THE KINGDOM OF THAILAND
REPORT ON GEOLOGICAL SURVEY OF
THE OMKOI AREA, NORTHWESTERN THAILAND

PHASE III

JUNE 1986

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THE KINGDOM OF THAILAND
REPORT ON GEOLOGICAL SURVEY
OF
THE OMKOI AREA, NORTHWESTERN THAILAND
(THE COLUMBITE-TANTALITE EXPLORATION PROJECT)

PHASE III

JUNE 1986

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN

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PREFACE

The Government of Japan, in response to the request of the Government of the Kingdom of Thailand, decided to conduct the mineral exploration in the Omkoi area, northwestern Thailand and entrusted its execution to the Japan International Cooperation Agency. Considering its technical aspects, the agency sought collaboration with the Metal Mining Agency of Japan to accomplish the task.

For the work 1985, the third phase, the Metal Mining Agency of Japan dispatched the survey team consisting of eight members to Thailand between October 23, 1985 and March 9, 1986.

The field survey was brought to completion with the cooperation of the Kingdom of Thailand, in particular, the Department of Mineral Resources, Ministry of Industry.

This report summarized the results of the survey of the third phase and also forms a part of the final report with the results of preceding phases.

We wish to express our heartfelt gratitude to the agencies of the Government of the Kingdom of Thailand and other authorities for their kind cooperation and support to the Japanese survey team.

May, 1986

Keisuke Arita

President

Japan International Cooperation Agency

Masayuki Nishiie

President

Metal Mining Agency of Japan

CONTENTS

Tables

Figures

APPENDICES

Plates

SUMMARY

The present surveys were carried out as the Phase III program of the cooperative basic survey for development of mineral resources in the Omkoi area, the Kingdom of Thailand. The survey areas were the four, A_1, A_2, B_1 and B_2, which had been picked out as the result of the Phase II survey program.

In the Phase III program, a drilling survey, making 51 holes with a total drilled length of 1,600 m, and a trenching survey, cutting 57 trenches with a total length of 1,940 m, were carried out for the purpose of making examination for the occurrence of mineral deposits in these areas.

The Survey Area is underlain by Precambrian metamorphic rocks and sedimentary rocks, Cambrian and Ordovician sedimentary rocks, Pre-Carboniferous metamorphic rocks, Carboniferous, Triassic and Cretaceous granitic rocks intruded in the above rocks, Tertiary conglomerate and Quaternary gravel layers.

Area A_1 is the part where tungsten geochemical anomalies were detected by the Phase II survey, and there is Pha Pun Dong mine where tungsten-mineralized pegmatite veins and tin and tungsten-mineralized tourmaline quartz veins are mined, adjacent to this area on its north.

This area is formed of Triassic biotite granite, muscovite-biotite granite, and pegmatite veins and quartz veins intruded in the granite.

In this area 13 holes with a total length of 390 m were drilled, and 13 trenches totalling 670 m were excavated. As a result some tungsten mineral indications in pegmatite veins were found. Among them such a high value as 1.4% of WO_3 was obtained, but the most part of these indications were found to be of low grade and scattered on a small scale.

Area A_2 is the part where tin geochemical anomalies were detected by the Phase II survey, and there are old workings of secondary tin ore deposit in this area.

This area consists of Triassic muscovite-biotite granite with pegmatite veins and quartz veins.

In this area seven holes with a total length of 210 m were drilled, and six trenches totalling 390 m were excavated. The maximum tin content, 250 ppm, was obtained from granite. Also tin contents not less than 100 ppm were found in pegmatite veins. Relatively high tin contents of these granites which is the country rock indicates that there is enough conditions for being a place of mineralization. On the basis of above results there is a possibility of the occurrence of mineralized veins on a small scale.

Area B_1 is the part where niobium and tantalum geochemical anomalies were detected by the Phase II survey. This area is underlain by Precambrian metamorphic rocks and pegmatite veins intruded in them. In this area five holes with a total length of 150 m were drilled, and 10 trenches

totalling 270 m were excavated. The drilling holes and trenches consist mostly of pegmatite but contain schistose rocks and gneissic rocks. The schistose rocks which is the country rock hardly contain niobium or tantalum. The geochemical anomalies that were detected here originate in pegmatite, but mineral indications were not found. The pegmatite is widely altered into white clay.

Area B_2 is the area where tin and tungsten geochemical anomalies were detected by the Phase II survey. This area is formed of Precambrian biotite paragneiss, pelitic schist, quartz schist, and quartz veins and pegmatite veins intruded in these rocks.

In this area 26 holes with a total length of 850 m were drilled, and 28 trenches totalling 610 m were excavated. Drill Holes MJT–29, 38 and 43 and Trench B_2–10 intersected tungsten mineral indications.

In Drill Hole MJT–29 a quartz vein lies in the extent from 10.50 to 10.70 m depth, and in the hanging and foot walls of this vein scheelite is disseminated, indicating 0.78% of WO_3 in the extent from 10.00 to 10.80 m depth. Below it in the extent from 12.60 to 13.60 m depth calc-silicate rock is found, and in this neighborhood scheelite is disseminated, indicating 0.14% of WO_3 in the extent from 12.00 to 14.00 m depth.

