

## Very large scale gradient array IP surveys in the Orange District NSW.

SMEDG - Steve Collins 28 October 2010

For the more than a year various rumors about a planned large scale gradient array Induced Polarisation survey near Orange have been circulating in the exploration industry. The survey is to be run over a large tract of land currently held under Exploration Licences by Gold and Copper Limited.

It is popularly believed that a survey on the scale planned is not possible in such a highly populated area. The difficulties involved in using electrical geophysical systems over distances far in excess of 10 kilometres, often traversing many landowners holdings, roads and other infrastructure, are large. This talk explains the rationale behind the planned survey and summarises the logistics and engineering difficulties involved and how these are being overcome.

Planning for the survey has been done and preliminary test surveys have been carried out. Initial surveys are expected to have commenced by the date of this presentation.

The talk covers the theoretical basis for believing that this survey will obtain effective earth penetrations of about two kilometres in exploration for porphyry copper/gold systems. A comparison with other forms of IP surveying is made and suggested follow up procedures are also discussed, should the survey detect an IP signature at depth that may be related to a porphyry system.

Steve Collins is a Sydney based geophysical consultant with more than 30 years experience in mineral exploration in NSW, Australia and overseas. He is very familiar with the geological, geophysical and logistic environment in the Orange district and has recently been involved in several broad scale 3D IP surveys in the district. Steve is a SMEDG committee member.

Steve was initially skeptical about the chances that such a survey could be run because of logistic difficulties. He is now of the opinion that it is not only possible, but if completed will produce a subsurface map of the area to be covered that will be at least as useful for deep exploration as the airborne magnetic maps of the district.