Chapter 5

Discussion and Recommendation

5.1 Discussion

The whole data are being gathered for the final discussion and conclusion. This technique seem to be success in tropical zone such in Thailand. This following is concluded from the whole results.

(1) In this study, the anomalous zone can be identified with good relationship of both low apparent resistivity value comprises with high apparent chargeability value.

(2) Metal factor can locate an anomalous zone out of a non-anomalous zone. It seems not appropriate to use this parameter to interpret the resultant profile plot because an error will be occurred from a negative or very low apparent resistivity while the apparent chargeability is rather high.

(3) Chargeability from Cole-Cole complex resistivity model is not quite good to identify the anomalous zone and the non-anomalous zone.

(4) Frequency dependent parameter is quite good correlation with anomalous and non-anomalous zones. However, this parameter is not smooth while this parameter is strongly impacted by noise, usually an electromagnetic coupling, especially in the deeper. For the shallow depth, this parameter is quite good but its reliability will decreases with depth, or longer dipole separation.

(5) Time constant parameter is seem to be the best parameter to locate anomalous zone from non anomalous zone. This parameter is assumed to be the first priority for identifying type of mineral deposit. However, this parameter can not used for such purpose, anyway from the result, it can roughly used to separate the anomalous zone from the non-anomalous zone.

(6) The decay curve of the mineralized zone of sulphide, graphite and clay can be considerably observed but the parameter in (5) is still not different. This might cause from the computer software is not suitable for this purpose. The decay curve should be processed by a more suitable computer program to separate the induced polarization effect from the noise interference, and thereafter this parameter should be re-processed with an appropriate technique to reach the objective.

(7) For the effect of survey parameters that used in field data acquisition, it seems not considerably influenced by the array configuration, even though the dipole separation but except for a transmitting time duration. If induced polarization data is used in order to discriminate any of minerals that preferable, these parameters should be pre-tested to achieves the highest accuracy and reliably data set.

(8) The relationship of the apparent chargeability and the apparent resistivity is the best compare with the previous methods. It should be noted herein that the apparent resistivity is not change linearly with the apparent chargeability but the using technique attempts to find some relationship that might be differ by their manner. This relationship is

very suitable to identify type of mineralization. However, it can not guarantee that it will be absolutely success because this study used each of only one sample for each mineral. It will be better for this reason if many data sets are gathered and test the efficiency of this technique, moreover, the parameter used in field data acquisition of each study area should be the same. However, this study must be stated herein that it is the feasibility for mineral discrimination purpose.

5.2 Recommendation

This work is firstly established in order to study the feasibility by using the complex resistivity method, Cole-Cole modeling, to find somewhat different for the purpose of mineral discrimination. The new examining technique was introduced to extract the parameter that existing in the survey data. Because most works are not paid attention to this kind of analyzing technique. From the results of the study, the following topic is recommended.

(1) This study lacks of an adequate data, so that the author does not made the typical standardization of the mineral characteristics. This work is a case study of the feasibility for mineral discrimination in northern Thailand. If the data is gathered in several areas and several types of the deposit, it seems to be great to continue this work.

(2) Furthermore, laboratory work was not done with a core sample even by an in-situ measurement. This work is looking for the physical properties of raw field survey only. The further work should be realizes in laboratory test to confirm the final result of an interpretation

and, moreover, the in-situ measurement on an expose mineralization should be made to verify the result of study.

(3)   In case of complex resistivity method, the Cole-Cole modeling. The computer program used herein is not sufficient for a detail analysis purpose of the induced polarization data. It will be better if using the computer software especially designed for this purpose.

(4) In case of decay curve analysis, it should note here that an electromagnetic coupling makes a distortion of a decay shape that is very difficult to analyze the data. The decay curve should be furnished by more suitable computer software in order to reduce such error.

(5) However, if the data are completed in their situation, mean that a noise-free data, including the simple geological condition. That will be better in case of the uniformity of the physical properties which could be analyzed successfully and makes it worst in further study.

(6) Moreover, one thing should be realized if the result of this study will be used in the other deposit, the geological condition of that area must be considered in order to interpret shape of the decay curve because it is influenced by many geological parameters.