In Drill Hole MJT–38, in the extent from 11.30 to 12.50 m depth, calc-silicate rock exists, and in it scheelite grains are scattered, indicating 1.06% of WO_3 in the extent from 11.50 to 12.00 m depth.

In Drill Hole MJT–43, in skarn in the extent from 11.85 to 12.30 m depth, small quantities of scheelite grains are scattered, indicating 0.19% of WO_3. In addition, 0.20% of WO_3 was obtained from calc-silicate rock in the extent from 8.30 to 8.50 m depth.

In Trench B_2–10 very small quantities of scheelite is disseminated in 20 cm–wide quartz vein and calc-silicate rock interlaid in biotite paragneiss and its hanging and foot walls, indicating 0.48 to 1.56% of WO_3 though the content varies to some extent according to the place. Moreover, in parallel small-scale mineralized veins run in the extent from 3 m on the hanging wall side of this mineralized vein and in the extent of 0.5 m on its foot wall side; the former indicates 1.38% of WO_3 in a 5 cm width, and the latter 0.49% of WO_3 in a 10 cm width. These mineral indications are all small in scale and their extensions could not be confirmed, but their distribution on lines in nearly the NW–SE direction indicates that they are related with the gneissic structure of the country rock.

From the mode of mineral emplacement similar to that in the Yong Ku mine close to this area, there still remain the possibilities of the existence of unknown mineralized veins.

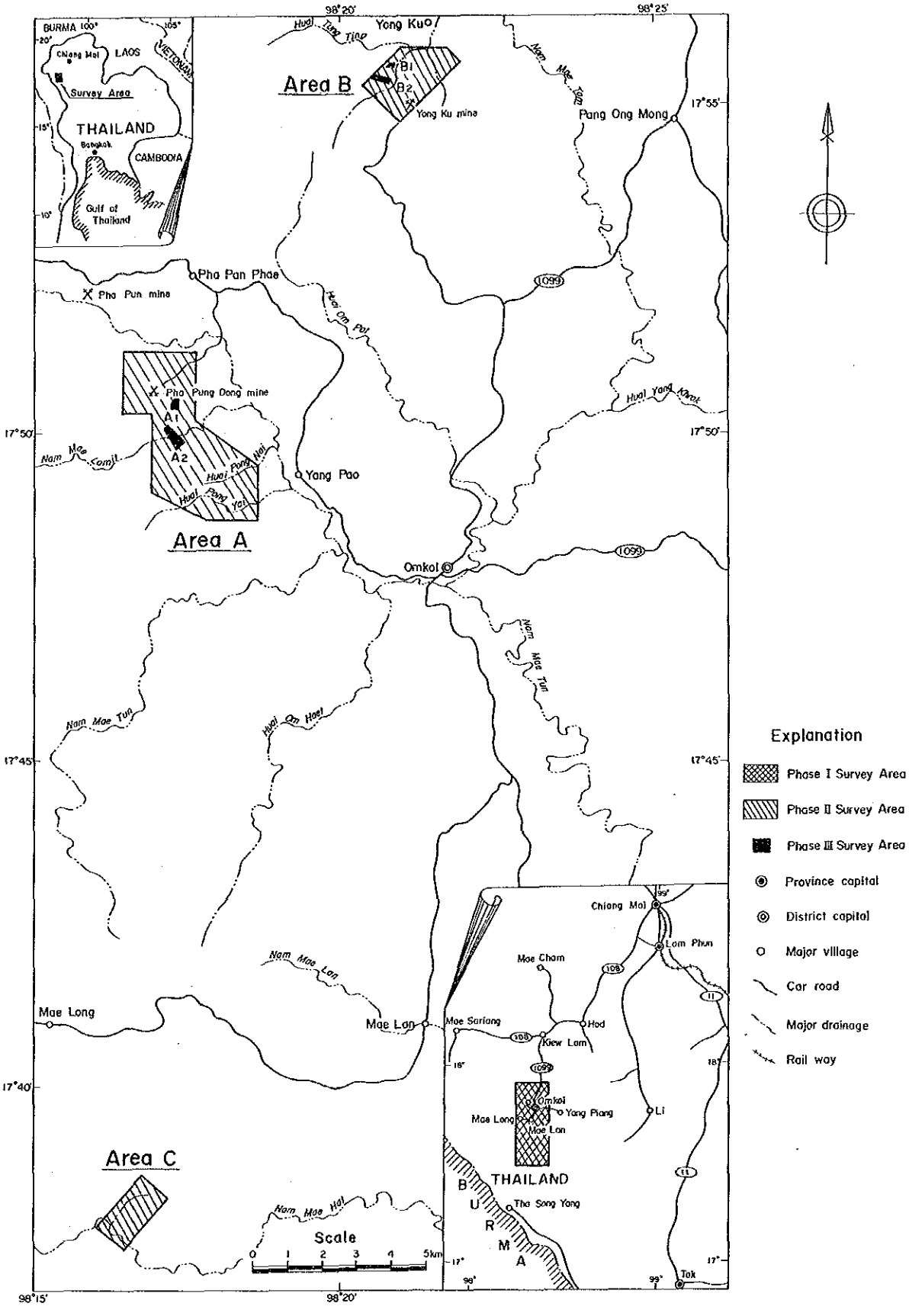

Fig. 1 Location Map of the Survey Area

CHAPTER 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

1–1 Background and Objective of the Survey

Principal mineral products of Thailand are tin, tungsten, fluorite, barite, antimony, and a variety of other minerals. Among these, tin is the most important item of metallic mineral resources, and its production amount ranks fourth in the world following Malaysia, Indonesia and Bolivia.

