

PART II SURVEY RESULTS

CHAPTER 1 GEOLOGICAL SURVEY

1-1 Results of the geological survey

The geological survey areas for Phase III were selected in order to assess in more detailed the results of the previous airborne survey including the data compiled during Phase I. The areas included twenty-nine mineralized zones where low to middle magnetic distributions were detected. The geological survey was conducted in 6 areas: Khujiriin gol, Khujiriin gol north, Zuukhiin gol, Mogoin gol central, Tsagaan Chuluut West and Danbatseren east. 578 soil samples and 91 rock samples were collected in the areas. Analyzed elements for soil were: copper, molybdenum and other 32 elements. Elements for rock analysis were gold, copper, molybdenum and other 32 elements. Als-Chmex Laboratory conducted chemical analysis. The chemical data are indicated in appendix.

(1) Khujiriin gol area

Medium-grained pale red granite is widely distributed in the area. Pale blue to white granodiorite is exposed in the northern part of the area.

Oxide copper minerals occur in the central eastern and southeastern parts of the area. Licensed mine area registered by other owner is located in the eastern side of the survey area. According to existing data, a mineralized zone including copper minerals extends from east to west. The geological survey conducted in this Phase was located in the western side of the licensed area. Soil sampling was conducted by grid sampling procedures along lines spaced 250m at 500m intervals.

The survey results were clarified as follows:

- Quarts veins trending east to west were confirmed in southeastern part of the area with mineralization results that includes analytical values of more than Cu 0.1%. The mineralization probably continues towards the licensed area. Copper mineralization occurs locally in the southwestern part of the area.
- Copper mineralization could not, however, be observed in the northeastern part of the area, where the existence of copper mineralization was detected in the past.

(2) Khujiriin gol north area

Outcrop of basalt was confirmed by geological survey conducted in low magnetic anomalous zones. The basalt was observed in a continuous way along an approximate 300m trending south to north within a low magnetic anomaly distribution. The trend strikes N80° W and dips 60 to 80° N following the shape of the low magnetic anomaly. It was confirmed that this basalt intruded in andesitic basalt and andesitic tuff. Gossan, carbonate minerals and sulfide minerals as indicators of copper mineralization were not observed.

(3) Mogoin gol central area

There were no outcrops and float stones in the low magnetic anomalous zone detected between northern silicified zone and southern silicified zone because of gentle topography and stream. Rhyolite, diorite and andesite were observed in the northern part of the low magnetic anomalous zone. Evidences that caused low magnetic anomalies could not be clarified, but low magnetic anomaly probably proceeded from fault zone because of topographic features.

(4) Tsagaan chuluut west area

The area shows a hollow topography and covered by altered andesite and trachytic andesite. Copper mineralization was not found in the area. Soil geochemistry indicates that copper values are less than 10ppm in grade.

(5) Zuukhiin gol area

The geological survey was mainly conducted in the eastern part of the known mineralized area where exploration had been conducted in the 1980s. The outcrops of quartz veins are observed around rhyolite intrusions whereas oxide copper minerals are seen to occur in granodiorite. Because of gentle topography and few outcrops, soil sampling at 250m intervals was conducted along the hill. Soil geochemistry detected a geochemical anomaly zone with more than Cu 100ppm, with a trending that extends from east to west in the southern part of the known mineralized zone. Oxide copper minerals are observed in outcrops of granodiorite in grand size, but copper minerals are found filled only in fractures. It is concluded that the copper mineralization is epigenetic after emplacement of granodiorite observed in grand. Spotted oxide minerals are seen occurred in altered andesite. Ore assay indicated a maximum of Cu 1.48%.

(6) Danbatseren east area

DB-1 low magnetic anomalous zone is located in the hill and in flood plain of streams. The center of anomalous zone was located in the boundary of a hill, composed of quartz porphyry, and a stream. Spotted hematite minerals are seen to occur in quartz porphyry. Quartz fragments with various oxide copper mineral sticks are observed in the western part of the area.

In the DB-1 low magnetic anomalous zone, andesite, andesitic tuff and tuff breccia are widely distributed. The area shows steep topography with more than 300m in vertical drop. Granodiorite porphyry was observed in the some part of the area, but copper mineralization was not observed. Mineralization related to contact metasomatic deposits was observed in the mining trace.

DB-3 low magnetic anomalous zone was found on a gentle hollow topography covered by cultivated land. Outcrops are not seen in the area, but many float granite stones are observed in the

area. In the northern part of the area, float stones of silicified granite are observed. Known mineralization consisting of silicified rock is found approximately about 1.5km west of DB-3.

DB-4 low magnetic anomalous zone is located on gentle hollow topography, with a significant vertical drop of 30m to 40m in the central part of the area. Quartz porphyry or granodiorite porphyry was observed in the outcrops of the area located in the central part of the low magnetic anomaly zone. Joint plains in the outcrops are found east to west in strike and 50 to 60 degrees in dip. The quartz porphyry includes 1% of hematite minerals.

DB-5 low magnetic anomalous zone is mainly covered by andesitic rocks. There are no copper mineralizations seen in the area.

DB-6 low magnetic anomalous zone is located in a hilly terrain where quartz porphyry can be observed on the ridge. Granite probably from the Selenge complex is widely distributed in the low altitude area. Granodiorite is observed in the southern part of the area.

1-2 Selection of geophysical survey lines for TDIP survey

The geological survey conducted on the known mineralized areas was selected from the results of low magnetic anomalous zones of the airborne survey and from the analysis of existing data. The results of the geological survey were useful to decide the location and extension of the geophysical survey areas.