NO. 23

REPORT
ON
THE COOPERATIVE MINERAL EXPLORATION
IN
THE BO CU AREA
THE SOCIALIST REPUBLIC OF VIETNAM

PHASE III

FEBRUARY 1999

JAPAN INTERNATIONAL COOPERATION AGENCY

METAL MINING AGENCY OF JAPAN

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PREFACE

The Government of Japan, in response to a request of the Government of the Socialist Republic of Vietnam, decided to conduct a mineral exploration in the Bo Cu area, northern Vietnam, and entrusted the survey to the Japan International Cooperation Agency (JICA) and the Metal Mining Agency of Japan (MMAJ).

The Government of the Socialist Republic of Vietnam appointed the Department of Geology and Minerals of Vietnam (former Geological Survey of Vietnam), the Ministry of Industry to make the survey as a counterpart to the Japanese team. The survey was carried out from 1996 jointly by experts from both governments.

The Third Phase of the Cooperative Mineral Exploration consisted of drilling exploration for gold resources in the Bo Cu area. The Japanese survey team consisting of one geologist (team leader) and a drilling engineer were sent to the survey area during the period of September 1 to November 26, 1998. They worked successfully with the Vietnamese survey team.

We hope that this report will serve for the development of the project and contribute to the promotion of friendly relationship between the two countries.

We wish to express our sincere appreciation to the officials concerned of the Government of the Socialist Republic of Vietnam for their close cooperation extended to the team.

February 1999

Kimio FUJITA
President
Japan International
Cooperation Agency

Hiroaki HIYAMA
President
Metal Mining Agency of
Japan

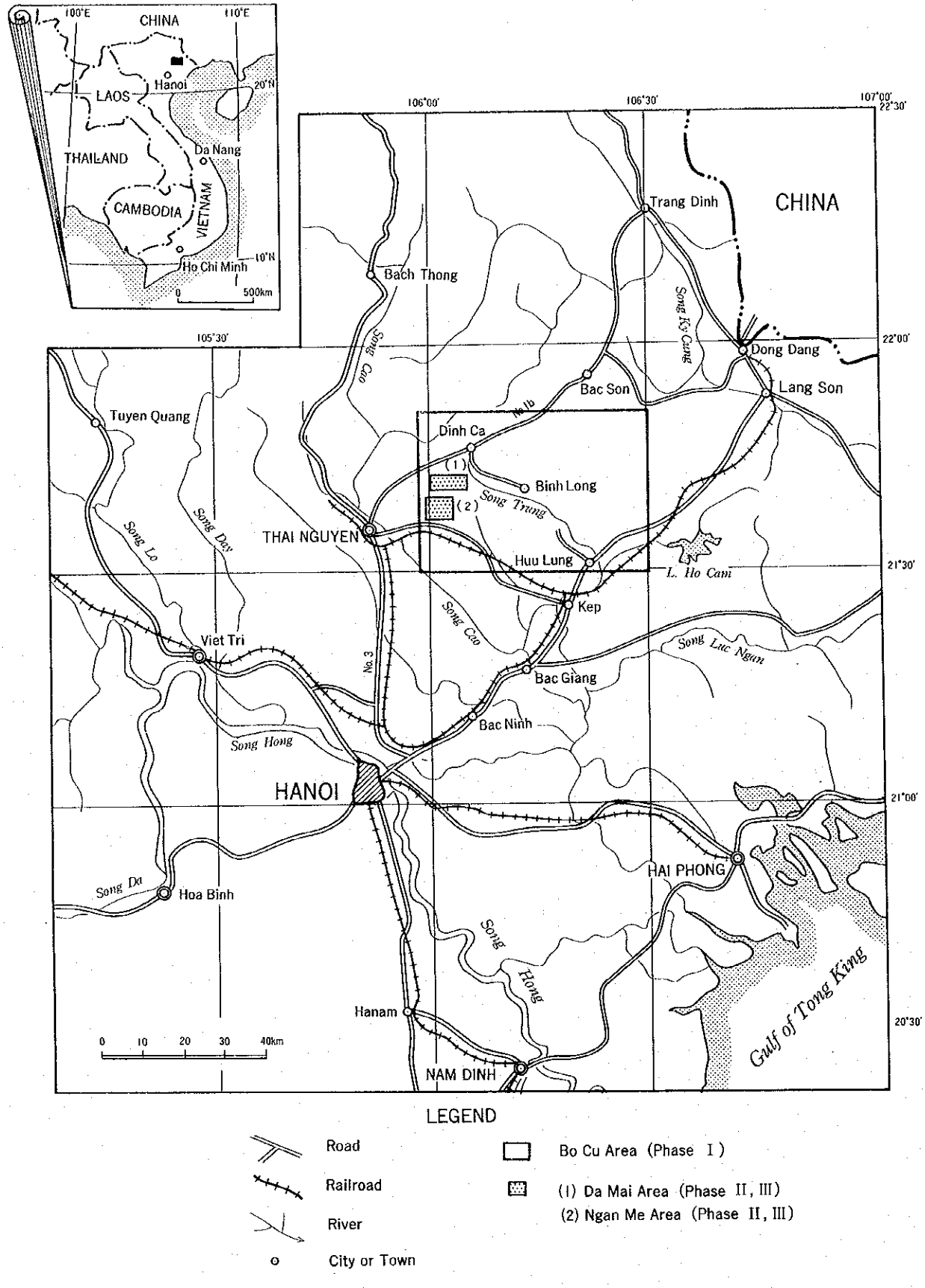


Fig. 1-1 Index Map of the Survey Area

SUMMARY

The survey this year corresponded to the third phase of the Cooperative Mineral Exploration in the Bo Cu area. The principal objective of this project is to find a new mineral deposit in the Bo Cu area through the exploration and examination of geology and mineralization. The works this phase were composed of drilling in two areas -- Da Mai and Ngan Me -- which were selected through the first and second phase surveys as potential gold prospects. Two inclined holes totaling 600 m (MJVB-3 and MJVB-4) were drilled in the Da Mai-Khe Dui prospect in the Da Mai area, and another two inclined holes totaling 600 m (MJVB-5 and MJVB-6) were drilled in the Ba Khe prospect in the Ngan Me area for testing the lower extensions of the significant gold mineralized zones.

MJVB-3 was drilled to investigate the lower extension of gold mineralization in the eastern part of the Da Mai-Khe Dui prospect. It mainly targeted at the Group B veins in the Da Mai-Khe Dui prospect. A total of eight major groups of quartz veins were caught in MJVB-3. Several significant intersections were returned as follows: 75.600 g/t Au and 3.0 g/t Ag at 35 cm in width, 1.770 g/t Au at 33 cm in width, and 0.570 g/t Au at 37 cm in width. The extensions of some gold-bearing quartz veins which expose on the surface in the Khe Dui creek were caught in the drill hole. However, most of them showed no gold value.

MJVB-4 was drilled to investigate the lower extension of gold mineralization in the eastern part of the Da Mai-Khe Dui prospect. It mainly targeted at the Group C veins in the Da Mai-Khe Dui prospect. In MJVB-4, eight major groups of quartz veins were intersected. The development of quartz veins/networks were remarkable in this hole, especially at the depth from around 100 to 150 m. Only one significant result was obtained in this hole: 12.400 g/t Au at 45 cm in width.

The purposes of MJVB-5 and 6 were to investigate the lower extension of gold mineralization in the southern and central parts of the Ba Khe prospect. MJVB-5 mainly targeted at the Na Hon Group veins in the Ba Khe prospect. MJVB-6 mainly targeted at the Ba Khe Group veins in the Ba Khe prospect. In these holes, no significant assay result was obtained, although several groups of quartz veins were intersected in the drill holes.

On the basis of the results of the drilling survey this phase in which two areas for gold potentials have been tested, the following conclusions were obtained. Gold-bearing quartz veins in these areas are of small scale and sometimes discontinuous. They dispersedly occur, without any concentration of significant scale. Some of them occasionally show very high grade in Au. Such grades, however, are not stable. The dimension of gold resources was considered to be something from several hundreds to several thousand tons of ores; that is unfortunately far smaller than what is required in our exploration. Therefore, no further work is recommended in both the Da Mai and Ngan Me areas.

CONTENTS

CONTENTS

PART I OVERVIEW

PART II DETAILED DISCUSSIONS

PART III CONCLUSIONS AND RECOMMENDATIONS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOGRAPHS

APPENDIX

PLATE

(None)

PART I OVERVIEW

PART I OVERVIEW

Chapter 1 Introduction

1-1 Background and Objectives

The Vietnam-Japan Cooperative Mineral Exploration has been carried out in one area of the Socialist Republic of Vietnam: "Van Yen and Thanh Hoa (1993-1995)". As a result of these works, a significant amount of information regarding metallic mineral resources was obtained. The exploration also contributed to the technical progress of the Geological Survey of Vietnam, as well as to the acquisition and accumulation of knowledge regarding geology and mineral deposits of the country.

The Ministry of Industry of Vietnam planned to conduct mineral exploration in the Bo Cu area, northern Vietnam, and requested the cooperation of the Japanese Government. In August 1996, the Japanese Government, responding to the request, sent a mission for discussing the Scope of Work and to make a program of the first phase survey. As a result of consultations with the Geological Survey of Vietnam (now the name has changed to the Department of Geology and Minerals of Vietnam), the counterpart of the Japan International Cooperation Agency and the Metal Mining Agency of Japan, an agreement was reached for cooperative mineral exploration in the Bo Cu area on August 8, 1996.

The survey of this year was the third phase of the Cooperative Mineral Exploration in the Bo Cu area, the Socialist Republic of Vietnam.

The principal objective of this project is to find a new mineral deposit in the Bo Cu area through the exploration and examination of geology and mineralization. It is also important to pursue technology transfer to the Vietnamese counterpart organization in the course of the project.

In 1996, preliminary investigation and the first phase field survey were carried out for the purpose of assessing the potential of mineral resources in the Bo Cu area. The major works completed during the first phase were review of the existing geological information, regional geological survey, geochemical exploration (stream sediment survey and panning survey), and semi-detailed geological survey and geophysical exploration (CSAMT method). The entire study area was 2,000 km^2, and the semi-detailed survey was made in three areas of approximately 16 km^2 in total -- Da Mai, Gang, and Ngan Me.