The economic importance of the tin mining in Thailand is not limited to its large amount of production. The tin mining has yield substantial quantities of such rare metals as niobium and tantalum as byproducts.

In the past, Thailand has exported these rare metals as tin smelting slag and ores, but is now making preparations for establishing a processing plant to recover them. Owing to the need of assuring stable production of the raw materials to be fed to the plant and in expectation of an increasing demand for such metals, the Government of Thailand requested the Japanese Government to conduct a cooperative basic survey for development of mineral resources including such rare metals as niobium and tantalum.

The Japanese Government, in response to this request, agreed to set about the above-mentioned survey starting in 1983 as the initial year over the Omkoi area in northern Thailand to find the possibility of occurrence of rare metals including niobium and tantalum in addition to tin and tungsten.

The Phase I survey was conducted over a rectangular area, 50 km in the north-south direction by 20 km in the east-west direction (coming up to 1,000 km^2), centering around the town of Omkoi, Omkoi District, Chiang Mai Province as shown in Fig. 1. The survey consisted of a geological survey and geochemical prospecting by stream sediment.

As the result of this survey, the regional geology and geological structure were brought to light, the mineralization zones of such mines as Yong Ku and Pha Pun Dong mines were revealed in detail, and some geochemical anomaly areas were picked out.

In the Phase II survey, a geological survey and geochemical prospecting were carried out over the areas that had been found most promising among the anomaly areas picked out in the survey of the preceding year (Areas A, B and C). As the result of these surveys, four areas (Areas A_1, A_2, B_1 and B_2) were selected as ones offering the highest possibility of the occurrence of mineral deposits.

In this year's survey, which is Phase III, drilling and trenching surveys were conducted over

the above-mentioned four areas for the purpose of appraising the potentialities of mineral deposits by making examinations for mineral indications and by finding their scales and continuity.

1–2 Survey Works

Since mineral indications were scarcely recognized on the surface and the scales of ore bodies were presumed small, it was considered necessary to make drilling and trenching in large numbers for the purpose of revealing the geological conditions and ascertaining the mineral indications.

From this consideration, a total of 51 drill holes having the depth of 30 m mostly, partly 40 m and 50 m, all dips were vertical, totalling 1,600 m in drilling length; and 57 trenches with the standard width of 1 m and depth of 2 m, the length ranging from 10 m to 100 m, were excavated, the total length coming up to 1,940 m.

The result of the drilling work has been rendered in the core log on a scale of 1 to 100, and that of the trenching work in the form of sketches on the same scale. Also samples in the numbers shown in Table 1 were collected from the drill cores and trenches.

The analysis of the samples and the consideration survey's results were carried out in Japan and their results are set forth in this report.

Table 1 Quantities of Survey Works

Drilling

Area	Nos.	Lengh/hole (m)	No. of holes	Total length (m)	No. of Samples	Components
A_1	MJT–1 ~13	30	13	390	80	Sn, W
A_2	MJT–14~20	30	7	210	44	Sn, W
B_1	MJT–21~25	30	5	150	49	Nb, Ta
B_2	MJT–26~51	30,40,50	26	850	208	Sn, W
Total	–	–	51	1600	381	–

Trenching

Area	Nos.	Total Length m	Total Volume m^3	No. of Samples	Components
A_1	A_1–1~13	670	1250	182	Sn, W
A_2	A_2–1~ 6	390	680	92	Sn, W
B_1	B_1–1~10	270	540	95	Nb, Ta
B_2	B_2–1~28	610	1210	173	Sn, W
Total	–	1940	3680	542	–

1–3 Members of the Survey Team

The members who participated in the planning and negotiations for the Phase III survey and in the field works are listed in the following:

(1) Planning the Survey and Negotiations

Japan	
Makoto Ishida	Metal Mining Agency of Japan
Tadaaki Ezawa	– do. –
Yasuo Endo	– do. –
Thailand	
Sermsakdi Kulvanich	Department of Mineral Resources
Phairat Suthakorn	– do. –
Prachon Charoensri	– do. –
Peerapong Khuenkong	– do. –

(2) Field Survey

Japan	
Iwao Uchimura	Geologist, Leader
Hiroshi Yoshida	Geologist
Sakari Kon	Drilling Engineer
Hisao Ataku	– do. –
Kyuya Fujii	– do. –
Yoshikazu Sugawara	– do. –
Etsuo Hatakeyama	– do. –
Yuko Sasaki	– do. –
Thailand	
Sermsakadi Kulvanich	Project Director
Phairat Suthakorn	Project Manager
Peerapong Khuenkong	Geologist, Leader
Patchara Jariyawat	Geologist
Aroon Tritrangan	– do . –
Boonchu Panglinput	Surveyor
Sawang Wanlaiad	– do . –
Werachat Jittamase	Drilling Engineer
Sukhum Tawatchana	– do. –
Wiwat Srisungworn	– do. –

