Searching for kimberlites in SW Mali

In April 2006, BGS began a 19-month project under a European Development Fund (EDF) SYSMIN Programme with the aim of determining whether airborne geophysical data can be used to detect concealed Kimberlite intrusions. Kimberlites are a potential source of diamonds, but they are of rare occurrence. An earlier EDF-funded project had identified a number of interesting aeromagnetic anomalies in the Bougouni region of southernmost Mali in sub-Saharan West Africa. The form of these anomalies, together with the reported discovery of some alluvial diamonds in the region, raised the possibility that they might indicate the presence of concealed Kimberlite ‘pipes’. BGS re-evaluated the airborne geophysical data with a view to identifying a prioritised list of targets for further detailed examination. This latter activity has involved ground geophysics together with the digging of trial pits at 40 sites for sampling purposes. The samples have been analysed for so-called Kimberlite indicator minerals, but to date, no evidence has been found that would indicate the presence of concealed kimberlites beneath the deeply weathered regolith of the region. Scarce outcrops of intrusive ultramafic and mafic rocks may help to account for the geophysical anomalies.

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(Project title and duration: Interpretation of airborne geophysical data for mapping Kimberlite prospectivity in the Bougouni region of SW Mali, 2006–07)

Trial pit south-east of Bougouni
Photo: Mick Strutt (BGS), May 2007