Appendix Table 1. Instrument, instrument conditions, and standards for electron probe analyses

Electron probe micro-analysis (EPMA) was done using the Cameca SX50 at the University of Massachusetts. This is a five wavelength-dispersive spectrometer instrument, automated via Cameca's SXRayN50 software (Sun-Unix platform). Analysis was performed using a 15kV, 20nA focused beam. Count times were 20 s for all elements. Corrections for differential matrix effects were done using the PAP routine (Pouchou and Pichoir 1984). Detection limits were calculated using the method of Ancey (1978). Analyzing monochromators, standards and minimum detectability limits (MDL) are summarized in the table below

				Atomic	Oxide
element	**line**	**xtal**	**Std**	**MDL**	**MDL**
K	Ka	PET	sanidine (P-28)	0.0234	0.0282
Si	Ka	TAP	pg721 (kiglapait labradorite)	0.0208	0.0445
Al	Ka	TAP	albite (P103-Amelia)	0.0315	0.0595
Ti	Ka	PET	tio2 (P530-synthetic)	0.0281	0.0469
V	Ka	PET	V	0.0340	0.0500
Fe	Ka	LIF	fayalite-rockport	0.0917	0.1180
Mn	Ka	LIF	rhodonite AMNH 41522	0.0666	0.0860
Cr	Ka	LIF	52-nl11 (chromite-Stillwater)	0.0546	0.0798
Zn	Ka	LIF	ZnO (P471)	0.1647	0.2050
Ca	Ka	PET	pg721 (kiglapait labradorite)	0.0243	0.0340
S	Ka	PET	Pyrite-MAC	0.0310	
Mg	Ka	TAP	crcats (diopside-synthetic)	0.0706	0.1171
Ni	Ka	LIF	nio (synthetic)	0.0709	0.0902
Nb	La	PET	Nb	0.1282	0.1834
Ta	La	LIF	Ta	0.3308	0.4039