



Supplement of

Forecasting changes of the flow regime at deep geothermal wells based on high resolution sensor data and low resolution chemical analyses

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Supplementary Information

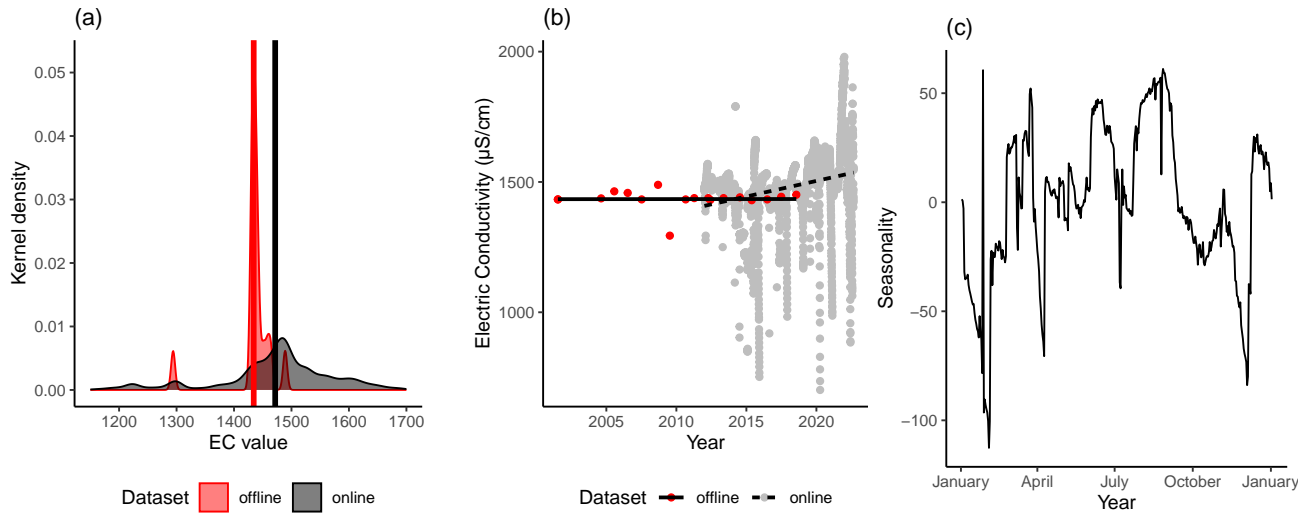


Figure S 1. a) Density histograms of both online and offline data at BF2. b) Timelines and linear trend lines of EC-concentrations calculated for online and offline data. c) Seasonal component of time series decomposition analysis.

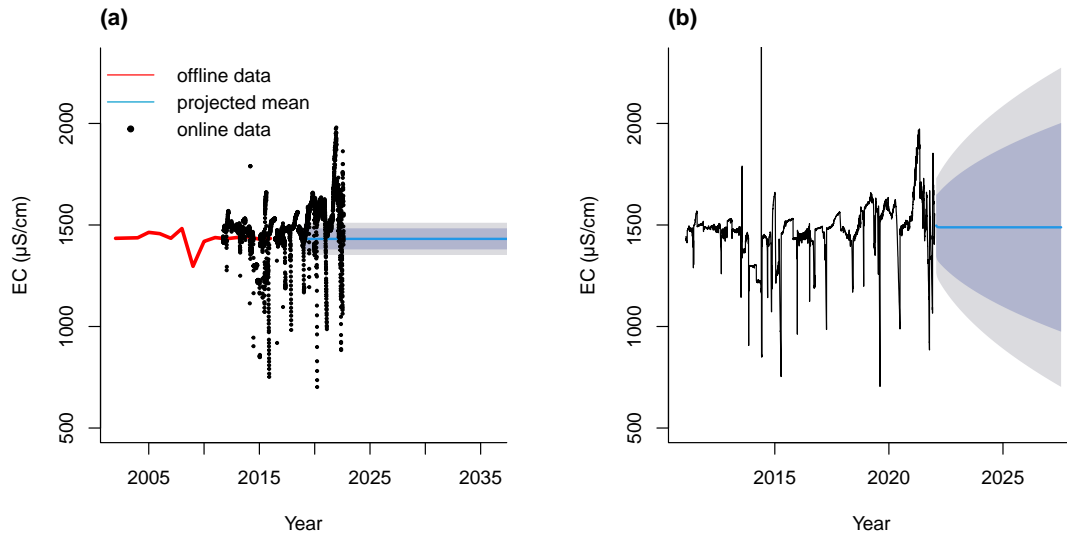


Figure S 2. ARIMA forecasts for EC values at the well BF2. The forecast ranges are depicted in light blue: 85% confidence interval; light grey: 95% confidence interval. a) forecast based on offline EC data, as well as overlaid online EC data. b) forecast based on online EC data.

