**Solution ICP-MS methods**

Concentrations of 48 trace elements (including rare earth elements) were determined by solution-mode inductively-coupled plasma mass spectrometry (ICP-MS) using the methods of Robinson et al., (1999) and Yu et at., (2000). Analyses were done on duplicate digestions after high-pressure dissolution with HF-HClO4 (Yu et al., 2001). Sub-boiling double distilled acids and ultrapure water were used, as were clean sampler and skimmer cones, ICP torch, spray chamber, nebulizer and sample introduction tubes (including auto-sampler tubing). Prior to sample analysis the instrument was purged for at least 25 hours with 5% v/v HNO3 and 0.05% v/v HF rinse solution. Analyses of international and secondary stands and detection limits are presented in Falloon et al., 2007.

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