



## GEOPHYSICAL MAPPING

The Geophysical Mapping Branch is an integral part of the Geological Survey Division, tasked with the acquisition, archiving and dissemination of geo-science related data.

The Branch plays an inter-disciplinary role between the Geological Mapping and Exploration Branch, and the Geotechnical and Hydrological Branches. The Branch provides support services to these Branches by acquisition of geophysical data relevant to the respective branches, processing them and also interpretation them to relate to the geology of the study area.

The Geophysical Mapping Branch has a staff of four geophysicists who ensure that client needs are attended to efficiently and in a professional manner.

### CORE FUNCTIONS

The core functions of the Geophysical Mapping Branch are:

1. Provide support services to the Geological Mapping and Exploration Branch, and the Geotechnical and Hydrogeology Branches
2. Acquire, archive and disseminate geophysical data (airborne, land and marine) acquired by large exploration companies
3. Provide technical advice to clients on geophysical signatures in areas of interest
4. Plan and execute small-scale geophysical surveys for clients interested in geotechnical engineering and groundwater investigations.



**Some components of electrical resistivity surveying equipment.**

### SUPPORT SERVICES

The Geophysical Mapping Branch is able to provide the following support services:

- Process and interpret data obtained from large-scale regional geophysical surveys, including airborne magnetics, radiometrics, and electromagnetics.
- Process and interpret land gravity data
- Process and interpret marine magnetics and gravity data
- Plan and undertake seismic refraction studies for geotechnical engineering investigations
- Plan and undertake electrical methods surveys for groundwater investigations

### EQUIPMENT AND OPERATIONS

The branch has field equipment for different purposes and uses Geosoft Oasis Montaj for data processing and interpretation. Field operations are arranged upon client request or where it is relevant to acquire data for updating of the geophysical database.



**Magnetic susceptibility meter**

**Taking magnetic susceptibility measurement of rock samples**

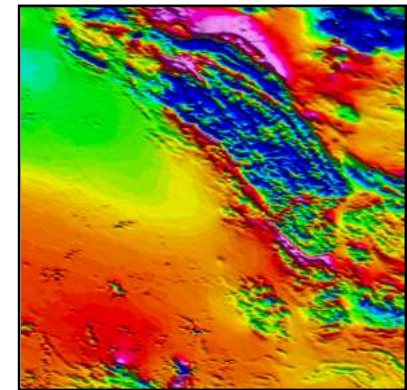


### RESPONSIBILITIES

Staff members are currently responsible for;

1. Updating of geophysical database at the end of every month
2. Processing all incoming datasets within two weeks of acquisition
3. Updating all metadata for existing geophysical database
4. Providing a summary of incoming datasets, and updating the meta data tables.
5. Make copies of incoming datasets within two weeks of acquiring them from clients
6. Providing a summary of current status of geophysical data compilation and identification of areas not surveyed by the end of each year
7. Acquiring, processing, integrating and updating geophysical data coverage by the end of each year
8. Using current datasets (e.g. provided by Fugro) to identify areas which may require further ground geophysical surveys
9. Providing an interpretation for anomalies in current datasets.

Sample Map:



*Fig 1: Magnetic RTP (reduced to the pole) for Goroka.*