Khanchai Saingthong	Drilling Engineer
Sontaya Phungsuk	– do. –
Vinai Trumong	– do. –
Chalong Pingsripang	– do. –
Sanea Kitpayap	– do. –
Sanit Kongsawi	– do. –
Suthep Raungcharean	– do. –
Sangwan Kattapong	– do. –
Piroj Theppitak	– do. –
Seree Hokkian	– do. –
Utain Ghoomvichitra	– do. –

CHAPTER 2 DRILLING WORKS

CHAPTER 2 DRILLING WORKS

2–1 Outline of Drilling Works

The drilling survey was carried out to reveal the geological conditions in detail, clarify mineral indications, and throw light on how mineral deposits occur in the four areas of A_1, A_2, B_1 and B_2 that had been picked out as the result of the Phase II survey.

The drilling positions lie in the said four areas as shown in Fig. 2, 3; 13 drill holes were made in Area A, 7 holes in Area A_2, 5 holes in Area B_1, and 26 holes in Area B_2.

A survey team formed of six drilling engineers and two geologists arrived at the town of Omkoi in which the base camp was located on October 29, 1985 and set about preparatory works. Two drilling machines with appurtenant equipment and materials, arriving at Omkoi on November 4, were immediately brought into sites in Area B_2 and set up, and started to drill on November 9 and 10 respectively.

The personnel set up for one machine was one Japanese engineer, one Thai engineer and two local workers. Based on a three-shift system with eight hours work for one shift, the work was proceeded with 24 hours as a rule, though this rule was changed in a measure at the times of bringing in, withdrawing and transferring the machine.

A heavy rain soon after the start of the work caused its suspension for about a week, but afterwards the work made smooth progress, and the two machines finished the respective drilling entirely on February 13, 1986 (Table 2).

Although the quantity of work planned initially was 40 drill holes coming up to a total drilling length of 1,200 m, since tungsten mineralization was hit by a drill in Area B_2, the plan was changed and additional drilling of 11 holes totalling 400 m was made, the quantity resulting in 51 holes totalling 1,600 m.

After the drilling work was finished, the recovered cores were stored at the Chiang Mai Regional Office of the Department of Mineral Resources; the machines and appurtenants were brought to Omkoi, packed up there, and transported to Bangkok on truck on February 21, 1986.

2–2 Drilling Method and Used Machine Parts

The ordinary drilling method was employed because the drilling depth was shallow, in a depth of 30, 40 and 50 meters.

At the start of drilling a 116 mm metal crown was used; this was changed to an 86 mm diamond bit when the hole came to a depth of about 5 m; this bit was changed to a 66 mm diamond

bit at a depth of about 20 m, and final hole diameter was 66 mm. However, in Area B_2, since the rock was soft to the deep part because of remarkable weathering, tungsten-carbide bit were also used to make 86 mm and 66 mm holes.

To protect the hole walls, casing pipes of HW (114 mm) and NQ-NU (94 mm) were inserted. For drilling water, clear water was used, but mud fluid was employed at soft layers encountered partly. To raise the core recovery rate the drilling team used core pack tubes, which had been provided for in two kinds, one for hard rock and another for soft rock, and used discriminately according to changes in the rock property. The used machines, appurtenants, and expendable supplies are shown in Table 3 ~ 5.

2–3 Drilling Operation

(1) Arrangement works

(i) Road construction

The survey areas are all in a mountainous area; there are motorable roads up to the mines, about 1 km away at the nearest from Area A_1 and Area B_2 respectively. To improve the work efficiency the existing roads were widened and improved, and for some sites roads to bring in the machine and materials were made and bridges were laid at river-crossing points so that a truck may come to the sites. A bulldozer was used in these works.

The time taken by a truck to come from Omkoi to Area A_1 was about one hour, and about 50 minutes to Area B_1 and Area B_2. Since topography was steep between Area A_1 and Area A_2 roads for a carrier were made from Area A_1 to Area A_2.

(ii) Bringing in machines and preparations

The drilling machines and appurtenants brought by sea from Japan were transported from Bangkok to Omkoi on four 5 ton trucks and a trailer. After arrival at Omkoi, they were taken out from package, inspected, and brought to the site by a few trips on a 5 ton truck. For minor transport to the drilling sites, a crane carrier and a crawler carrier were used, the former being also used for assembling and setting up the drilling machine.

(2) Transferring a machine

As the number of the drill holes was large, the works of land preparation for drilling machine seats and of laying roads for a carrier were proceeded with in parallel with the drilling operation; to transfer a drilling machine a crane carrier and a crawler carrier were used.

Transport between Area A_1 and Area B_2 depended on a truck, and transport between Area A_1 and Area A_2 on the carriers and manual labor.

(3) Water for drilling operation

Water for drilling in Area A_1 was drawn from a drainage crossing the Survey Area in the direction of east-west, the one in Area A_2 from the Lamit river, and the one in Areas B_1 and B_2 from a valley on the southeast side. The head was not more than 80 to 90m in all the cases, and the water conveying distance was about 1,300 m in the longest case of Area B_2. To convey water, 1½ " PVC hoses were arranged, and it was lifted with a water supply pump. In doing the work in Areas A_1 and B_2, the water in valleys was low because of the dry season, and the work involved some time for awaiting water.