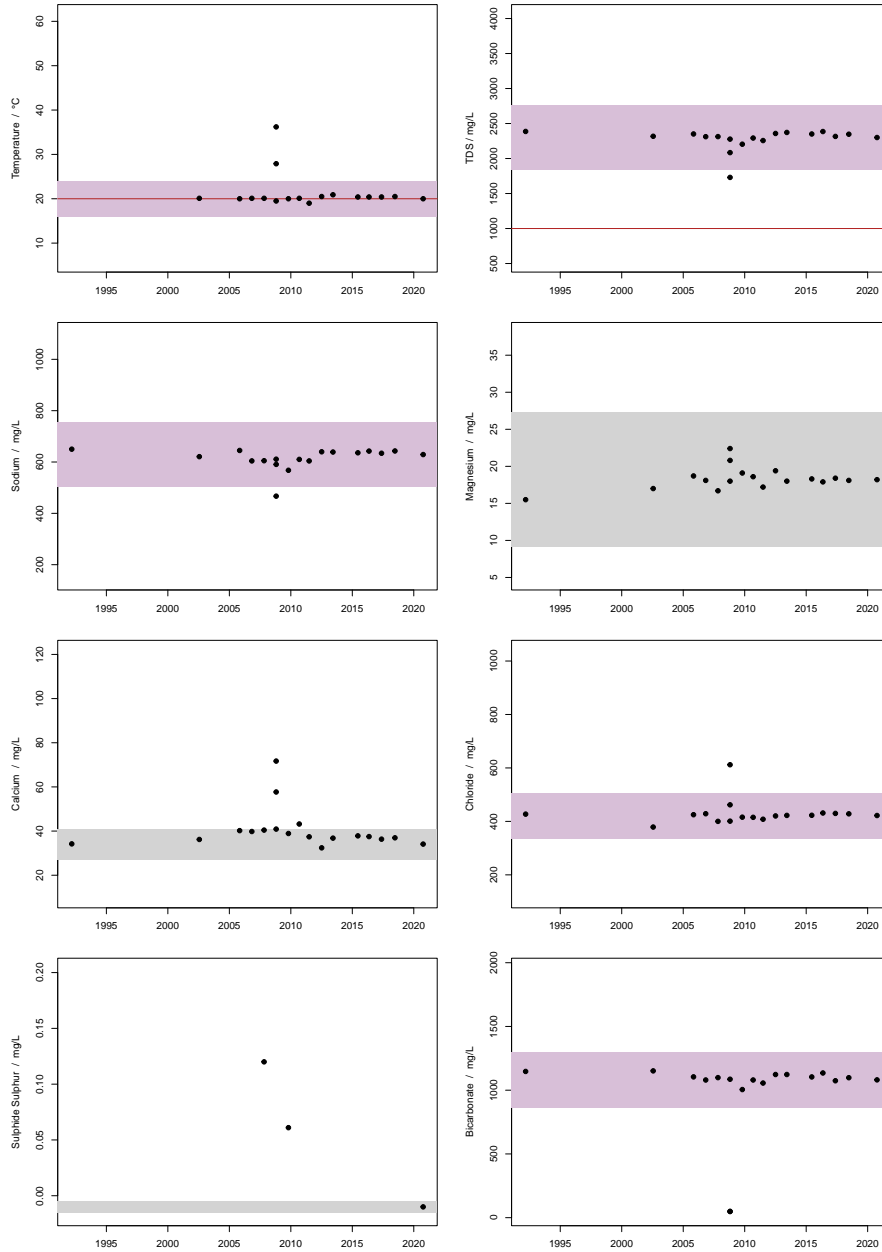


Figure S 3. Timeseries diagram for the main hydrochemical constituents at the well BAK. The allowed variation ranges for characteristic ions set in the recognition as healing water are shown in magenta, the variation ranges for ions which are not part of the recognition are shown in grey. Red horizontal lines indicate threshold values, which have to be exceeded for the recognition as healing water.

