Glass Earth Gold LIMITED

A science driven **gold** exploration company

CSAMT RESISTIVITY

INTRODUCTION

Resistivity is used to map electrical properties of the subsurface allowing information to be obtained about the soil and rock underground.

Resistivity measures how easily (or not) electrical current passes through a material. Fresh rock is generally a poor conductor of electricity, so has a high resistivity. On the other hand, metallic materials are good conductors and therefore have low resistivity.

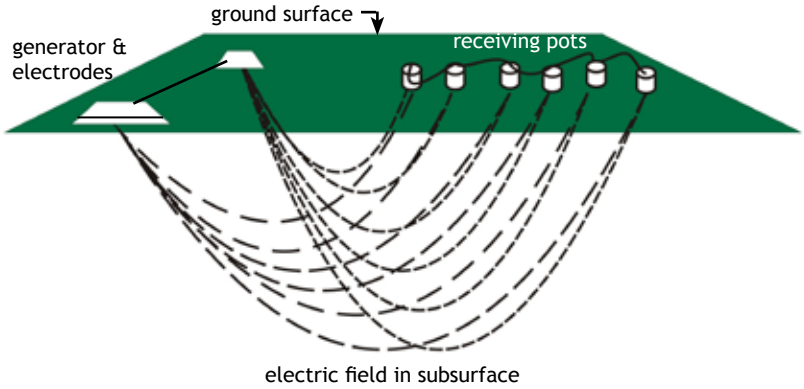
Resistivity surveys have very little environmental impact. The electrodes and generator may remain at each location for a couple of weeks, the pots and wire for a couple of hours. When the survey is finished, all that is left behind is the footprints of the survey team.

THE SCIENCE

Electrical current from batteries or a generator is put into the ground using two electrodes. These produce an electrical field which radiates out and can be measured over a considerable distance.

Several kilometres away, a line of ceramic pots linked together by a wire are placed on the ground. These pots can pick up the changes in electricity as it passes through the ground from the generators to the point where they are located.

The depth at which measurements can be made down into the ground depends on the frequency of the electrical field generated at the source.

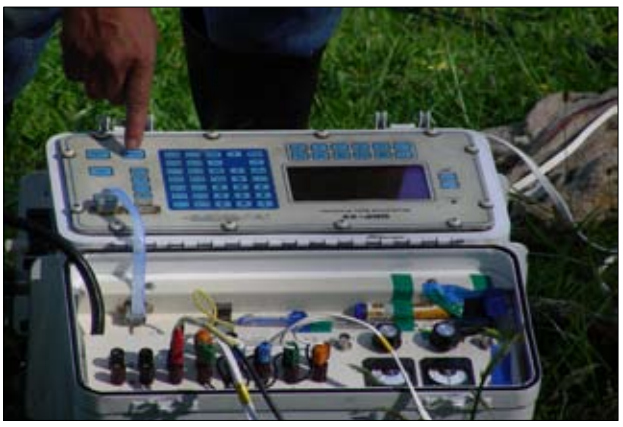


electric field in subsurface

SETTING UP A SIMPLE RESISTIVITY SURVEY

Electrodes (ceramic pots) are placed a few inches into the ground, spaced at the appropriate intervals, and “watered” to improve electrical contact if necessary.

The survey crew use 4 reels each containing about 250 metres of water and heat resistant silicon-coated wire. Alligator clips at the leading end of the wire are attached to the electrodes. Wire is then reeled out and the reels left close to the resistivity meter. The wire reels are then hooked up to the resistivity meter, which is powered by a rechargeable battery. The reels connect to the resistivity meter by short wire leads with banana clips on either end.



above left: ceramic pot receiver

left: resistivity meter

right: technicians dig small holes for the receiver pots and collect small samples of soil, while the geophysicist takes the measurements

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E-SCAN® DC RESISTIVITY

INTRODUCTION

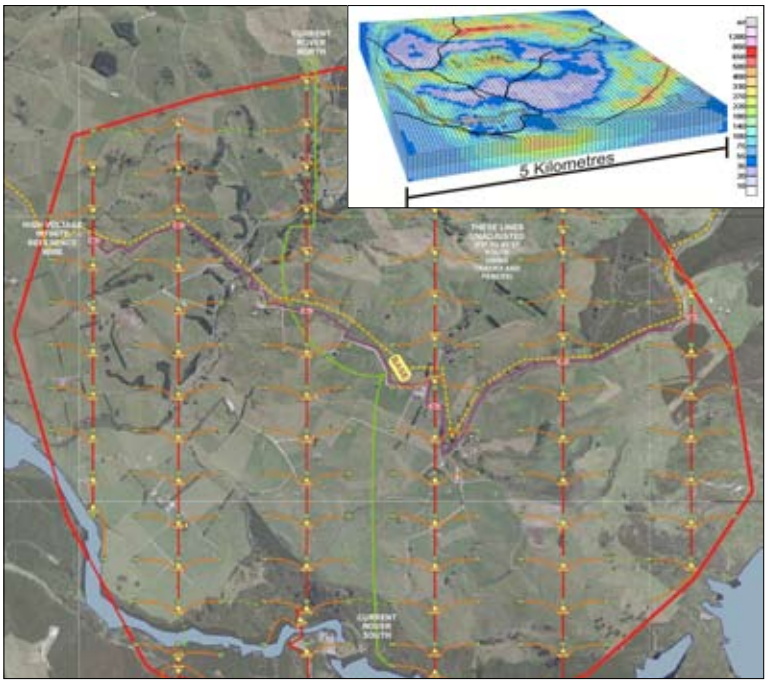
E-SCAN® is a new generation 3-D resistivity survey method that has been designed specifically for epithermal gold and geothermal resource evaluation, by Premier Geophysics Inc. A "usual" resistivity survey as described on the reverse of this document involves the definition of survey lines, located according to the geologists' and geophysicists' interpretation of the orientation of the underground geological features (such as faults) they wish to gather information about. E-SCAN® is a totally different technique, and doesn't require that particular interpretation before launching the survey.

THE SCIENCE AND SET-UP OF AN E-SCAN® RESISTIVITY SURVEY

The principle of an E-SCAN® survey is to conduct a multitude of resistivity readings in one go: the electrodes mentioned earlier are laid out in a grid pattern (see diagram) of usually 300m by 300m spacing, flagged for visibility and interlinked by lengths of wire.

The wires are connected to a generator placed in a vehicle on the edge of the grid, and electrical current is injected into the ground from one station (electrode) at a time. The electrical current is sent to all the other electrodes, measuring resistivity between a multitude of locations in all orientations.

The duration of an E-SCAN® survey for a 20km^2 survey area is approximately 14 days. A crew of 5 to 6 people are employed to set up the wire grid, using 2 ATVs to transport the equipment. No disturbance is caused to the land and there is no evidence of the survey at completion of the programme.



current is injected from each station (yellow and green) - the current travels through the subsurface, and is measured at each receiving electrode (green)
inset: example of 3-D data view obtained

The technician uses a GPS to check his position and prepares the electrode - it is then flagged and linked to another electrode with wire, following fences and tracks.

This technique provides the geophysicist with a 3D "map" of the resistivity of the underlying features, as opposed to the 2D result obtained with usual resistivity surveys. Basically, where usual surveys provide an X-ray of a "slice" of the subsurface, E-SCAN® produces the CAT scan of a whole target area's underground structure.