



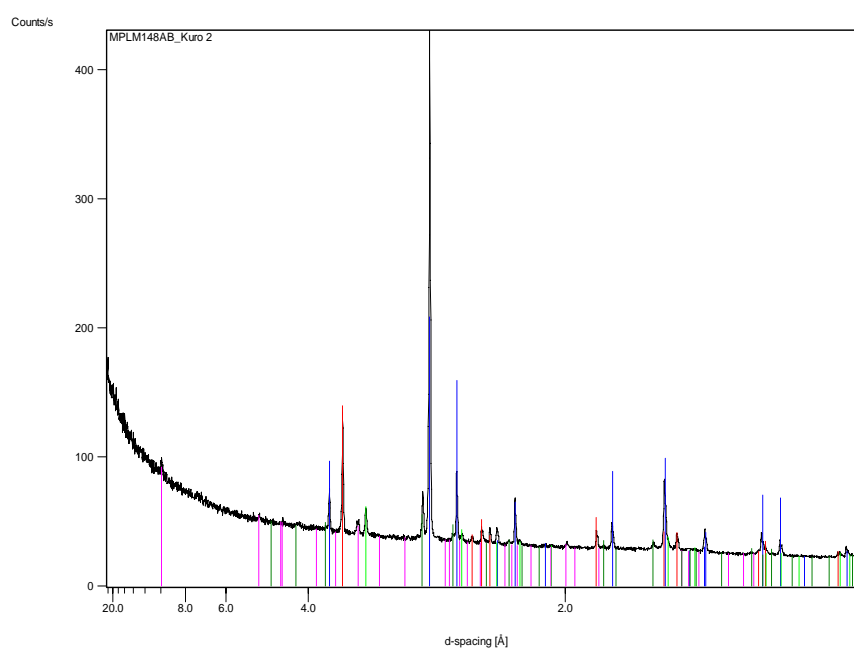
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XRD analysis of mineral samples from the Meda Welabu Woreda district, SE Ethiopia

Economic Minerals Programme

Internal Report IR/06/093



BRITISH GEOLOGICAL SURVEY

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INTERNAL REPORT IR/06/093

XRD analysis of mineral samples from the Meda Welabu Woreda district, SE Ethiopia

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XRD trace for the sample Kuro
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1 Introduction

This report presents the results of X-ray diffraction (XRD) analysis of three mineral samples submitted by A G Gunn (BGS). The samples were collected in the Oromia Regional State, Meda Welabu Woreda District of SE Ethiopia and are listed in Table 1.

Table 1: Sample list

Sample	Location	BGS lab code
Kuro 1	UTM 558081E, 661237N	MPLM147
Kuro 2	UTM 558081E, 661237N	MPLM148
Kus-007a	UTM 560135E, 667171N	MPLM149

2 Sample preparation

A small fragment of each sample was hand-ground using a pestle and mortar and mounted using a drop of acetone onto a zero-background silicon wafer.

3 X-ray diffraction analysis

XRD analysis was carried out using a PANalytical X'Pert Pro series diffractometer equipped with a cobalt-target tube, X'Celerator detector and operated at 45kV and 40mA.

The samples were scanned from 4.5-85 °2 θ at 2.76 °2 θ /minute. Diffraction data were analysed using 2004 PANalytical X'Pert Highscore Plus software coupled to the latest version of the International Centre for Diffraction Data (ICDD) database.

4 Results

The Appendix contains an illustrated X-ray diffraction trace for each sample.

The results of XRD analysis are given in Table 2.

Table 2: XRD results

Sample	BGS lab code	Mineralogy
Kuro 1	MPLM147	Anatase, ?xenotime and minor quartz; this sample may also contain some amorphous material (glass?).
Kuro 2	MPLM148	Anatase, minor rutile, minor 'mica' and minor ilmenite; this sample also contains hematite, presumably as the brownish surface coating.
Kus-007a	MPLM149	Anatase, ilmenite, minor rutile, minor calcite; this sample also contains amorphous material (glass?)