In 1997, the second phase survey comprising detailed geological survey, rock-chip geochemical survey, geophysical survey (IP method) and reconnaissance drilling was carried out in two areas -- Da Mai and Ngan Me -- which were selected by the first phase survey for the potential

gold prospects. A survey length of 80 km was traversed, and more than 300 rock-chip samples and 70 ore samples were collected. The IP geophysical survey was carried out in the survey areas, and the chargeability anomalies were analyzed. Two inclined holes totaling 600 m were drilled in the Da Mai-Khe Dui prospect in the Da Mai area for testing the lower extensions of the significant gold mineralized zones.

The program this phase was composed of drilling exploration in two areas -- (1) Da Mai area, and (2) Ngan Me area. The major purpose of this phase was to find bonanzas of gold ores within the mineralized zones defined during the second phase survey -- especially by the IP geophysical survey. It was also required for the further exploration to elucidate the nature and characteristics of gold mineralization in the Bo Cu area.

1-2 Conclusions and Recommendations of the Second Phase Survey

1-2-1 Conclusions of the Second Phase Survey

On the basis of the results of the second phase works comprising detailed geological survey, rock-chip geochemical survey, IP geophysical survey and reconnaissance drilling, the following conclusions were obtained.

(1) Geology and Geologic Structure

The distribution of three stratigraphic units from the Cambrian to the Quaternary systems consisting of five formations was surveyed and the geologic maps of 1:10,000 scale were prepared in the Da Mai and Ngan Me areas by the detailed geological survey in the second phase. Geostructurally, the survey areas where gold-bearing quartz veins are extensively developed are situated within the Bo Cu anticline whose axis orientates in the direction of WNW-ESE. The veins occur on the crest and northern and southern wings of the Bo Cu anticline, and it is interpreted that the formation of veins is controlled structurally by the regional folding activity started probably from the Triassic period.

(2) Gold Mineralization

Gold-bearing quartz veins occur extensively in both the Da Mai and Ngan Me areas. Although the width of each vein is not magnificent, they sometimes occur together forming a vein zone of several tens to a few hundred meters wide and 500-1,500 m long. The system of quartz veins and nature of gold mineralization were investigated by the detailed geological survey. On the basis of the results of studies on geologic environment, ore and gangue mineralogy, alteration, chemical analysis and fluid inclusion, it is concluded that the type of mineralization is the mesothermal gold vein hosted by sedimentary and metamorphic rocks of the Cambrian Mo Dong and Than Sa Formations. Two vein systems were distinguished by means of the stereo net analysis. One is E-W trend with dips of gentle to steep S, and another is E-W with dips of gentle N. According to the detailed geological survey together with the results of geochemical exploration, two areas for gold-bearing quartz veins have been examined, and potential for each area was evaluated. It is not likely to occur a big scale deposit in this area when seeing from the relative narrow and discontinuous nature of quartz veins as well as the scale and intensity of geochemical anomalies. Within two areas, Da Mai-Khe Dui and Ba Khe are promising prospects for medium to small size high-grade gold resources.

(3) IP Geophysical Survey

In the survey areas, strong chargeability anomaly, weak chargeability anomaly and high resistivity anomaly were taken as the IP anomalies related to quartz veins. Strong chargeability anomaly is connected with a distribution of quartz veins containing a considerable amount of sulfide minerals. Weak chargeability anomaly is expected that quartz veins containing a small amount of

sulfide minerals are distributed.

In the Da Mai area, a strong chargeability anomaly zone was extracted in the northern part of lines D-IP-8 to D-IP-10 and a weak chargeability anomaly zone was done in the central part of the survey area. The strong anomaly zone (WNW-ESE direction) seems to reflects the prospect around the Khe Dui creek, and tends to continue to the east of the survey area and extend to the deeper zone. The weak anomaly zone (WNW-ESE direction) seems to be attributed to the prospect around the Da Mai creek. It extends over all the lines, but tends not to extend to the deeper zone. The drilling exploration against the weak anomaly zone revealed the distribution of quartz veins containing a small amount of sulfide minerals. It confirmed the validity of the geophysical survey results.

In the Ngan Me area, strong chargeability anomaly zones including high chargeability more than 40 mV/V were extracted in the southern part of lines N-IP-2 to N-IP-9 and the central part of lines N-IP-1 to N-IP-2. The anomaly zone in the southern part of lines N-IP-2 to N-IP-9 (E-W direction with S-dip) is the broadest in the Ngan Me area and seems to be attributed to the Ba Khe prospect around the Na Hon creek. The anomaly zone in the central part of lines N-IP-1 to N-IP-2 seems to be attributed to the Ba Khe prospect around the Ba Khe creek. Neither tend to extend in the deeper zone.

(4) Drilling Exploration

In the drilling exploration in the second phase, road construction for the transportation of drilling machine and equipment has been taken for a certain time. Therefore, there was a restriction in the selection of drilling sites. The drilling target zones in which the most significant anomalies of both geochemistry and IP geophysics were defined have not been tested this phase. Two holes totaling 600 m were drilled in the Da Mai-Khe Dui prospect of the Da Mai area. Many significant intersections of gold-bearing quartz veins were caught in these reconnaissance drill holes, although some of the targeted extensions of veins on the surface have been appeared to be insignificant in the depth.

The drill hole MJVB-1 is located at the upper reaches of Da Mai creek. It targeted to the lower extension of the central part of the Group A veins of the Da Mai-Khe Dui prospect. In this hole, thirteen major groups of quartz veins were caught in total. Although native gold was observed in drill cores and slime of drilling at several depths in the field, no significant assay result was obtained.

The drill hole MJVB-2 is located at the upper reaches of West Da Mai creek. It targeted to the lower extension of the western part of the Group C veins of the Da Mai-Khe Dui prospect. In this hole, thirteen major groups of quartz veins were intersected, and several significant intersections up to 56.640 g/t Au and 9.0 g/t Ag at 28 cm in width were returned

(5) Da Mai Area

The distribution of gold mineralization in the Da Mai-Khe Dui prospect is approximately 200-300 m wide and more than 1,500 m long. Gold-bearing quartz veins in the Da Mai-Khe Dui prospect are subdivided into several groups of veins mainly running E-W with dips of steep S or N. Numerous people's mining shafts, adits and prospecting pits are distributed in the prospect. Visible gold was frequently observed in quartz veins in Khe Dui creek. Assay results such as 55.704 g/t Au at 8 cm in

width and 13.385 g/t Au and 4.0 g/t Ag at 45 cm in width were obtained through the detailed survey in the second phase. A couple of distinctive IP anomalies -- strong one in Khe Dui creek and weak one in West Da Mai-Da Mai creek -- were delineated by the geophysical survey. The latter was tested by drilling. However, the former anomaly remains untested. The occurrence of high-grade gold ores of a dimension of several hundred meters by several hundred meters in the length and in the depth with width of 1 to 2 meters is expected in Khe Dui creek.

(6) Ngan Me Area

The Ba Khe prospect in the Ngan Me area is another promising target for the further exploration. Adits and inclined shafts are distributed for about 1,000 m along Ba Khe creek and Na Hon creek. Veins of E-W trend with dips of gentle to steep S occur in this prospect. Although assay results of ore samples were rather disappointing, visible gold occasionally occurs in some part of quartz veins. Au and basemetal anomalies of rock-chips occur intensively. Several strong IP anomalies were delineated in the geophysical survey this phase. One is located at the western part of the Ba Khe gold zone. Another one, which is a significant chargeability anomaly, occurs from the lower reaches to the upper reaches of Na Hon creek. High-grade gold ores like in the Da Mai-Khe Dui prospect are expected to exist in these anomaly zones.

1-2-2 Recommendations for the Third Phase Survey

Da Mai-Khe Dui Prospect

The reconnaissance drilling was recommended in the Da Mai-Khe Dui prospect. The drilling should aim at the lower extension of the most significant mineralized zones within the geochemical and geophysical anomalies. The targets should be selected from zones of the Group B and Group C veins developed at Khe Dui creek.

Ba Khe Prospect

The reconnaissance drilling was recommended in the Ba Khe prospect. The drilling should aim at the lower extension of the most significant mineralized zones within the geochemical and geophysical anomalies. The targets should be selected from zones of the Ba Khe Group and Na Hon Group veins.

1-3 Outline of the Third Phase Survey

1-3-1 Survey Area

The survey area this phase is located approximately 30 km east of Thai Nguyen which is the capital city of Thai Nguyen Province, and situated approximately 70 km direct north of Hanoi. The location map of the survey area is shown in Fig. 1-2.

1-3-2 Exploration Theme

The work this phase corresponded to the third phase survey in the Bo Cu area, and was composed of drilling exploration in the Da Mai and Ngan Me areas.

The main theme of drilling exploration this phase was to test the lower parts of the mineralized zones which were defined by geological, geochemical and geophysical surveys in the second phase.

1-3-3 Exploration Work

The field work this phase was composed of drilling in the Da Mai and Ngan Me areas. The amount of works in the third phase is summarized as follows:

Survey	Area and Amount of Samples	
	Da Mai Area	Ngan Me Area
Drilling Survey	MJVB-3 N, -45°, 300 m MJVB-4 N, -45°, 300 m	MJVB-5 N, -45°, 300 m MJVB-6 N, -45°, 300 m
	4 holes totaling 1,200 m	

The lower extensions of the surface showings of mesothermal gold mineralization were tested by diamond drilling. The target zones were selected on the basis of the results of geological, geochemical, and IP geophysical surveys in the previous phase. The program consisted of four inclined holes of diamond drilling totaling 1,200 m. The minimum size of core required was BQ. Drill logs were prepared at a scale of 1:200. A total of more than 100 assay samples were obtained from drill cores.

