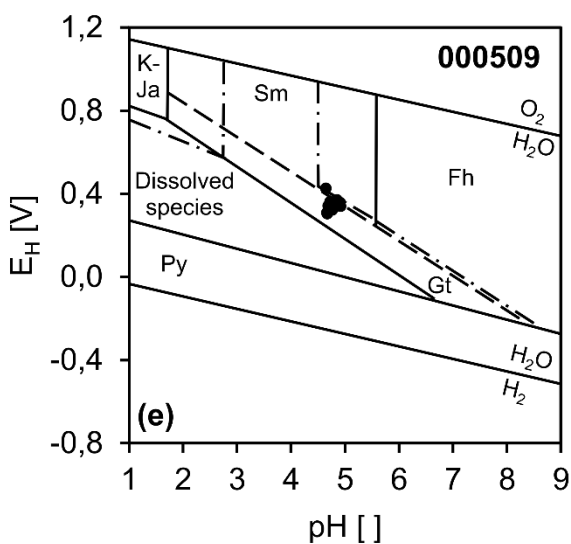
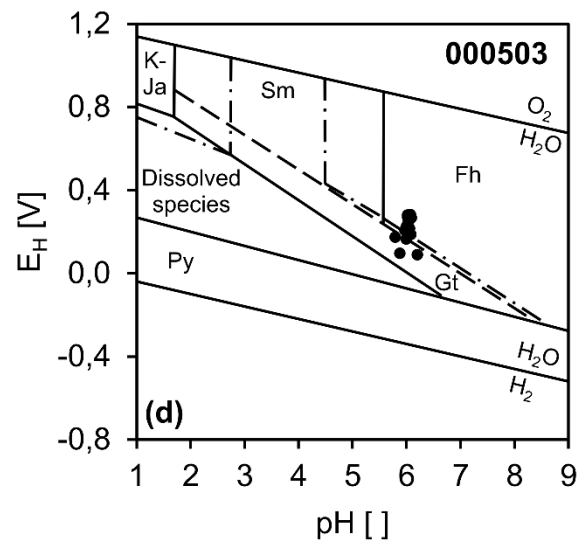
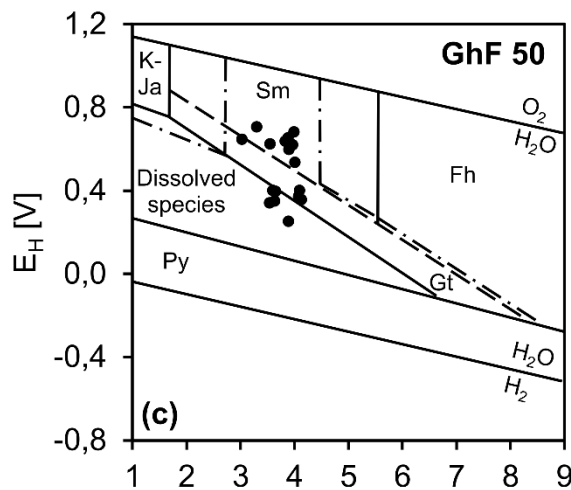
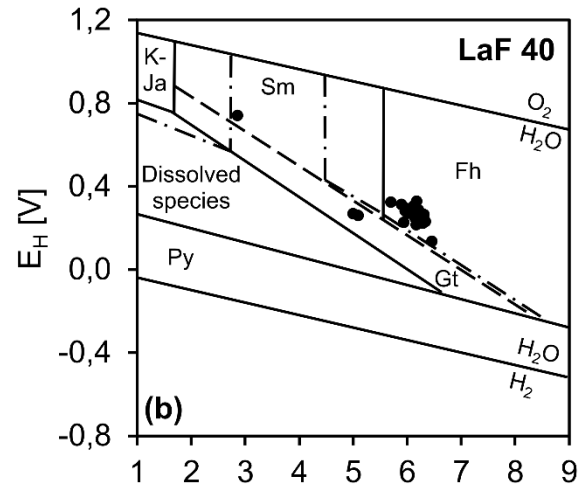
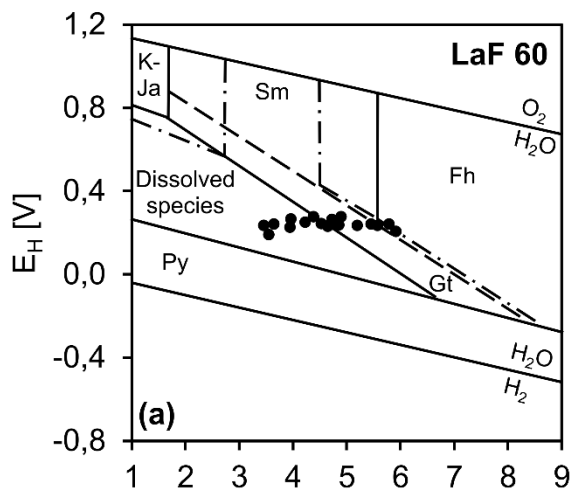


Fig. 7 E_h -pH diagram for the Fe-S-K-O-H system at 25 °C of surface water (a, b, c) and groundwater (d, e), plotted with long-term data from 12/09 to 08/19. Stability fields have been adapted from Bigham et al. 1996. K-Ja... K-jarosite, Sm... schwertmannite, Fh... ferrihydrite, Gt...goethite, Py... pyrite. The dashed lines show the metastability field, the dotted dash lines represent the expanded stability fields of K-jarosite and ferrihydrite depending on sulfate concentrations et al. (Bigham et al. 1996, based on LMBV mbH 2019, own measuring data)