(4) Drilling

The drilling work was not very much different from hole to hole because the drilling depth was short and the geology was in a similar condition. Accordingly, the description of the drilling work is put together for each area, the records for the drill holes being shown in Table 6.

(i) Area A_1 Drill holes MJT–1 to 13

In drilling the 10 holes of MJT–1 to 10, the overburden and weathered, soft rock part from the hole top to a depth of about 5 m was drilled with a 116 mm tungsten-carbide bit, and an HW casing pipe was put in to a 5 m depth. For the deeper part, the bit was changed to an 86 mm diamond bit, and the work reached the bottom at a 30 m depth. There no casing pipe was inserted because the rock was fresh granite with a few cracks.

In drilling the three holes of MJT–11, 12 and 13, the work was made with a 116 mm tungsten-carbide bit from the hole top to a depth of about 5 m with an HW casing pipe inserted; for the deeper part, the bit was changed to an 86 mm diamond bit and drilling was made to a depth of 11.45 to 20 m; but the cores often broke, so that, putting in an NQ-NU casing pipe, the deeper part was drilled up to the 30 m deep bottom with a 66 mm diamond bit.

(ii) Area A_2 Drill holes MJT–14 to 20

In all the holes, fresh hard rock, homogeneous and having a few cracks, appeared from a depth of 3 to 5 m. The work was made with a 116 mm tungsten-carbide bit up to a 5 m depth through the overburden and weathered, soft rock part, inserting an HW casing pipe. For the deeper part, the bit was changed to an 86 mm diamond bit, advancing the work to a depth of 18 to 28 meters. The deeper part up to the 30 m deep bottom was drilled with a 66 mm diamond bit. No casing pipe was used because stable rock continued there.

(iii) Area B_1 Drill holes MJT–21 to 25

Almost all the cores were formed of pegmatite, partly presenting schist. As a result of remarkable alteration, the rock was soft, but collapse of wall was rarely seen and smooth drilling was made.

From the hole top to a depth at 1.7 to 5 m the work was made with a 116 mm tungsten-carbide bit, inserting an HW casing pipe. For the deeper part, the bit was changed to an 86 mm diamond bit to drill up to a depth of 11 to 18 m, inserting an NQ-NU casing pipe. The deeper part until the 30 m deep bottom was drilled with a 66 mm diamond bit.

(iv) Area B_2 Drill holes MJT–26 to 51

Almost all the rock was extremely weathered, soft gneiss, but partly hard calc-silicate rock and schist are interlaid in it. Accordingly, efforts were made to recover cores by discriminately using core pack tubes for soft rock and ones for hard rock, but the core recovery rate turned out the lowest among the four survey areas.

In 30 m deep drill holes excluding Holes MJT–42, 44, 46 and 50, a 116 mm tungsten-carbide bit was used for the overburden and up to a depth of 2.0 m to 5.0 m in the weathered, soft rock, inserting an HW casing pipe. This bit was changed to an 86 mm diamond bit or a tungsten-carbide bit for the deeper part and drilling was made to a depth of 12.0 m to 20.0 m, inserting an NQ-NU casing pipe. The deeper part up to the 30 m deep bottom was drilled with a 66 mm diamond bit or a tungsten-carbide bit.

Since the intended depth of Holes MJT–42, 44 and 50 was 50 m and that of Hole MJT–46 40 m, all deeper than the 30 m depth of the other holes, after inserting an HW casing pipe, drilling with an 86 mm diamond bit was extended as far as possible; at a depth of 24 m to 27 m an NQ-NU casing pipe was put in, and the drilling of the deeper part up to the hole bottom, 40 m or 50 m deep, was made with a 66 mm diamond bit.

(5) Withdrawal work

Both machines' operation coming to an end on February 13, 1986, such a withdrawing operation as pulling out casing pipes and taking off water supply pipes was immediately set about, and all the machines and appurtenants were carried to Omkoi on 5 ton trucks. They were put in order, inspected, and packed up at a machine and material storage at Omkoi, then the packed machines and others were shipped to Bangkok on three trucks on February 21, 1986.

The collected cores were brought to the Chiang Mai Regional Office of the Department of Mineral Resources.