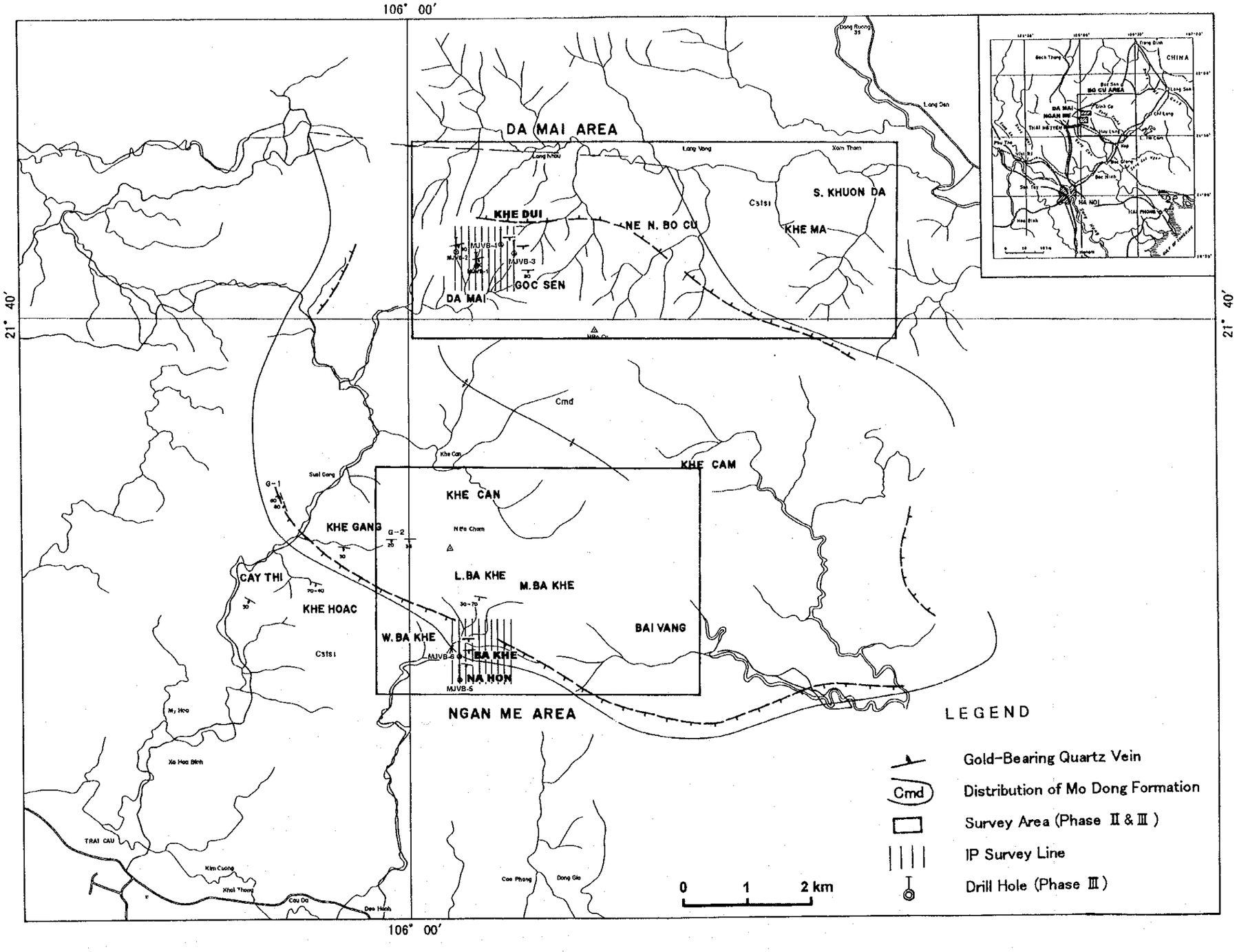


Fig. 1-2 Map Showing the Area of the Third Phase Survey

The amount of samples for chemical analysis and laboratory work is listed in the following table:

Chemical Analysis & Lab Work	Amount of Samples
Drilling Exploration	
Thin Sections	20 pcs
Polished Sections of Ore	20 pcs
X-Ray Diffraction Analysis	21 pcs
Fluid Inclusion Study (Homogenization Temperature)	10 pcs
Fluid Inclusion Study (Salinity)	4 pcs
Chemical Analysis	
Ores (Au,Ag,Cu,Pb,Zn,Fe)	101 pcs

1-3-4 Survey Team

The preparation works for the drilling mainly composed of road construction were carried out during the period from July 1 to the end of September, 1998. Drilling survey was conducted during the period from September 1 to December 26, 1998. Laboratory works and reporting followed the field works. The organization of the survey team consisted of the following members:

[Metal Mining Agency of Japan]

Yoshiharu Kida	Coordinater and Geologist, MMAJ Bangkok Office

[Members of Vietnamese Team]

Le Van De (Dr)	(DGMV) Coordinator and Geologist
Dao Thai Bac	(DGMV-NE) Geologist
Le Van Kieu	(INTERGEO) Drilling Engineer

[Members of Japanese Team]

Kohei IIDA	(NED) Team Leader and Chief Geologist
Hatsuo KUMANO	(NED) Drilling Engineer

*Note: DGMV; Department of Geology and Minerals of Vietnam
DGMV-NE; North-Eastern Geological Division, DGMV
INTERGEO; INTERGEO Division, DGMV
NED; Nikko Exploration and Development Co., Ltd.

Chapter 2 Geography of the Survey Area

2-1 Location and Access

The Bo Cu area is located in the northern part of Vietnam. It is under the jurisdiction of two provinces: Thai Nguyen and Bac Giang.

The access to the Bo Cu area is obtained via Thai Nguyen, whose population is about 180,000 and which is the nearest city to the survey area within the province. The national road No. 3 connecting Thai Nguyen to Hanoi is sealed (tarred), and it takes about 2 hours by car. From Thai Nguyen to the survey area, there are a couple of roads. They are partly tarred, mostly unsealed. There is locally no bridge for cars where crosses rivers, and they sometimes become muddy when rain continues. In such season, only four-wheel-drive vehicles are possible to go to the survey area. Several tracks are running in the survey area. Most of them are rugged, interrupted by rivers.

2-2 Topography and Drainage System

The survey area is situated in a hilly land. The altitude ranges from 50 to 500 m. The geology consists mainly of Paleozoic sedimentary and metamorphic rocks. The major drainage systems within and surrounding the survey area are Song (river) Rong and Song Trung; both are branches of Song Cau.

2-3 Climate and Vegetation

The area belongs to the subtropical Asian monsoon climate zone. It is composed of four seasons. Spring comes in April, when red flowers of frangboiyan tree start to blossom everywhere in the town and countryside. Summer comes rather earlier, in May when the average temperature goes over 27°C. In addition to the temperature, the humidity also goes up in June and July. Typhoon occasionally visits to this area in July or August. From October to December, it is the best and comfortable autumn season for the people. From the end of December, cold and rainy winter starts, and continues until March at most.

The following is the climatological data in Hanoi and its surrounding area:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperature °C	16.6	17.1	19.9	23.5	27.1	28.7	28.8	28.3	27.2	24.6	21.2	17.9
Average Humidity %	80	84	88	87	83	83	83	85	85	85	81	81
Precipitation mm/month	18	26	48	81	194	236	302	323	262	123	47	20

Paddy rice fields cover along the alluvial plains in the survey area.

The subtropical rain forest grows in lowland in the survey area. Some of the hilly area is developed as a tea plantation.

Chapter 3 Geology of the Survey Area

3-1 Geological Setting of the Northern Part of Vietnam

The survey area is located in the eastern part of the Vietbac district on the geological classification of the northern Vietnam. The Vietbac and Littoral Bacbo districts are separated with the West Bacbo district on the southwestern side by a structural zone of NW-SE direction which passes near Song Hong. This zone forms a part of the boundary between the South China plate on the northeastern side and the Indochina plate on the southwestern side. That is, this area is situated in the southernmost of the South China plate, and is structurally corresponds to the southern extension of the Chinese continent. Geology of this area is composed of schist and sedimentary rocks of the Cambrian to Ordovician systems as the basement, and various sedimentary rocks from the lower Devonian to the middle Jurassic systems overlain the basement. Major parts of these geologic units show the structural direction of NE-SW which is comprehensively a characteristic feature in the eastern part of the Vietbac district. They form a complex folding zone. Moreover, they are cut into several blocks by faults of the same direction. The southwestern part of this area (southwestern part of the regional geological survey area and in ranges of the mineralization belt), however, tends to show directions of NW-SE or WNW-ESE. These structural trends extend to the west. The Precambrian rocks along Song Hong exhibit the NW-SE direction distinctly.

No big-scale igneous body is known in this area. Only small stocks are found; the late Triassic biotite granite occurs 50 km northwest from the western boundary of the survey area; the Cretaceous granite also occurs to the southwest of the survey area.

3-2 Geology and Geologic Structure of the Bo Cu Area

Geology of the Bo Cu area is composed of sedimentary and metamorphic rocks of Cambrian, Ordovician, and Devonian to Jurassic systems. The geology is classified into the following six major stratigraphic units: 1) Cambrian sedimentary rocks and schist with some limestone (Mo Dong Formation and Than Sa Formation), 2) Ordovician sedimentary rocks and schist (Na Mo Formation), 3) Devonian sedimentary rocks and schist with some limestone (Bac Bun Formation, Mia Le Formation and Na Quan Formation), 4) Carboniferous to Permian limestone with some clastic rocks (Bac Son Formation and Dong Dang Formation), 5) Triassic sedimentary rocks with interbedded acidic volcanic rocks (Lang Son Formation, Song Hiem Formation, Na Khuat Formation, Mau Son Formation and Van Lang Formation), and 6) Quaternary sediments.

In the central to the eastern part of the Bo Cu area, a series of Carboniferous to Permian limestone crops out widely, and forms the typical Karst topography. The survey area this phase, center of which is Nui (mountain) Bo Cu (540 m), belongs to the southwestern part of the above-mentioned

area. It is composed mainly of Cambrian terrigene-sedimentary and metamorphosed rocks of the Mo Dong and Than Sa Formations. They form the Bo Cu anticlinorium, whose axes trend WNW-ESE direction and plunge to E. Two sides (N and S) of the anticlinorium are cut and controlled by two tectonic faults of the same direction. Series of alluvial gold occurrences surround the anticlinorium, and moreover, almost all known gold-bearing quartz veins in the area are distributed within this anticlinal structure. The rocks except the recent one in the western part of the Bo Cu area generally show strike directions of ENE-WSW, E-W and WNW-ESE. Those in the central to the southern part dip to the south to south-southwest at angles of 30 to 40 degrees. Therefore, the upper strata crop out to the south. On the other hand, the lower Cambrian system forms an anticlinorium of almost E-W axis in the northern part of the area. The lowest horizon in the Bo Cu area appears on the surface in this part.