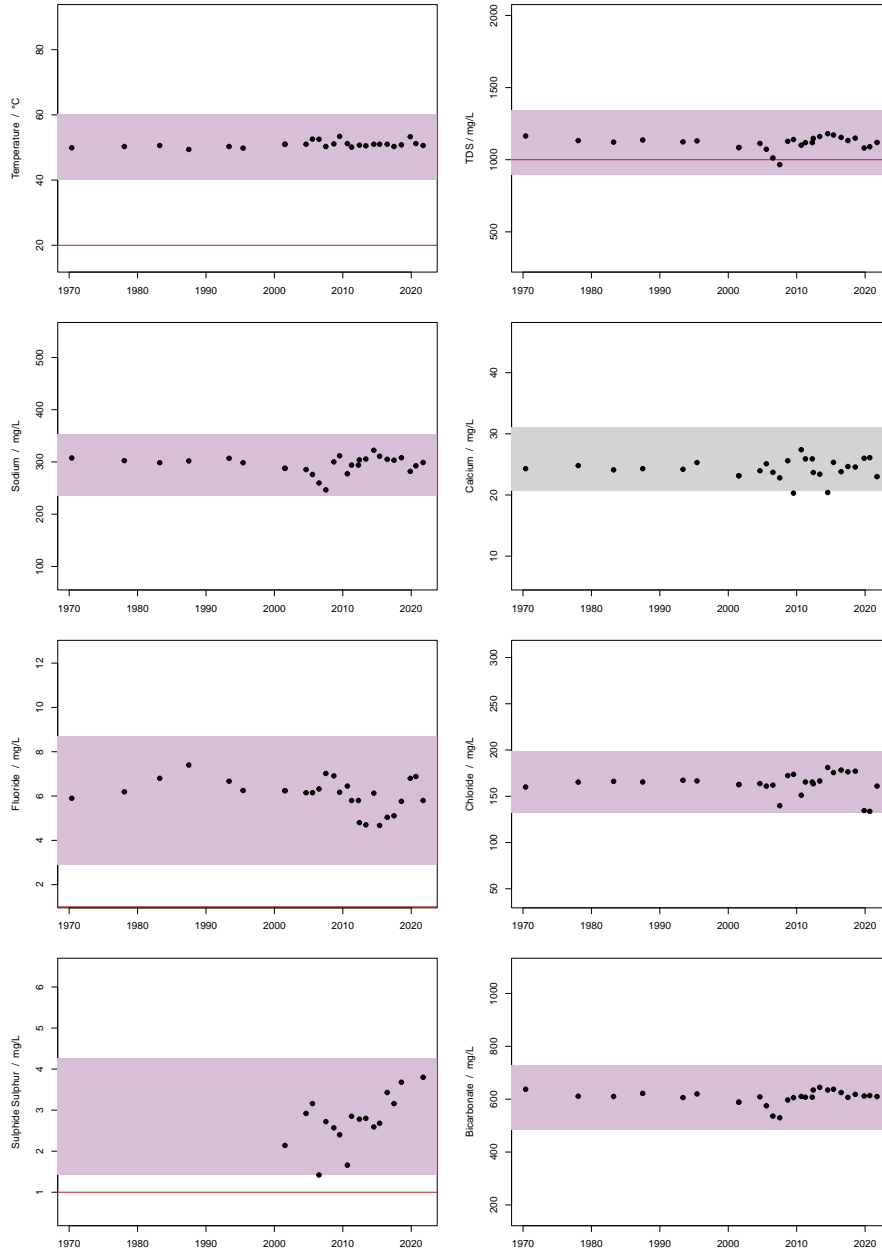
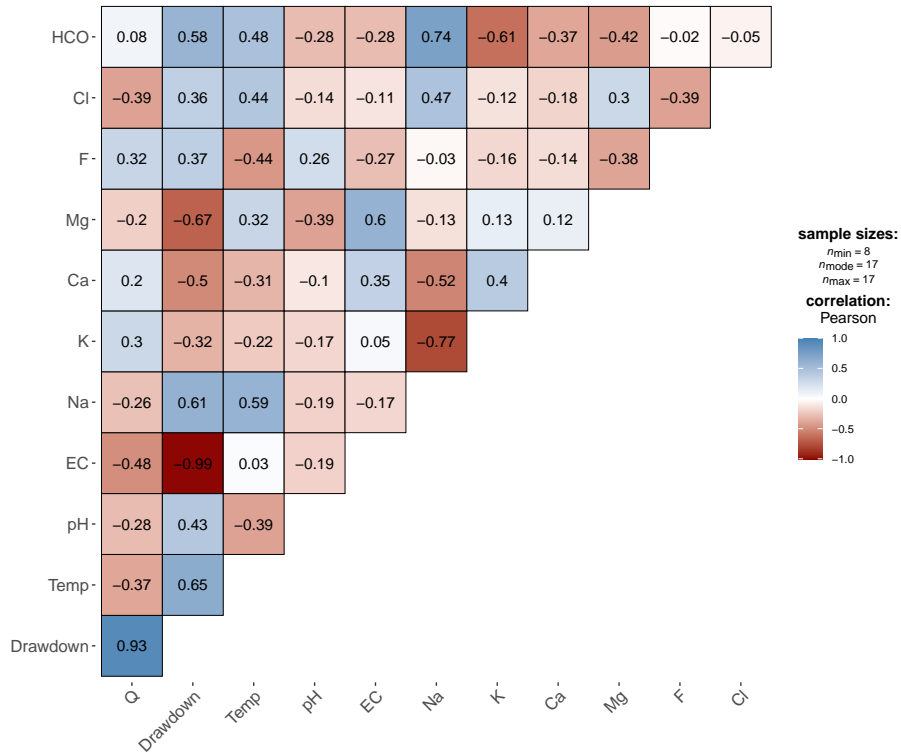