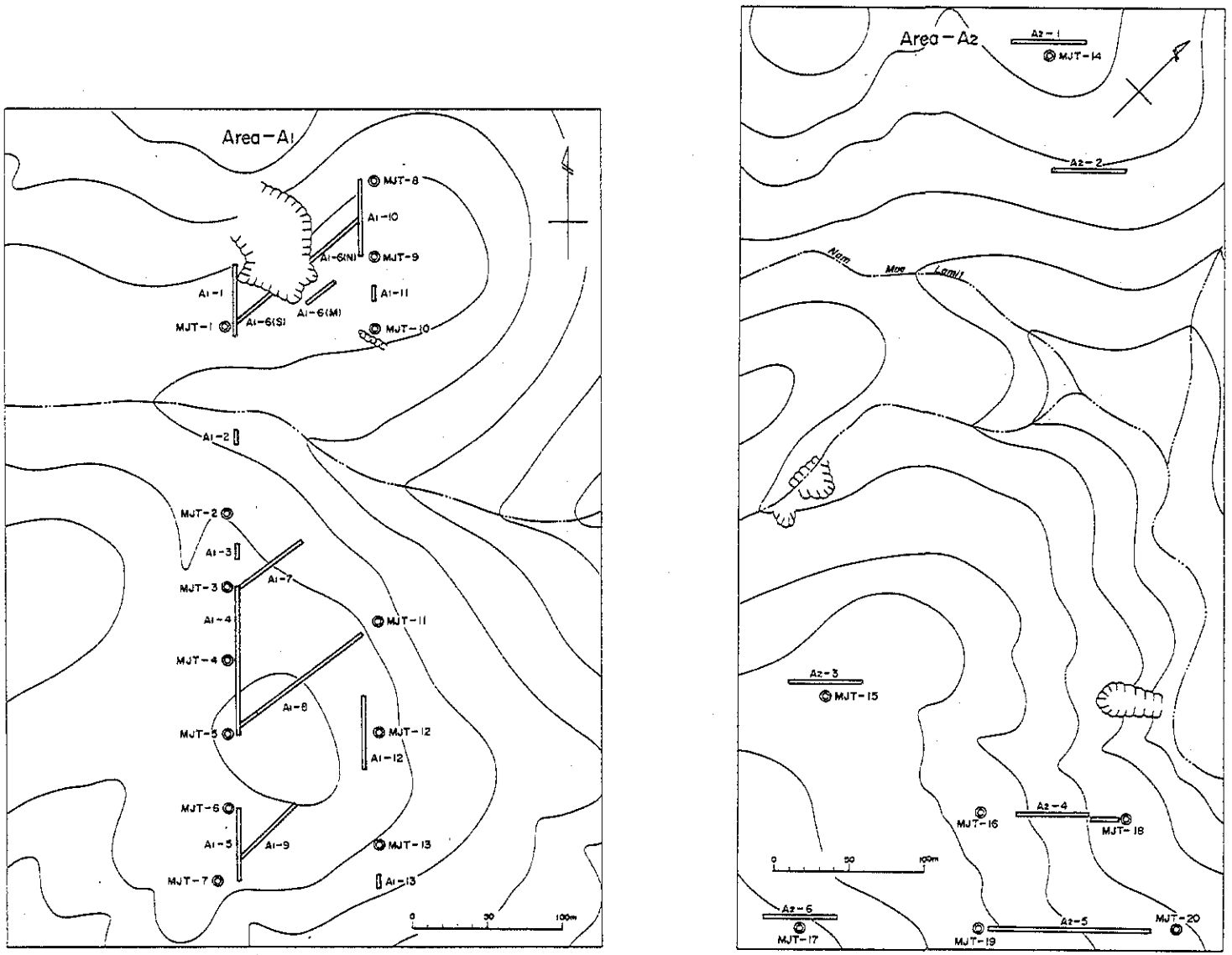

Fig. 2 Location map of drilling and trenching points in the Area A

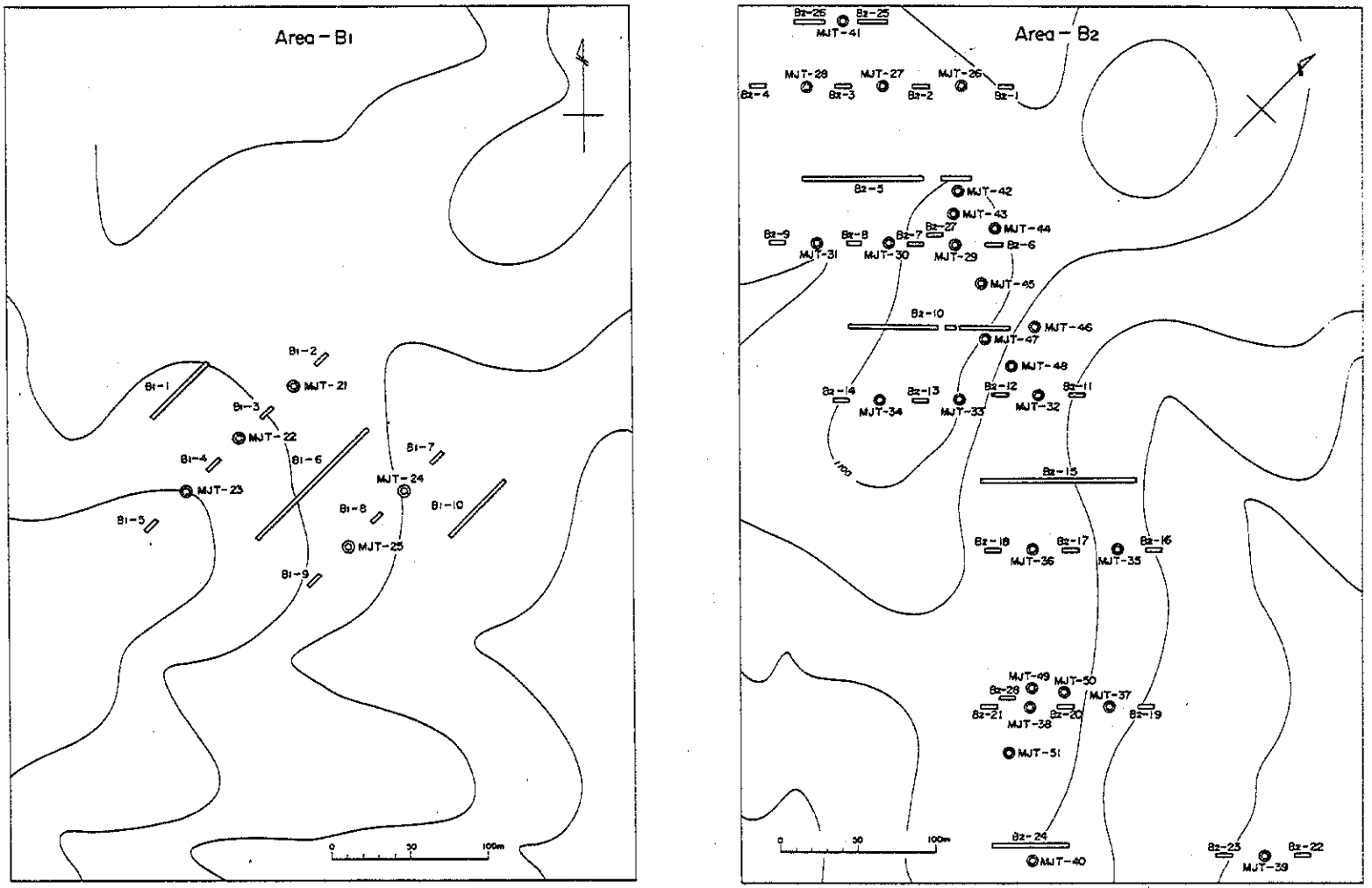

Fig. 3 Location map of drilling and trenching points with Area B

Table 2 Processing sheet of the drilling works

Area	Drill hole No.	Drilling Length
A1	MJT-1	30.00
	2	30.00
	3	30.00
	4	30.00
	5	30.00
	6	30.00
	7	30.00
	8	30.00
	9	30.00
	10	30.00
	11	30.00
	12	30.00
	13	30.00
A2	14	30.00
	15	30.00
	16	30.00
	17	30.00
	18	30.00
	19	30.00
	20	30.00
B1	21	30.00
	22	30.00
	23	30.00
	24	30.00
	25	30.00
B2	26	30.00
	27	30.00
	28	30.00
	29	30.00
	30	30.00
	31	30.00
	32	30.00
	33	30.00
	34	30.00
	35	30.00
	36	30.00
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	38	30.00
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	49	30.00
	50	50.00
	51	30.00