3-3 Mineralization

According to the existing geological reports, the occurrences of gold-bearing quartz veins are known in the following areas:

- •Da Mai
- •Gang
- •Cay Thi
- •Ngan Me
- •Bai Vang

Gold-bearing quartz veins in the Da Mai area are hosted by sandstone, shale and sericite schist of the Mo Dong Formation. The width of veins ranges from a few centimeters to 1 m. The major trend of vein systems is E-W to ENE-WSW. Most of the veins dip steeply to S with some exceptions of the N-dip. Gold is generally accompanied by a small amount of sulfide minerals. Arsenopyrite and pyrite are the two most common sulfide minerals; chalcopyrite and covelline were occasionally found in a bonanza of gold. The vein quartz in the Da Mai area is characterized by grayish color. It is probably caused by the sulfide content. The host rock beside the vein is slightly altered. The major alteration minerals are quartz and sericite. Nine veins were found by the survey of GSV within the area, and they were named No. 1 to No. 9 Veins respectively. According to GSV data, the No. 1 Vein has the average width of 56 cm, and average grade of 12 g/t Au for example. The No. 8 Vein has the average width of 50 cm, and average grade of 31 g/t Au. A grade of 36 g/t Au at 90 cm was reported in some part of the vein (GSV, 1988). The strike length of each vein is said to be several hundred meters intermittently. The extension to the dipping is uncertain.

Gold-bearing quartz veins in the Gang area are hosted by sandstone, shale, sericite schist and black slate of the Mo Dong and Than Sa Formations. The width of veins ranges from about 10 cm to 1

m. The major trend of vein systems is E-W to WNW-ESE. Most of the veins dip gently to S. Veins of N-S and NE systems locally occur. This vein structure is concordant to the general trend of the bedding of the host sediments in the Gang area. However, some veins crosscut the host bedding at a narrow angle. Gold is generally accompanied by some sulfide minerals. Pyrite and arsenopyrite are the two major sulfide minerals. Other sulfide minerals found under the microscope are: chalcopyrite, covelline, and pyrrhotite. The host rocks beside the vein are slightly altered. Silicification and sericitization are the major wall-rock alteration. Chloritization and kaolinization were locally observed. Two major veins were found by the survey of GSV within the area, and they were named G-1 and G-2 Veins respectively. One is located at a branch creek of S. Hoan (southern side), and another is located at another branch creek (northern side). According to the existing data, the G-1 Vein has the average width of 60 cm, and average grade of 16 g/t Au. The G-2 Vein has the average width of 35 cm, and average grade of 2 g/t Au. The strike length of each ore body was estimated to be several hundred meters intermittently. The extension to the dip side is about 20 m.

The Cay Thi deposit makes up of gold-bearing quartz veins hosted in black shale of the Cambrian Than Sa Formation. Pyrite is associated with the vein. The quartz vein occurs along the bedding plane of the host sediments which dip gently. The width of vein is narrow, commonly 3 to 5 cm, and occasionally 10 to 30 cm. In this area, gold ore is mined by local people some 300 m along S. Hoan. Gold-bearing quartz veins near the river are mined, and ores are processed in a small scale. In this area, alluvial gold is mined by local people everywhere along S. Hoan. Sand and gravel at the riverbed are mined down to 3 to 4 m deep, and ores are processed by a series of crashers and traditional blanket sluicing.

Gold-bearing quartz veins in the Ngan Me area are hosted mainly by sandstone, shale and phyllite of the Mo Dong Formation. The geology of the southwestern corner of the Ngan Me area consists of sandstone, phyllite and schist of the Than Sa Formation (lower member). The width of veins changes place to place from a few centimeters up to 2 m. Veins often show a lens-like shape. The main trend of vein systems is E-W to ENE-WSW. Two groups of veins - one is steeply dipping to S, and another is gently dipping to S - were distinguished. A small amount of pyrite was seen in some veins. A trace of arsenopyrite, pyrrhotite, chalcopyrite, covelline, sphalerite, galena was observed in some part of the veins.

Gold showings are also known along the upper reaches of Bai Vang which is located about 2 km due east of the Ngan Me area. The deposit is thought to be the extension of that in the Ngan Me area.