'mica' = undifferentiated mica species

Appendix

Key to the whole-rock X-ray diffraction traces:

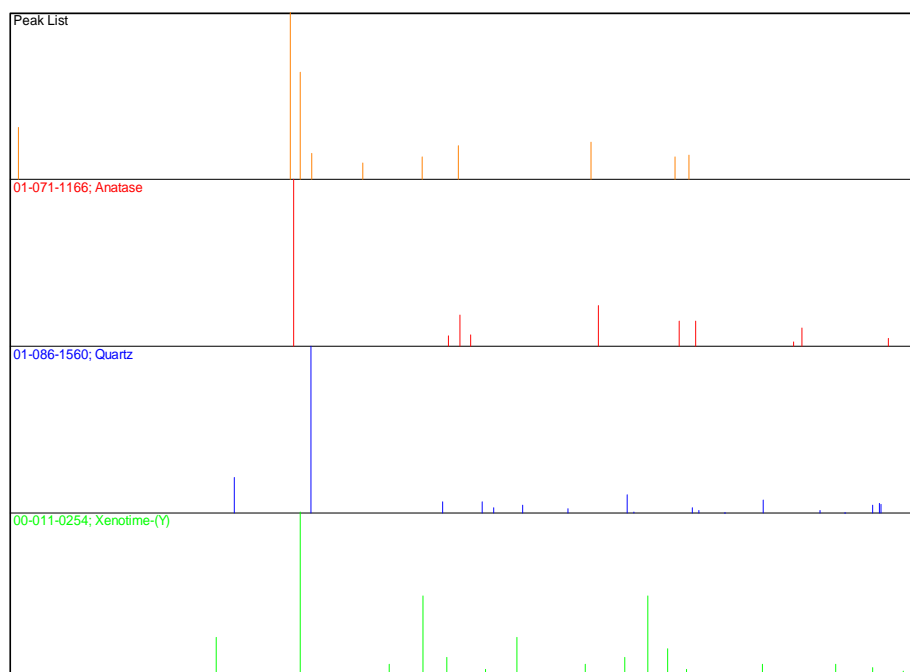
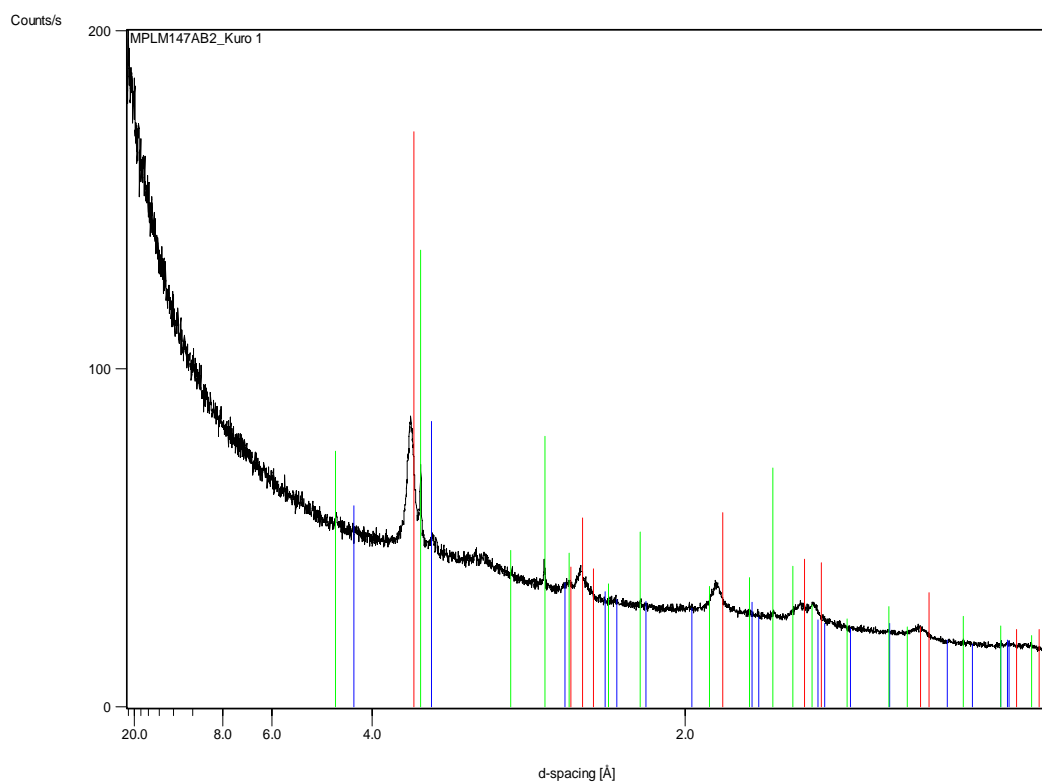
X-axis: d-spacing (\AA)