Figure S 4. Timeseries diagram for the main hydrochemical constituents at the well BF2. The allowed variation ranges for characteristic ions set in the recognition as healing water are shown in magenta, the variation ranges for ions which are not part of the recognition are shown in grey. Red horizontal lines indicate threshold values, which have to be exceeded for the recognition as healing water.



X = non-significant at $p < 1$ (Adjustment: Holm)

Figure S 5. Correlation diagram for well BAK.

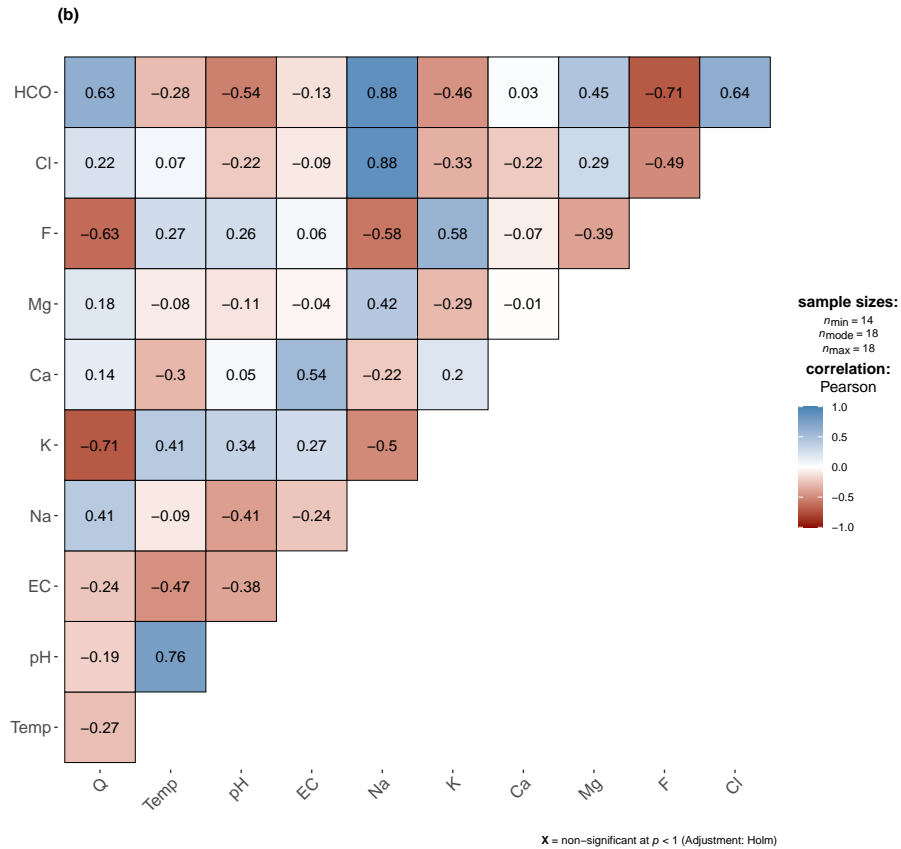


Figure S 6. Correlation diagram for well BF2. No drawdown data was available for this artesian well.