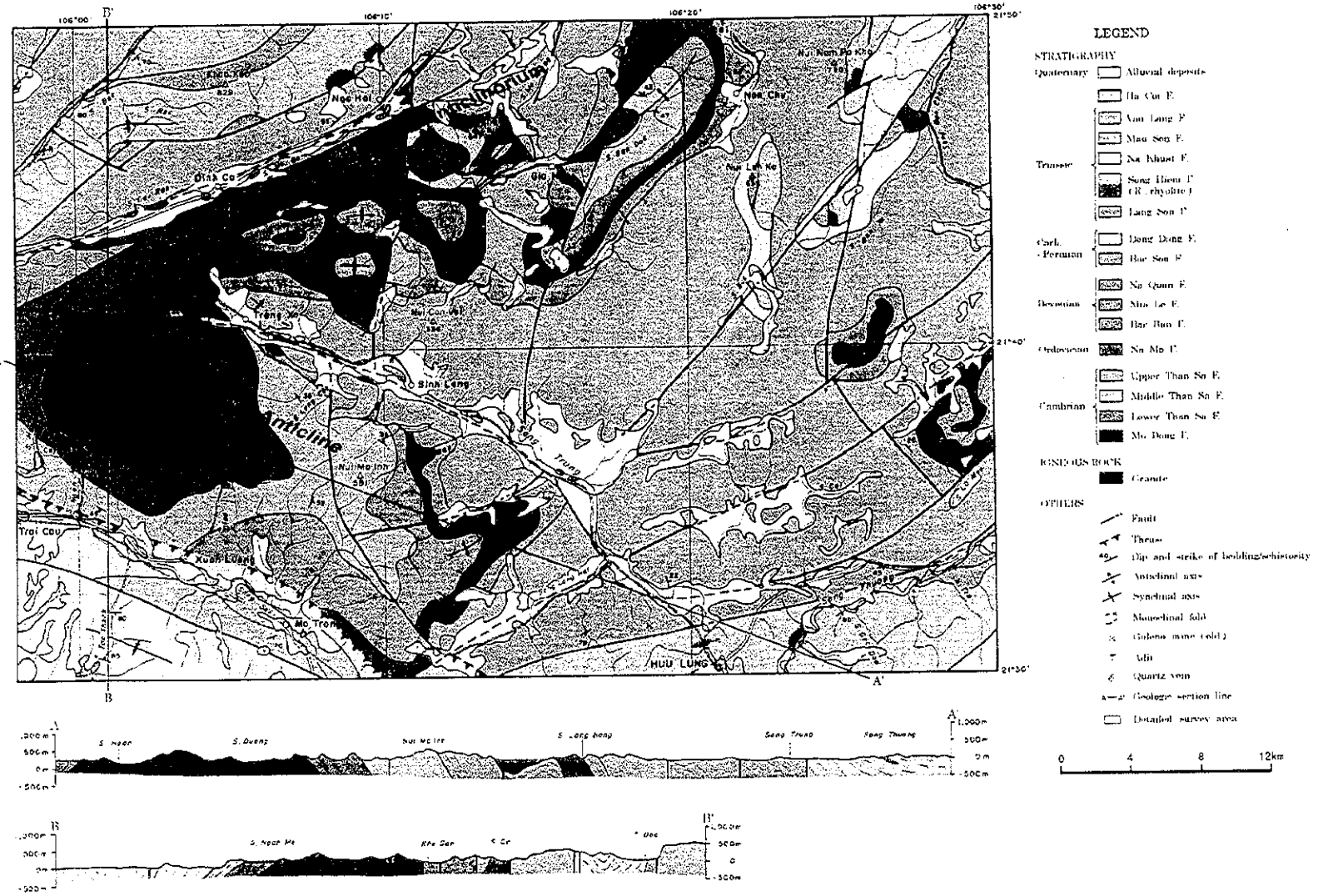


Fig. 1-3 Geology and Geologic Profile of the Bo Cu Area

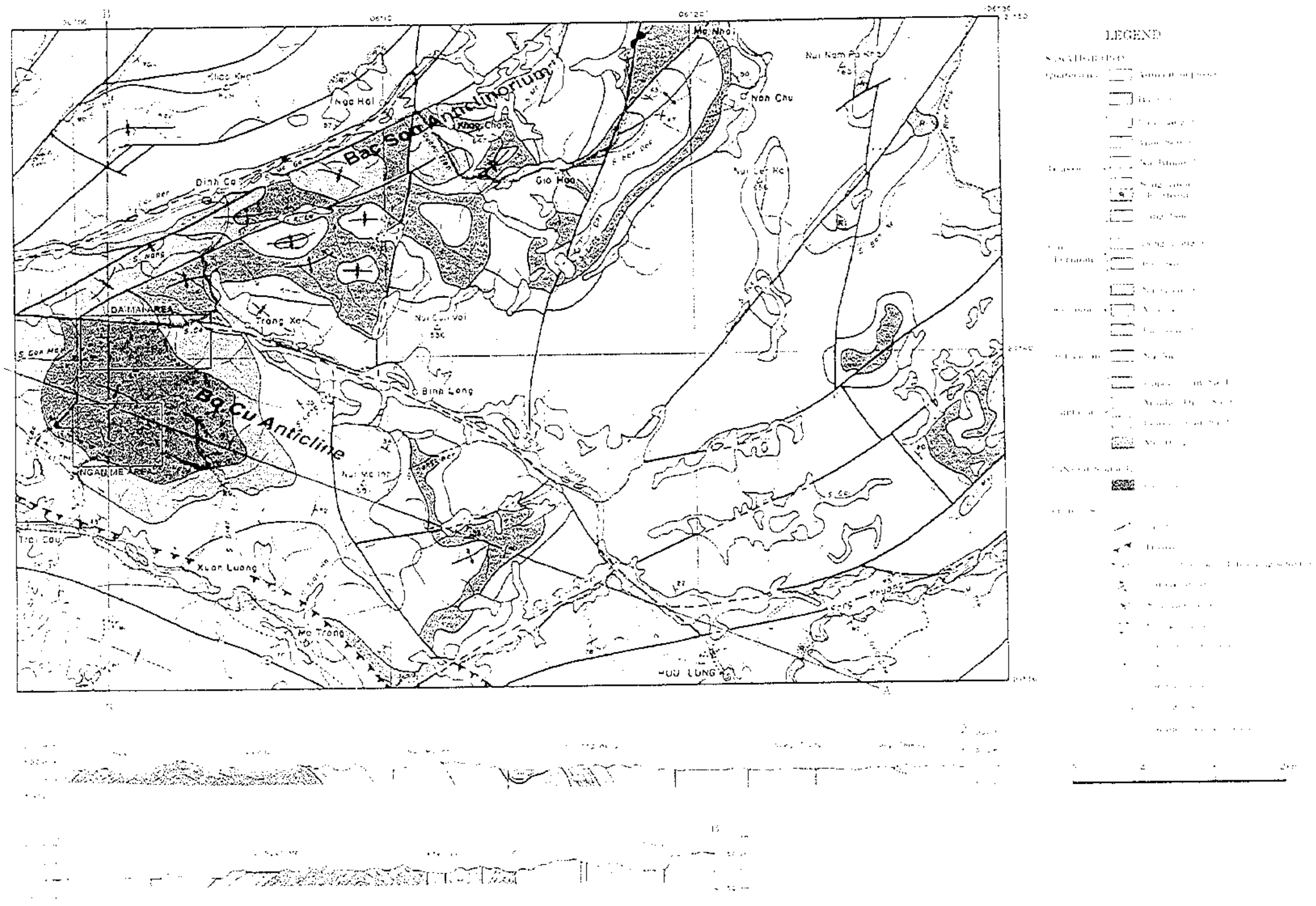
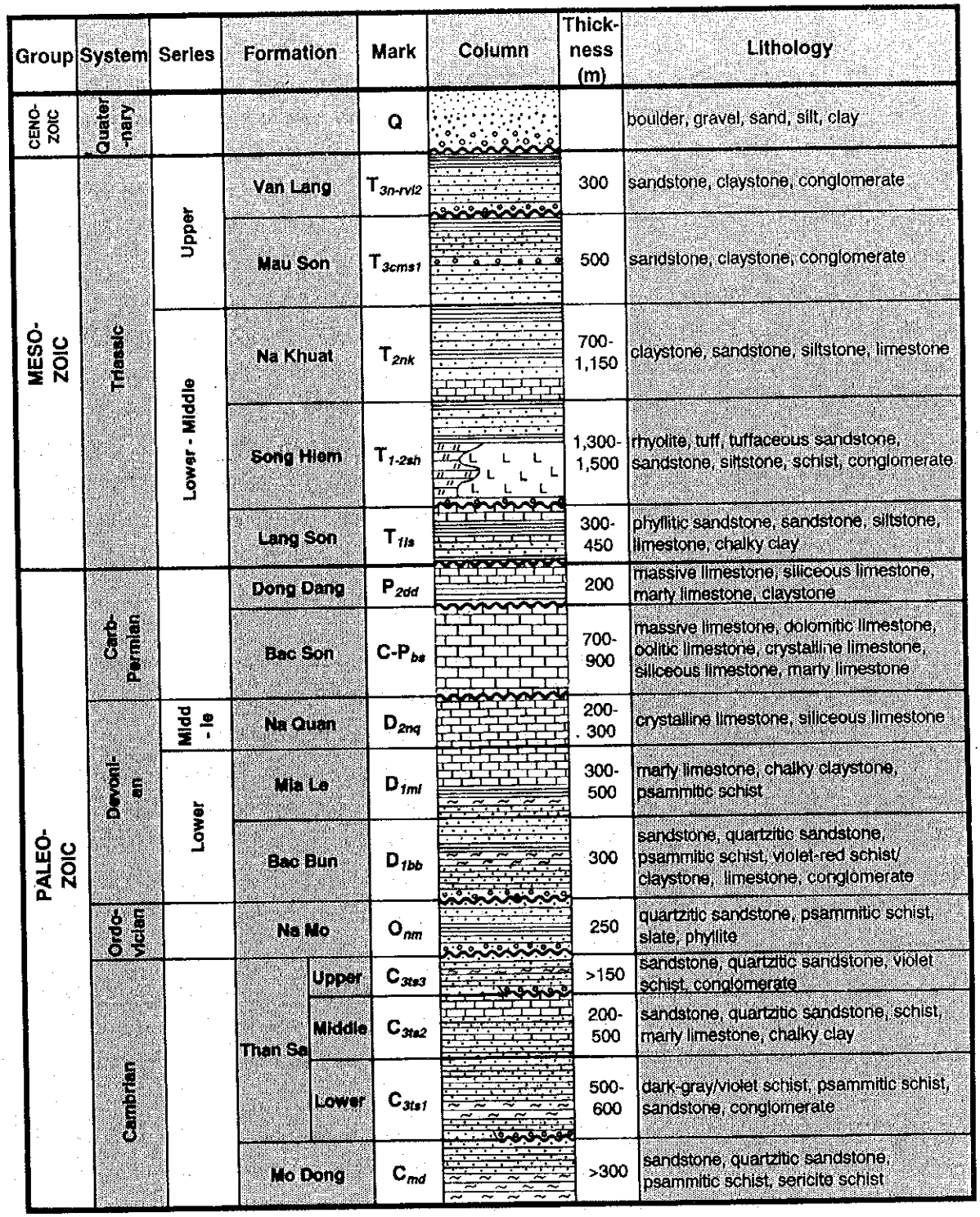


Fig. 1-3 Geology and Geologic Profile of the Bo Cu Area



Group	System	Series	Formation	Mark	Thick-ness (m)	Lithology
CENO-ZOIC	Quater-nary			Q		boulder, gravel, sand, silt, clay
MESO-ZOIC	Triassic	Upper	Van Lang	$T_{3n\text{-}rvl2}$	300	sandstone, claystone, conglomerate
			Mau Son	T_{3cms1}	500	sandstone, claystone, conglomerate
		Lower - Middle	Na Khuat	T_{2nk}	700-1,150	claystone, sandstone, siltstone, limestone
			Song Hiem	$T_{1\text{-}2sh}$	1,300-1,500	rhyolite, tuff, tuffaceous sandstone, sandstone, siltstone, schist, conglomerate
			Lang Son	T_{1ls}	300-450	phyllitic sandstone, sandstone, siltstone, limestone, chalky clay
PALEO-ZOIC	Carbo-Permian		Dong Dang	P_{2dd}	200	massive limestone, siliceous limestone, marly limestone, claystone
			Bac Son	$C\text{-}P_{bs}$	700-900	massive limestone, dolomitic limestone, oolitic limestone, crystalline limestone, siliceous limestone, marly limestone
	Devoni-an	Midd-le	Na Quan	D_{2nq}	200-300	crystalline limestone, siliceous limestone
		Lower	Mia Le	D_{1ml}	300-500	marly limestone, chalky claystone, psammitic schist
			Bac Bun	D_{1bb}	300	sandstone, quartzitic sandstone, psammitic schist, violet-red schist/ claystone, limestone, conglomerate
	Ordo-vician		Na Mo	O_{nm}	250	quartzitic sandstone, psammitic schist, slate, phyllite
	Cambrian		Than Sa — Upper	C_{3ts3}	>150	sandstone, quartzitic sandstone, violet schist, conglomerate
			Than Sa — Middle	C_{3ts2}	200-500	sandstone, quartzitic sandstone, schist, marly limestone, chalky clay
			Than Sa — Lower	C_{3ts1}	500-600	dark-gray/violet schist, psammitic schist, sandstone, conglomerate
			Mo Dong	C_{md}	>300	sandstone, quartzitic sandstone, psammitic schist, sericite schist

Fig. 1-4 Stratigraphic Column of the Bo Cu Area

Group	System	Series	Formation	Mark	Column	Thick-ness (m)	Lithology
CENO-ZOIC	Quater-nary			Q			boulder, gravel, sand, silt, clay
MESO-ZOIC	Triassic	Upper	Van Lang	$T_{3n\text{-}rvl2}$		300	sandstone, claystone, conglomerate
			Mau Son	T_{3cms1}		500	sandstone, claystone, conglomerate
		Lower - Middle	Na Khuat	T_{2nk}		700-1,150	claystone, sandstone, siltstone, limestone
			Song Hiem	$T_{1\text{-}2sh}$		1,300-1,500	rhyolite, tuff, tuffaceous sandstone, sandstone, siltstone, schist, conglomerate
			Lang Son	T_{1ls}		300-450	phyllitic sandstone, sandstone, siltstone, limestone, chalky clay
PALEO-ZOIC	Carb-Permian		Dong Dang	P_{2dd}		200	massive limestone, siliceous limestone, marly limestone, claystone
			Bac Son	$C\text{-}P_{bs}$		700-900	massive limestone, dolomitic limestone, oolitic limestone, crystalline limestone, siliceous limestone, marly limestone
	Devoni-an	Midd-le	Na Quan	D_{2nq}		200-300	crystalline limestone, siliceous limestone
		Lower	Mia Le	D_{1ml}		300-500	marly limestone, chalky claystone, psammitic schist
			Bac Bun	D_{1bb}		300	sandstone, quartzitic sandstone, psammitic schist, violet-red schist/ claystone, limestone, conglomerate
	Ordo-vician		Na Mo	O_{nm}		250	quartzitic sandstone, psammitic schist, slate, phyllite
	Cambrian		Than Sa Upper	C_{3ts3}		>150	sandstone, quartzitic sandstone, violet schist, conglomerate
			Than Sa Middle	C_{3ts2}		200-500	sandstone, quartzitic sandstone, schist, marly limestone, chalky clay
			Than Sa Lower	C_{3ts1}		500-600	dark-gray/violet schist, psammitic schist, sandstone, conglomerate
			Mo Dong	C_{md}		>300	sandstone, quartzitic sandstone, psammitic schist, sericite schist