Y-axis: (Intensity) counts per second

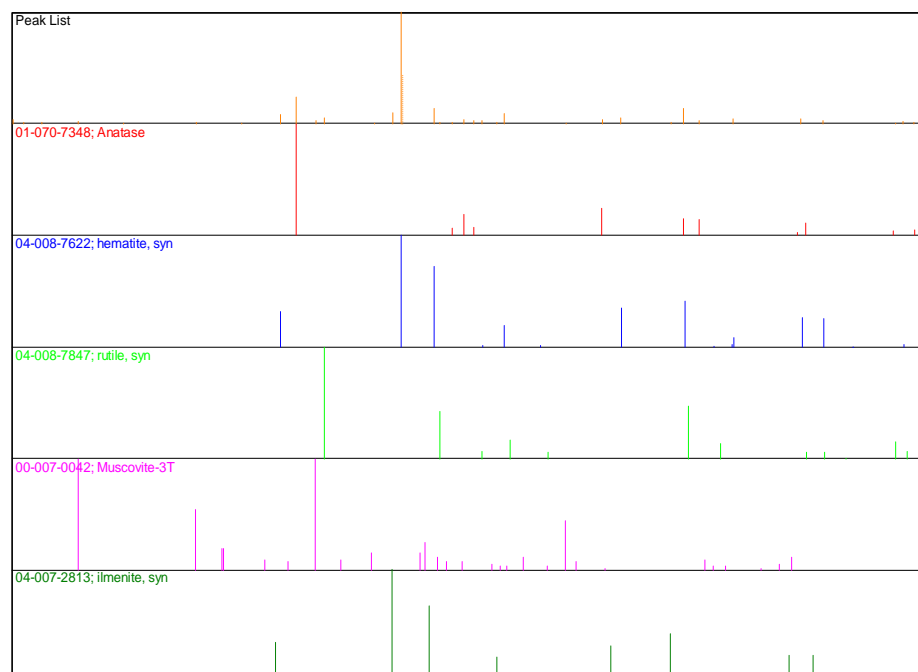
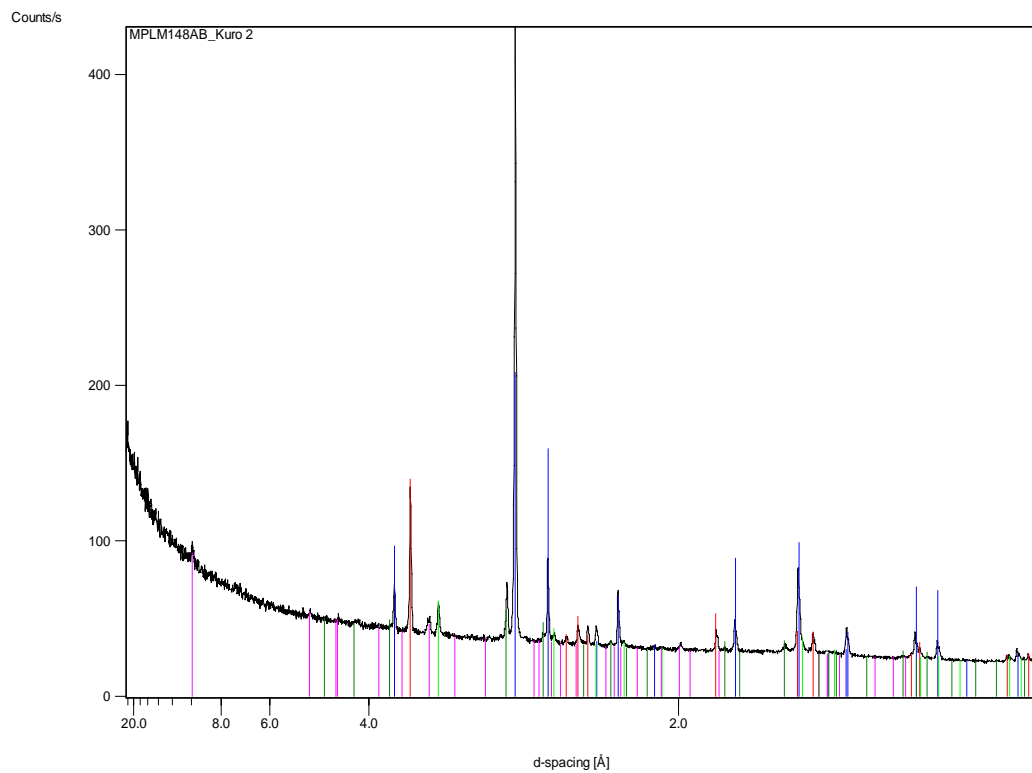
Black trace: whole-rock powder

Other traces: ICDD reference patterns (see plot below for details)

Kuro 1



Kuro 2



Kus-007a