

Table S2. Operating parameters for laser ablation inductively coupled plasma mass spectrometer at Tono Geoscience Center.

Laser ablation	
Model	Photon Machines Analyte G2
Laser type	Excimer laser
Pulse width	<5 ns
Wave length	193 nm
Laser power	20%
Energy density	2.0 J/cm ²
Spot size	20 µm
Sampling mode	single spot
Repetition rate	10 Hz
Duration of laser ablation	20 s
Carrier gas (He)	1.0 L/min
ICP-MS	
Model	Thermo Fisher Scientific Neptune- <i>Plus</i>
ICP-MS type	Multiple collector
RF power	1600 W
Make-up gas (Ar)	1.0 L/min
Data acquisition protocol	Time-resolved analysis
Data acquisition	32 s (11 s gas blank, 20 s ablation)
Monitor isotopes	²⁰² Hg (CDD), ²⁰⁴ Pb (CDD), ²⁰⁶ Pb (SEM), ²⁰⁷ Pb (SEM), ²⁰⁸ Pb (SEM), ²³² Th (FC), ²³⁸ U (FC) CDD: Compact Discrete Dynode, SEM: Secondary Electron Multiplier, FC: Faraday Cup
Integration time	0.066 s × 700 ratios
Standards	
Primary standard	Nancy 91500 ^{*1}
Secondary standard	OD-3 ^{*2-4}