Fig. 1-4 Stratigraphic Column of the Bo Cu Area

Chapter 4 Discussion on the Results of the Third Phase Survey

4-1 Geology, Geologic Structure and Mineralization

The regional geology of the Bo Cu area consists of sedimentary and metamorphic rocks of Cambrian, Ordovician, and Devonian to Jurassic systems. Acidic volcanics occur in the lower-middle Triassic system. The major parts of these geologic units exhibit the NE-SW, ENE-WSW and WNW-ESE directions which represent the characteristics of the regional geologic structure, and form a complex folding structure. The Bo Cu area is cut into many blocks by tectonic faults. No intrusive body of a large-scale igneous complex was found in this area; only small stocks of granite occur within and in the vicinity of the Bo Cu area. The Bo Cu area is structurally characterized by a series of anticlines and synclines collectively called the Bac Son anticlinorium consisting of the Bo Cu anticline, Bac Son anticline and Trang Xa-Nhat The syncline. The main directions of these folding axes are NE-SW to ENE-WSW in the northwestern to the eastern part. Whereas in the southwestern part of the area, there is a distinctive anticlinal structure whose axis trends WNW-ESE. Most of gold-bearing quartz veins occur at the crest and on the wing of this anticline. It was interpreted that the main orogenic activity in the Bo Cu area occurred in the Triassic or later period (Indosinian). The formation of the Bo Cu anticline, the formation of regional tectonic faults and acid volcanic activity in the Triassic Song Hiem Formation unanimously indicate the importance of this period.

Regarding metallic mineral deposits in the Bo Cu area, two sorts of mineralization, gold-bearing quartz veins and galena lodes, were considered to be significant.

The galena lodes occur mostly in the Carboniferous-Permian limestone. Several galena showings were found in the course of the first phase regional geological survey and geochemical exploration. Some of them contain a significant amount of silver and lead (up to 99.6 g/t Ag, 9.33 % Pb at 120 cm in width). The similarity of geology and mineralization was discussed with the galena deposit in the Cho Dien area which was a famous Pb-Zn district in the northern Vietnam. The potential of galena resources in the Bo Cu area, however, was estimated to be small from the results of the first phase regional survey.

The occurrence of gold-bearing quartz veins is characterized structurally by the spatial closeness to the folding structure. Several promising areas for gold deposits have been extracted through the survey so far within the Bo Cu area, and the reconnaissance drilling was carried out.

Gold-bearing quartz veins occur near the crest and on the wing of the Bo Cu anticline. The veins show a general trend of nearly E-W strike with various dippings. The formation of these veins was probably controlled by the folding activity. According to the results of the stereo net analysis, several vein systems were distinguished. Each prospect shows some specific trends of vein systems which seem to be closely related to the location on the anticline. Fig. 1-5 shows the results of the

stereo net analysis of quartz veins in the Da Mai and Ngan Me areas. The table below is the summary of vein systems in each prospect.

Area	Prospect	Structural Location on the Bo Cu Anticline	Number of Quartz Veins examined	First Concentration	Second Concentration
Da Mai Area	Khe Ma-S.Khuon Da	On the NE wing	35	N63°E, 52°N	--
	NE of N. Bo Cu	Near the crest (northern side)	77	N82°E, 20°N	N82°E, 73°S
	Da Mai-Khe Dui	On the crest	484	E-W, 53°S	N78°E, 40°N
Ngan Me Area	Khe Can	On the crest	95	N82°W, 35°S	N55°W, 20°N
	Khe Cam	Near the crest (southern side)	33	N66°E, 30°S	--
	Bai Vang	On the SW wing	121	N82°W,56°S	--
	Ba Khe	On the SW wing	190	N82°W, 45°S	--

According to these data, the vein systems on the Bo Cu anticline can be divided into three main groups, those dipping north (Khe Ma-S. Khuon Da), those dipping south (Khe Cam, Bai Vang, Ba Khe), and the mixture of north-dipping and south-dipping (NE of N. Bo Cu, Da Mai-Khe Dui, Khe Can). The first group occurs on the northeastern wing of the Bo Cu anticline. The second group, on the contrary, occurs on the southwestern wing of the anticline. The third group -- mixture of north- and south-dippings -- is located on and near the crest of the anticline. A significant relationship of vein systems with the location on the anticlinal structure was clearly observed.

Gold-bearing quartz veins were thought to be formed in fissures of a tensile nature. Shear structure is not particularly developed along the veins. Quartz veins in the Bo Cu area are not large but rather small. They sometimes show a lens-like shape. Swelling in width with rapid shrinking and branching were frequently observed. Another characteristic feature of veins in this area is their mode of occurrence. They form groups. Swarm of veins occurs in a narrow zone generally extending in the E-W direction.

Gold occurs mainly as free native gold in quartz vein in this area. This is the main reason why the gold grade exhibits a very erratic nature. Gold grade tends to be higher in a part where is relatively rich in sulfide minerals. Two most common sulfide minerals thought to be related to the gold mineralization are: pyrite and arsenopyrite.

Silicification, chloritization, sericitization and carbonitization were frequently observed in and around quartz veins. Quartz veins of a certain size always accompany strong silicification,

chloritization and sericitization. Two kinds of quartz veins were distinguished in the appearances: white quartz veins and gray to light gray quartz veins. In veins which were composed mainly of white quartz, intensive chloritization and sericitization were recognized. In veins composed of gray quartz together with a small amount of white quartz, sericitization was slightly weaker than in white quartz veins, and chloritization was significantly weaker than in white quartz veins. Carbonate minerals such as calcite and ankerite were found mainly in gray quartz; therefore, gray quartz veins sometimes contain a significant amount of carbonate minerals. Gray quartz veins were sometimes cut by white quartz veins. White quartz was interpreted to be formed slightly later than the mineralization of gray quartz. Gold and sulfide minerals are found in both gray quartz and white quartz.

The gold-bearing quartz veins in the detailed survey area are understood to belong to the mesothermal gold deposit. This matter has been confirmed according to the following evidences:

(1) Geologic environment that the veins are hosted mainly by sedimentary and metamorphic rocks of the Cambrian system.

(2) Gangue minerals of veins (consisting of quartz and some calcite).

(3) Ore mineral assemblage (particularly, arsenopyrite, pyrite, chalcopyrite and galena are intimately accompanied).

(4) The occurrence of pyrrhotite and bornite which probably indicates deposition of comparatively high temperature.

(5) Alteration features (mainly composed of silicification, sericitization and chloritization).

(6) Significantly low Ag/Au ratio (=1 to 4 averaging of ore and rock-chip samples).

(7) Characteristic features of fluid inclusions, especially those of relatively high homogenization temperature and slightly high salinity.

Data of fluid inclusions may indicate the nature of ore fluid. More than 1,000 fluid inclusions have been studied for three survey phases, and several characteristic features of inclusions were revealed. Values of homogenization temperature of each fluid inclusion are distributed from 121°C up to 386°C. The temperatures up to 386°C are regarded to be significantly high in this kind of gold mineralization. The fluid inclusions were composed of various types of inclusions: liquid-rich, gas-rich, polyphase, etc. Halite crystals were sometimes observed in fluid inclusions. CO_2 gas was observed in some gas-rich inclusions. Salinities of fluid inclusions are slightly higher within this type of gold deposits; data of up to 8.7 wt. % NaCl equiv. were obtained. These evidences of fluid inclusions, together with the geological data, suggest that the gold mineralization in this area may be related with the emplacement of granitic intrusion.

The place of the mineralization in this area was presumed within a marginal part of the South China plate according to the results of the regional geological survey in the first phase. It was

suggested that the gold mineralization in this area belonged to the category of the continental-type gold deposit.

4-2 Potential of Mineral Resources

Gold potential has been expected in the Bo Cu area, and some ideas were proposed in the first phase survey. The type of mineralization is mesothermal gold-bearing quartz veins hosted by the Cambrian Mo Dong and Than Sa Formations; the veins occur on the wing of the Bo Cu anticline; the formation of veins is controlled structurally by the regional folding activity; the development of quartz veins is relatively intense; geochemical anomalies occur densely; remarkable chargeability anomalies of the IP geophysics occur; the size and magnitude of gold mineralization are estimated to be medium or small from the features of mineral showings and geochemical/geophysical anomalies.

In the second phase, the detailed survey comprising geological survey, rock-chip geochemical survey, IP geophysical survey and reconnaissance drilling were carried out in two areas selected by the first phase survey. Two holes totaling 600.00 m were drilled in the Da Mai-Khe Dui prospect. Many significant intersections of gold-bearing quartz veins were caught in these reconnaissance drill holes, although some of the targeted extensions of veins on the surface have been appeared to be insignificant in the depth.

In MJVB-1, thirteen major groups of quartz veins were caught in total. Although native gold was observed in drill cores and slime of drilling at several depths in the field, no significant assay result was obtained. The extension of the significant gold-bearing quartz vein, which was discovered by the Division during an early phase of surface survey in 1990 and which occurs about 200 m northwest of the drill hole, has not been caught in the drill hole. It was thought to be disappeared in the depth.

In MJVB-2, thirteen major groups of quartz veins were intersected, and several significant intersections were returned as follows: 56.640 g/t Au and 9.0 g/t Ag (28 cm in width, 51.24 – 51.52 m), 1.880 g/t Au and 2.0 g/t Ag (49 cm in width, 137.38 – 137.87 m), 1.020 g/t Au (11 cm in width, 181.00 – 181.11 m), 10.815 g/t Au (10 cm in width, 181.22 – 181.32 m), and 1.400 g/t Au (12 cm in width, 256.67 – 256.79 m). These significant assays were obtained from some of the veins which occurred in swarms of quartz veins, veinlets or networks. The width of each vein changes considerably from a few centimeters to a few meters.

