

CHAPTER 2 SURVEY METHOD

Coverage and Outline

The western Erdenet area is located in Bulgan District and Erdenet city of the northern-central part of Mongolia. The total area of the project area is 5,500 km². The distance from the Capital Ulaanbaatar to the project area is about 250 km. Mobilization by vehicles from Ulaanbaatar to the project area takes approximately 6 hours.

The general works and survey flow for three years was compiled in Fig. 3.

In Phase I, activities such as compilation of existing data, geological survey and airborne geophysical survey were carried out. High mineral potential areas were selected from the project area of 5,500 km².

In Phase II, a geological mapping was carried out in the Erdenet SE area, the Under/ Shand area and the Mogoin gol area. Geophysical survey by using the IP method was also carried out in the Under/ Shand and the Mogoin gol areas to clarify the resistivity and IP anomaly related to the mineralization. The information obtained from the geological and geophysical data, focused in the selection of the best sites for drilling in Mogoin gol area.

In Phase III, geological survey, geophysical survey and drilling survey were carried out in the selected areas from reanalyzed data and results of Phase II. The drilling survey was firstly conducted in Mogoin gol area where geochemical anomaly and high IP anomaly were detected. After geological survey and the geophysical survey, since high mineral potential area was detected in the Zuukhiin gol area, drilling survey was done.

The work amounts and the laboratory studies conducted during three years are summarized in Table 1, while the laboratory studies are shown Table 1.

Table 2 Contents and amount of works and Laboratory works

	PHASE I	PHASE II	PHASE III
Geological Survey	Geological survey Survey areas 7 areas Reconnaissance 340 km ² Semi-detail 110 km ²	Geological survey Survey areas 7 areas Reconnaissance 60 km ² Semi-detail 48 km ²	Geological survey Survey areas 7 areas Reconnaissance 133 km ²
Geophysical Survey	Airborn geophysical survey Whole project area Area 5,500 km ² Total survey line 26,498.80 km	TDIP Geophysical survey Survey areas 5 areas Line length 47.45 km Soil samples 3,705 samples	TDIP Geophysical survey Survey areas 5 areas Line length 70.4 km Soil samples 1,320 samples
Drilling Survey		DD drilling survey Mogoin gol area Total length 1002.00 m MJME-M1 501.80 m MJME-M2 500.20 m	DD drilling survey 2506.85 m Mogoin gol area Total length 1002.30 m MJME-M3 501.00 m MJME-M4 501.30 m Mogoin gol area Total length 1504.55 m MJME-Z1 502.10 m MJME-Z2 500.45 m MJME-Z3 502.00 m
Laboratorial Studies	Geological survey Thin section 62 samples Polished thin section 21 samples X-ray diffraction analysis 163 samples Whole rock analysis 10 samples Ore assay 41 samples Rock chemical analysis 217 samples Fluid inclusion 4 samples K-Ar Dating 4 samples Measurement of remanent magnetization 8 samples	Geological survey Thin section 51 samples Polished thin section 51 samples X-ray diffraction analysis 161 samples Whole rock analysis 12 samples Ore assay 66 samples Rock chemical analysis 251 samples Fluid inclusion 5 samples K-Ar Dating 5 samples Geophysical survey (TDIP method) Resistivity and chargeability 37 samples Drilling survey Thin section 13 samples Polished thin section 20 samples X-ray diffraction analysis 58 samples Ore assay 620 samples Fluid inclusion 6 samples Resistivity and chargeability 10 samples	Geological survey Soil chemical analysis 578 samples Rock chemical analysis 91 samples Geophysical survey (TDIP method) Resistivity and chargeability 93 samples Drilling survey Thin section 42 samples Polished section 42 samples X-ray diffraction analysis 117 samples Ore assay 1300 samples Fluid inclusion 19 samples Resistivity and chargeability 25 samples Measurement of remanent magnetization 7 samples K-Ar dating 7 samples O-D radiometric analysis 6 samples Re/Os dating 1 sample

Survey Members of the Project

The members who participated during three years are as follows:

Project Planning and Negotiation

Japanese counterpart	Mongolian counterpart
Toshio Sakasegawa (MMAJ)	Dashiin BAT-ERDENE (MITM)
Youichi Nakagawa (MMAJ)	Dambiisuren BOLD (MRAM)
Kiyosumi Kurokawa (MMAJ)	
Hajime Hishida (MMAJ)	
Tetsuya Honjo (MMAJ)	

MMAJ: Metal Mining Agency of Japan

MRAM: Mineral Resources Authority of Mongolia

GIC: Geological Information Center

Administration of Fieldwork

Japanese counterpart
First Phase
Hajime Hishida (MMAJ)
Second Phase
Hajime Hishida (MMAJ)
Eiichi Arai (MMAJ)
Kazuo Masuda (MMAJ)

Field Survey

The members who participated during the project are as follows:

Table 3 Member of field survey of the project.

Japanese counterpart		Mongolian counterpart	
First Phase			
Motomu Goto	Team leader	Dambiisuren Bold	Project manager (MRAM)
Jun-ichi Ishikawa	Geologist	Sengee Muuhkbaatar	Geologist (MRAM)
Kazuyasu Tsuda	Geologist	Damdinjab Sharhuuhen	Geologist (MRAM)
		Munkhjargal Nerguin	Geologist (Erdenet Mine)
Second Phase			
Motomu Goto	Team leadert	Dambiisuren Bold	Project manager (MRAM)
Yoshimitsu Negishi	Geologist	Sengee Muuhkbaatar	Geophysicist (MRAM)
David Esukobaru	Geophysicist	Chuluunbat Ganbat	Geologist (MRAM)
Susumu Endo	Geophysicist	Shiiter Battovshin	Geologist (MRAM)
Masaru Fujita	Geophysicist	Purev Tumenbayar	Geophysicist (MRAM)
Kurae Iwaki	Geophysicist	Badamjav Bayarkhuu	(GIC)
Kazuyuki Kadoshima	Drilling Engineer		
Third Phase			
Motomu Goto	Team leader	Dambiisuren Bold	Project manager (MRAM)
Michiteru Kai	Geologist	Chuluunbat Ganbat	Geologist (MRAM)
Masaomi Kurihara	Geologist	Shiiter Battovshin	Geologist (MRAM)
Yasunori Nuibeo	Geologist	Lkhamsranjav Gantumur	Geophysicist (MRAM)
Susumu Endo	Geophysicist	Badamjav Bayarkhuu	(GIC)
Masaru Fujita	Geophysicist		

Survey Period

Period of the field surveys in Phase I is as follow:

Geological survey:	26th July 2001 to 17th September 2001
Existing data collection:	18th August 2001 to 25th August 2001
Airborne geophysical survey:	6th October 2001 to 3rd December 20001

Periods of the field survey in Phase II are as follows:

Geological mapping:	22nd July 2002 to 23rd September 2002
Geophysical survey :	22nd July 2002 to 23rd September 2002
Drilling survey:	17th January 2003 to 18th March 2003

Periods of the field survey in Phase III are as follows:

Geological survey:	14 th June 2003 to 19 th July 2003
Geophysical survey:	14 th June 2003 to 16 th August 2003
Drilling survey:	14th June 2003 to 24 th November 2003