

COMBINED RESISTIVITY AND CHARGEABILITY LOGS IN MINERAL PROSPECTING

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Resistivity is one of the most commonly used geophysical drill hole logging parameters in mineral prospecting. Its variation is frequently at least five orders of magnitude in almost any hole. It is sensitive even to very slight ore mineral concentrations and as such it is an efficient supporting parameter when checking drill cores. Altered zones cause more reliably visible anomalies in resistivity than in most other logs, and cracks and fractures cause their own anomalies. The general view of different rock types is often characteristic. Still there are cases when supporting information is needed to make a difference between two or more possible anomaly sources. Due to equivalence, a thin layer of conducting minerals can cause an anomaly that is not readily discernible from an anomaly of a thicker layer of moderately conducting minerals. Furthermore, a drop of resistivity level can be caused by either, say, disseminated ore or by unmineralized altered zone. If a chargeability log is available, most of cases have their characteristic features. In an xy plot anomalies caused by different sources tend to cluster in separate sectors of the resistivity- chargeability space. Resistivity and chargeability are different electrical properties of rocks, and even if one of them does not tell anything special of the rock, the other can be slightly anomalous. Their combined use gives a wide view of the electrical nature of the rock.