

CHAPTER 4 SUBJECTS

(1) Conclusion

Based on the results obtained during the surveys carried out during the three years duration of the Cooperative Mineral Exploration in the Western Erdenet area, the following conclusions are summarized:

Mogoin gol Area

The geology in the area was formed by late Permian alkaline volcanic rocks, late Triassic to early Jurassic volcanic rocks, Triassic granitic rocks, Jurassic stocks, dykes and Quaternary sediments. Adakitic rocks of Erdenet complex are found distributed in the Erdenet mine area and related to the formation of Erdenet porphyry copper ore deposits. The adakitic rocks of diorite and rhyolite porphyry that are distributed in the Erdenet complex are also found distributed in this area. The alteration of the area consists of a high sulfidation alteration system that took place in the upper part of the porphyry copper type alteration zoning. However, the alteration indicated the existence of porphyry copper mineralization which probably occurred at depth. TDIP geophysical survey detected a big scale IP anomalous zone of low resistivity and high chargeability under the central part of Sharchuluut Mountain.

Based on the survey results, drilling survey of four drill holes were conducted during the phases II and III of this exploration project. The drill holes detected very strong and wide pyritization in the strong silicified rock consisting of tuff and granitic rocks; however, copper mineralization was not detected. Based on the distribution of alteration minerals in the drill cores, it can be inferred that porphyry copper mineralization occurred in the deeper part from surface.

No further exploration work in the future can be recommended in this area.

Zuukhiin gol Area

Promising results were detected on the basis of all the results. These results were extracted from the reevaluation of data compilation, geological survey and airborne geophysical survey of Phase I and the evaluation of geological survey, TDIP geophysical survey and drilling survey of phase III. The geological survey carried out during the Phase I reported that copper mineralization as malachite and chalcopyrite and high rock geochemical anomalous zone of copper, lead and zinc were confirmed in the area. Geological survey of Phase III indicated that high soil geochemical anomaly of copper with more than Cu 200ppm were concentrated in the central part of the area. TDIP geophysical survey detected also very high IP anomaly in the area. From all of these promising results, drilling survey was conducted in the area.

Copper grades in granitic rocks resulted in values less than Cu 0.0005% to Cu 0.784% range, Cu 0.086% average (492m in core length) in drill hole number MJME-Z1, less than Cu 0.0005% to Cu 0.678% range, Cu 0.086% average (492m in core length) in drill hole number MJME-Z2 and less than Cu 0.0005% to Cu 0.455% range, Cu 0.029% average (492m in core length) in drill hole number MJME-Z3. The copper grades intersected and the fluid inclusion results in the drill hole number MJME-Z2 suggest an extension of the copper mineralization toward southwest. This extension can be clarified by means of a detailed TDIP geophysical survey and a subsequent drilling program in the future based on the TDIP results.

Khujiriin gol area

The Khujiriin gol mineralization area is located in the northwest extension of the folding axis formed by low magnetic anomaly distributions. According to the analytical results from soil geochemistry carried out during the Phase III, ore assay grades were high, i.e., Cu 11.13%, Pb 5.78%, Zn 2.64%, Mo 0.269%, Ag 0.03g/t and a maximum value of Ag 221g/t. Copper grades of more than Cu 200ppm were distributed in the area. TDIP survey results indicated that a very high resistivity zone was distributed in the area where quartz veins with chalcopyrite, malachite and azurite are developed trending along EW direction.

Since mineral potential in this area has not been yet evaluated, it is expected that detailed TDIP geophysical survey and soil geochemical survey will be conducted in the area to find promising mineralization zones by clarifying more the geology and nature of the mineralization in the area.

Other Areas

In the Danbatseren east-area (DB1), The TDIP survey detected a low resistivity zone reflected probably by the influence of quaternary deposits of the ground surface. Another low resistivity zone was detected in the deeper part near the points 16 to 18 of Line-A, but it was not detected in the deeper part of Line-B. High chargeability zone is distributed in the Line-A. Mineralization with sulfide minerals is expected in the area, but its extension implies a very small size mineralization of porphyry copper type.

In the Danbatseren east-3 area (DB3), the detected low resistivity zone is also probably reflected by the influenced of quaternary deposits of ground surface. Relatively high chargeability zone is distributed at the depths of western part and eastern part of survey line, however, no remarkable IP anomaly was detected in the area.

In the Danbatseren east-4 area (DB4), a low resistivity zone was found distributed in the ground surface and in the deeper part of the western part of the survey line. No remarkable IP anomaly indicative of mineralization was detected in the area.

In the Tsagaan chuluut west area, a low resistivity zone was detected as a whole, but these low

values were especially distributed in the ground surface. Slightly high chargeability was detected around 300m in depth around the central part of the survey line. The anomaly shows probably a weak mineralization related to dyke rocks.

No further exploration work can be recommended in these areas because the geological and geophysical surveys did not detect any promising mineralization for mineral development..

(2) Recommendation for the Future

Based on the mineral exploration studies during these three years, the following recommendations are suggested:

(a) For the Zuukhiin gol area

Carry out more detailed analysis by firstly, conducting detailed TDIP geophysical survey in the area; secondly, by selecting drilling sites based on the geophysical analysis; and thirdly, by clarifying the scale and ore assay grade of the copper mineralization from the results of the drilling survey.

(b) For the Khujiriin gol area

Make a preliminary mineral potential evaluation of the area by conducting detailed TDIP geophysical survey and detailed soil geochemical survey in the area.