In the third phase, two holes totaling 600.00 m were drilled in the Da Mai-Khe Dui prospect in the Da Mai area, and other two holes totaling 600.00 m were drilled in the Ba Khe prospect in the Ngan Me area. Some significant intersections of gold-bearing quartz veins were caught in these drill holes in the Da Mai-Khe Dui prospect (MJVB-3 and MJVB-4) as well as in the second phase. The result of drilling in the Ba Khe prospect (MJVB-5 and MJVB-6), however, was disappointing.

In MJVB-3, a total of eight major groups of quartz veins were caught. Several significant intersections were returned as follows: 75.600 g/t Au and 3.0 g/t Ag (35 cm in width, 79.85 – 80.20 m), 1.770 g/t Au (33 cm in width, 147.60 – 147.93 m), and 0.570 g/t Au (37 cm in width, 230.77 – 231.14 m). The extensions of some gold-bearing quartz veins which occurred on the surface in the Khe Dui creek were caught in the drill hole. Most of them showed no gold value.

In MJVB-4, eight major groups of quartz veins were intersected. The development of quartz veins/networks were remarkable in this hole, especially at the depth from around 100 to 150 m. Only one significant result was returned in this hole: 12.400 g/t Au (45 cm in width, 60.15 – 60.60 m).

In MJVB-5 and MJVB-6, no significant assay result was found, although several groups of quartz veins were intersected in the drill holes.

Gold occurs mainly as free native gold in quartz vein in the Bo Cu area. This is the main reason why the gold grade exhibits an very erratic nature in drill cores; very high grades of Au were returned from some part, while other part showed no significant value of Au even where visible gold was observed on the core and gold grains were recovered from slime of drilling. Generally gold grade becomes higher in a part where is relatively rich in sulfide minerals. Two most common sulfide minerals thought to be related to the gold mineralization are: pyrite and arsenopyrite. In details, however, gold grades are not connected directly with sulfide contents.

The drilling this year was carried out aiming at the high chargeability anomaly zones based on the IP geophysical exploration done in the second phase. The laboratory tests and examination using drill core samples were made about the relationship between sample properties and the distribution of chargeability, and the following results were obtained:

(1) The drilling this year penetrated through the central part of the high chargeability zone (>30mV/V) in every hole. The chargeability of quartz vein samples was measured by using the drill cores, and very high chargeability values were indicated (up to 356mV/V).

(2) These quartz veins contain a lot of sulfide minerals (pyrite and arsenopyrite).

(3) Chargeability were low (at around several mV/V) in sandstone, schist and quartz vein of relatively poor in sulfide content.

(4) As the distribution of chargeability and the distribution of quartz veins are concerned in detail, there were several discrepancies. Because most of the quartz veins are thin; they show irregularly in the distribution. It is natural that they don't meet perfectly.

Thus, it was thought to be confirmed by these tests that the overall distribution of IP anomalies has been explained by the distribution of quartz veins in drill holes. It was also confirmed that the high chargeability anomalies were originated, not all but at least partially, from the distribution of quartz veins which contain a certain amount of sulfide minerals.

As an evaluation of potentials for gold deposit in this area, the following conclusions were

deducted as a result of survey for three years. Gold-bearing quartz veins in this area were lack of continuation and small scale. They dispersedly occur, without any concentration of significant scale. Some of them occasionally show very high grade in Au. Such grades, however, are not stable. The dimension of gold resources was considered to be something from several hundreds to several thousand tons of ores; that is unfortunately far smaller than what is required in our exploration.

The integrated interpretations of the survey results for two detailed survey areas are shown in Figs. 1-6 and 1-7.

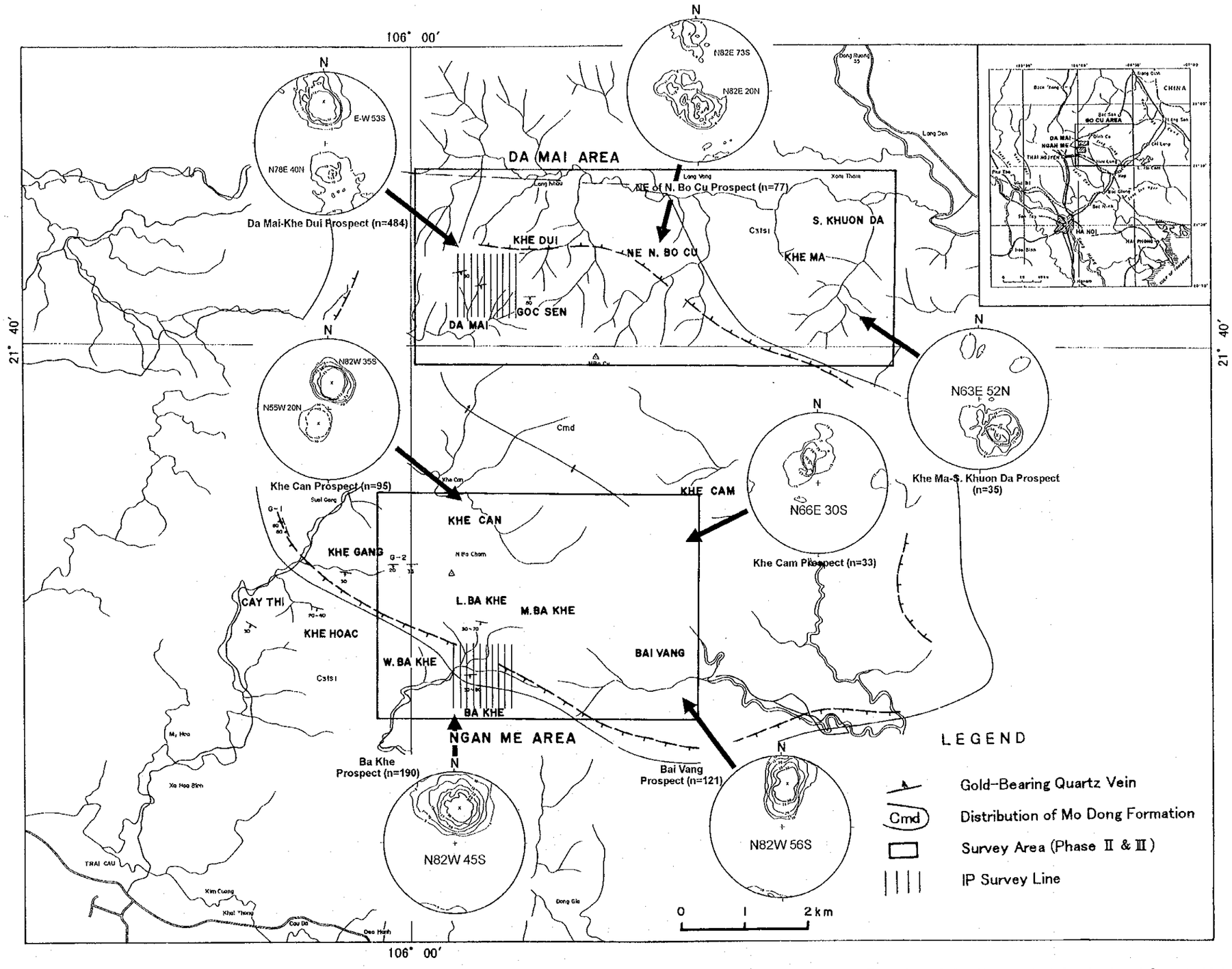
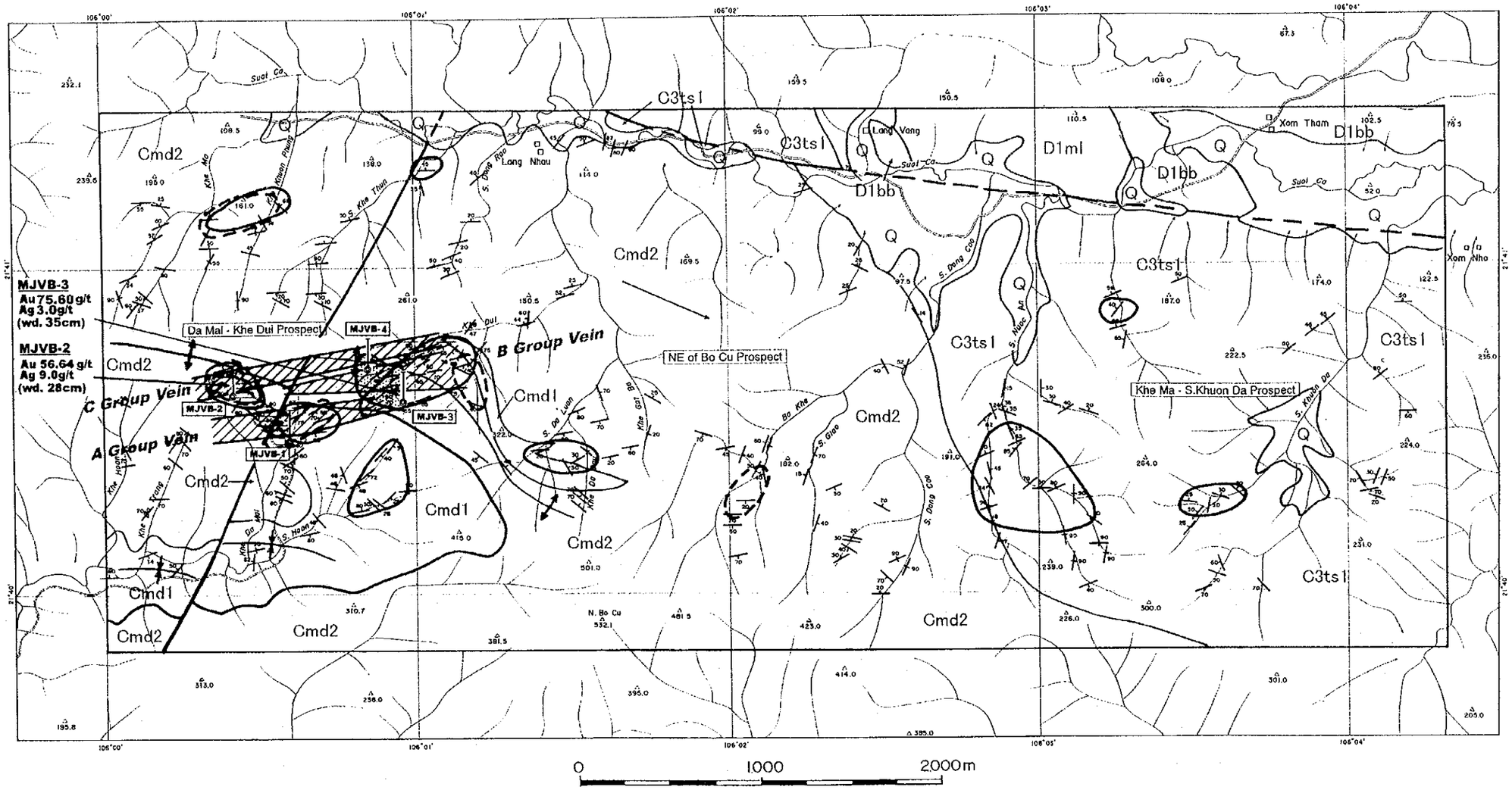


