

**Code 4C**

To minimize the matrix effects of the samples, the heavy absorber fusion technique of Norrish and Hutton (1969, Geochim. Cosmochim. Acta, volume 33, pp. 431-453) are used for major element (oxide) analysis. Prior to fusion, the loss on ignition (LOI), which includes H₂O+, CO₂, S and other volatiles, can be determined from the weight loss after roasting the sample at 1050°C for 2 hours. The fusion disk is made by mixing a 0.5 g equivalent of the roasted sample with 6.5 g of a combination of lithium metaborate and lithium tetraborate with lithium bromide as a releasing agent. Samples are fused in Pt crucibles using an automated crucible fluxer and automatically poured into Pt molds for casting. Samples are analyzed on a Panalytical Axios Advanced wavelength dispersive XRF

The intensities are then measured and the concentrations are calculated against the standard G-16 provided by Dr. K. Norrish of CSIRO, Australia. Matrix corrections were done by using the oxide alpha - influence coefficients provided also by K. Norrish. In general, the limit of detection is about 0.01 wt% for most of the elements.

Code 4C Oxides and Detection Limits (%)

Oxide	Detection Limit
SiO ₂	0.01
TiO ₂	0.01
Al ₂ O ₃	0.01
Fe ₂ O ₃	0.01
MnO	0.001
MgO	0.01
CaO	0.01
Na ₂ O	0.01
K ₂ O	0.01
P ₂ O ₅	0.01
Cr ₂ O ₃	0.01
V ₂ O ₅	0.003
LOI	0.01