Fig. 1-5 Results of the Stereo Net Analysis of Quartz Veins in the Da Mai and Ngan Me Areas



LEGEND

Quaternary	Q	Alluvial Deposits
Devonian	D1ml	Mia Le Formation
	D1bb	Bac Bun Formation
Cambrian	C3ts1	Lower Than Sa Formation
	Cmd2	Mo Dong Formation 2. Mainly composed of sandstone
	Cmd1	1. Alternation of schist & sandstone

Fault

Anticlinal Axis

Synclinal Axis

Drill Hole (Phase II & III)

Gold-bearing Quartz Vein

Group of Vein

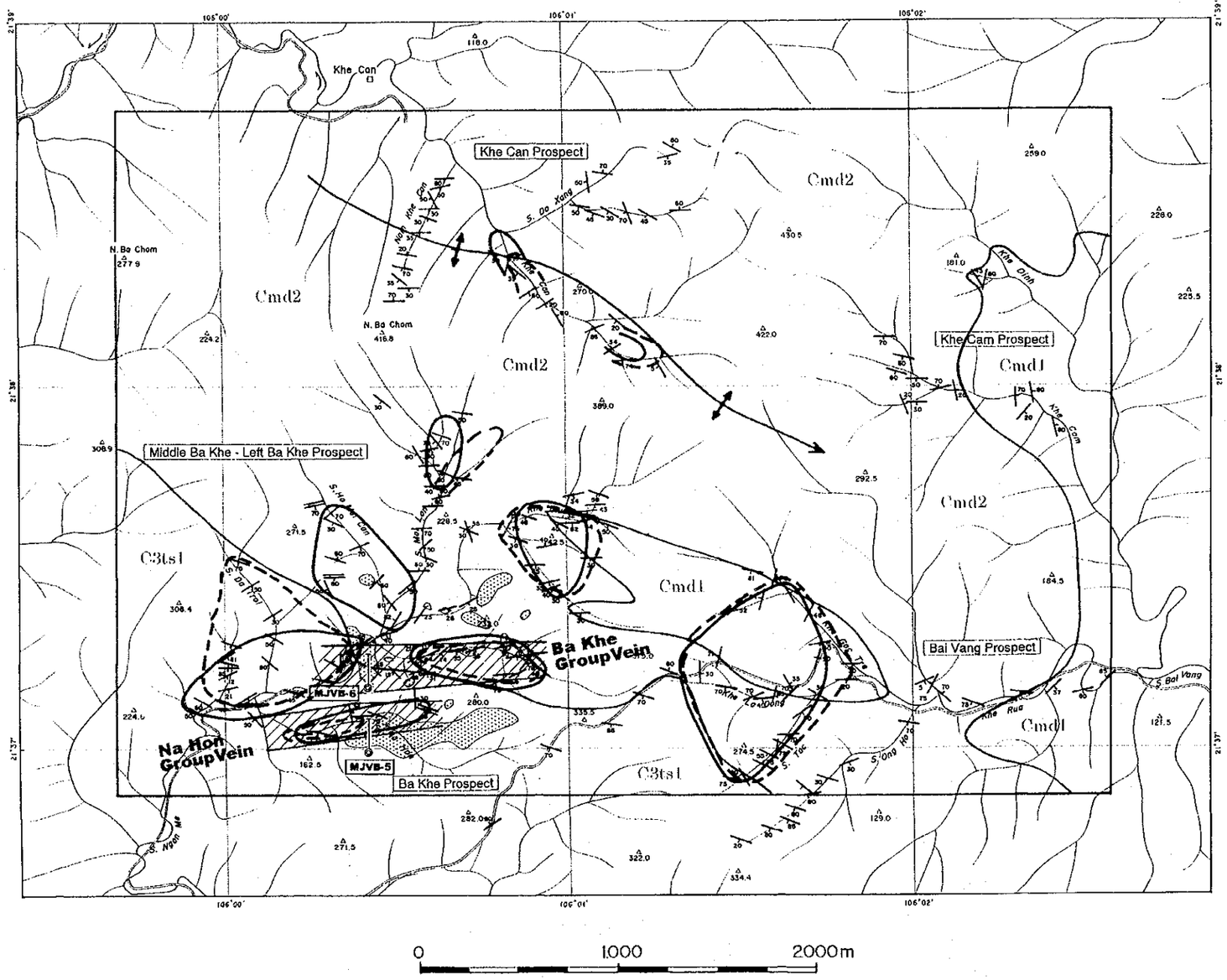
Major Geochemical Anomaly (Au)

Major Geochemical Anomaly (Basemetal)

Strong IP Anomaly (Chargeability > 30mV/V)

Weak IP Anomaly (Chargeability > 15mV/V)

Fig. 1-6 Integrated Interpretation of the Survey Results in the Da Mai Area



LEGEND

Cambrian
- C3ts1 — Lower Than Sa Formation
- Cmd2 — Mo Dong Formation
  2. Mainly composed of sandstone
- Cmd1 — 1. Alternation ofschist & sandstone

Fault

Anticlinal Axis

Gold-bearing Quartz Vein

Group of Vein

Major Geochemical Anomaly (Au)

Major Geochemical Anomaly (Basemetal)

Strong IP Anomaly (> 30mv/v)

Drill Hole (Phase III)

Fig. 1-7 Integrated Interpretation of the Survey Results in the Ngan Me Area

Chapter 5 Conclusions and Recommendations

5-1 Conclusions

On the basis of the results of the third phase drilling survey together with the results of the first and second phases surveys, the following conclusions are obtained.

(1) Geology, Geologic Structure and Gold Mineralization

As a result of exploration for three years, significant gold mineralization which is represented by the distribution of extensive outcrops of quartz veins/networks and was outlined by the distribution of distinctive geochemical and geophysical anomalies has been surveyed in the Da Mai and Ngan Me areas. The type and conditions of gold mineralization in this area were discussed on the basis of petrology, mineralogy, hydrothermal alteration and fluid inclusion studies. It was interpreted that the gold mineralization was formed under mesothermal conditions. The gold-bearing quartz veins are hosted by sandstone and schist of the Cambrian Mo Dong and Tan Sa Formations. The prospects are located either on the crest or on the southwestern wing of the Bo Cu anticline. This geological setting is probably a crucial factor for the formation of gold-bearing quartz veins.

(2) Da Mai Area

The overall distribution of gold mineralization in the Da Mai-Khe Dui prospect is approximately 200-300 m wide and more than 1,500 m long. Gold-bearing quartz veins in the Da Mai-Khe Dui prospect are subdivided into several groups of veins mainly running E-W with dips of steep S or N. Numerous people's mining shafts, adits and prospecting pits are distributed in the prospect. Visible gold was frequently observed in quartz veins in Khe Dui creek. Assay results such as 55.704 g/t Au at 8 cm in width and 13.385 g/t Au and 4.0 g/t Ag at 45 cm in width were obtained through the previous detailed survey. A couple of distinctive IP anomalies -- strong one in Khe Dui creek and weak one in West Da Mai-Da Mai creek -- were delineated by the geophysical survey. It has been expected for an exploration target that high-grade gold ores of a dimension of several hundred meters by several hundred meters in the length and in the depth with a width of 1 to 2 meters might be existed in the Da Mai-Khe Dui prospect.

In the second and third phases, four holes totaling 1,200 m were drilled in the Da Mai-Khe Dui prospect in the Da Mai area. Several intersections of gold-bearing quartz veins were caught in these drill holes.

In MJVB-1, thirteen major groups of quartz veins were caught in total. Although native gold was observed in drill cores and slime of drilling at several depths in the field, no significant assay result was obtained.

In MJVB-2, thirteen major groups of quartz veins were intersected, and several significant intersections up to 56.640 g/t Au at 28 cm in width (51.24 – 51.52 m) were returned.

In MJVB-3, eight major groups of quartz veins were caught in total, and a few significant intersections up to 75.600 g/t Au at 35 cm in width (79.85 – 80.20 m) were obtained.

In MJVB-4, eight major groups of quartz veins were intersected. Although native gold was observed in drill cores and slime of drilling at some depths in the field, only one significant assay result (12.400 g/t Au at 45 cm in width, 60.15 – 60.60 m) was obtained.

Although ore bodies of a significant dimension had been targeted in this area, the results of drilling were disappointing. The ore potentials were presumed to be less than what were expected.

(3) Ngan Me Area

In the Ba Khe prospect in the Ngan Me area, two holes totaling 600 m were drilled in the third phase. The results were disappointing. No significant intersection of gold-bearing quartz veins was encountered in these drill holes, although the development of quartz veins was significant.

5-2 Recommendations for the Future Exploration

Da Mai Area

Exploration for gold ores of a certain size and of high grade has been carried out for three years in the Da Mai area. Despite the occurrences of high-grade gold ores in some part of the quartz veins, the dimension seems to be small for our exploration target. Therefore, no further work is recommended in the Da Mai area.

Ngan Me Area

The results of exploration in the Ngan Me area were similar to those in the Da Mai area. Therefore, no further work is recommended in the Ngan Me area.