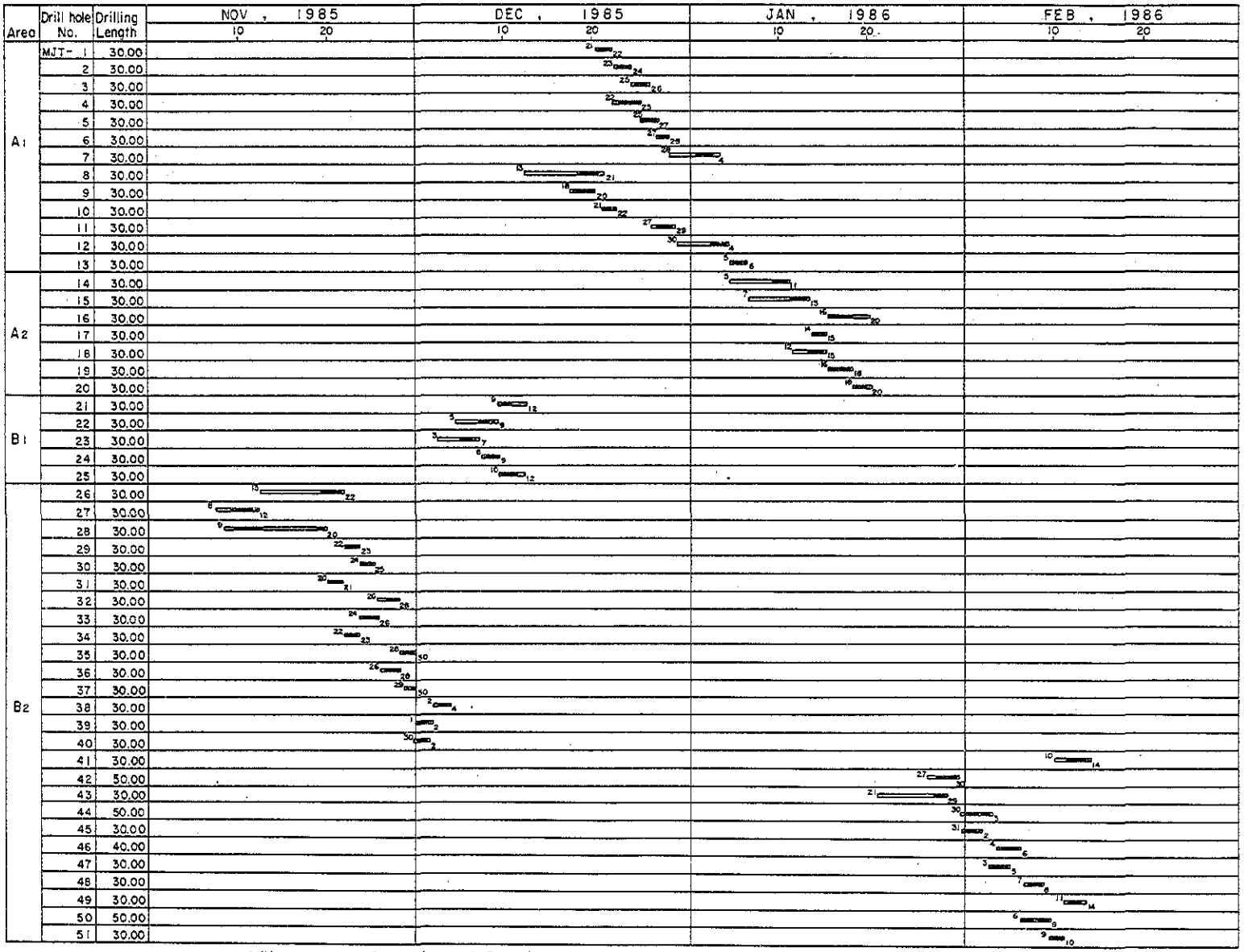

Table 3 Drilling equipment

Item	Model	Quantity	Specification	
Drilling Machine with Power Unit	D–1 (TOHO CHIKA KOKI CO.)	2 sets	Capacity Dimensions: Height: Length: Width: Weight:	100 m 1,320 mm 1,220 mm 650 mm 750 kg
	Swivel Head		Spindle speed	50, 150, 300 rpm
	Hoist		Hoisting capacity	Max. 1,000 kg
	Oil Pump		Capacity Max. pressure;	67 kgm 1,325 kg/cm²
	NS–90CE (YANMAR)	2 sets	Diesel engine Revolution Related power;	 2,200 rpm 8.0 PS
Drilling Pump with Power Unit	MG–5A (KOKEN)	2 sets	Cylinder bore dia: Delivery volume; Max. pressure: Stroke:	68 mm 70 ℓ/min 25 kg/cm² 170 s.p.m
	NS–75C (YANMAR)	2 sets	Diesel engine Revolution: Related power:	 2,200 rpm 6.5 PS
Water Supply Pump	MS–1503	2 sets	Capacity: Max. pressure:	131–150 ℓ/min 30 kg/cm²
	NF–110K	2 sets	Diesel engine Revolution: Related power:	 2,400 rpm 110 PS
Derick	Tripod (EZAKI)	2 sets	Steel pipe Max. load capacity	 1,500 kg

Item	Model	Quantity	Specification	
Crawler Carrier	YFW5D–1 (YANMAR)	1 set	Max. loading cap: Empty weight:	500 kg 345 kg
Crane Carrier	YFC20(O)E (YANMAR)	1 set	Max. loading cap: Max. lifting cap: Empty weight:	1,700 kg 950 kg 1,860 kg
	NS–110GEFW (YANMAR)		Diesel engine Revolution: Related power:	 2,200rpm 11 PS
Chain saw	S–55 (PARTNER)	2 sets	Chain bar Weight	20 inch 6.0 kg
Engine Generator	SV–1500 (SUZUKI)	3 sets	Capacity Engine:	1.3/1.5 KVA 100 V 3,000/3,600 rpm 3.2/3.8 PS
Drill Road – ditto –	40.5 mm 40.5 mm	20 pcs 10 pcs		40.5 mm x 3.00 m 40.5 mm x 1.50 m
Casing Pipe – ditto –	HW NQ–NU	10 pcs 45 pcs		HW x 1.00 m NQ–NU x 1.00 m
Double Core Tube – ditto – – ditto – – ditto – – ditto –	116 mm (S) 86 mm (S) 86 mm (N) 66 mm (S) 66 mm (N)	2 sets 2 sets 2 sets 2 sets 2 sets		CPS 116 x 1.00 m CPS 86 x 1.50 m CPS 66 x 1.50 m

Table 4 Consumed bits

Area	Hole No. \ Bit Type		116mm	86mm			66mm	
			Metal	Metal	Bit	Reamer	Metal	Bit
A_1	MJT– 1	Length	5.00	–	25.00		–	–
		Quantity	0.2	–	2.5		–	–
	2	Length	5.00	–	25.00		–	–
		Quantity	0.2	–	1.3		–	–
	3	Length	4.00	–	26.00		–	–
		Quantity	0.1	–	1.4		–	–
	4	Length	5.00	–	25.00		–	–
		Quantity	0.1	–	0.6		–	–
	5	Length	5.00	–	25.00		–	–
		Quantity	0.1	–	0.7		–	–
	6	Length	5.00	–	25.00		–	–
		Quantity	0.1	–	0.7		–	–
	7	Length	4.10	–	25.90		–	–
		Quantity	0.1	–	0.5		–	–
	8	Length	5.00	–	9.40	1.0	–	15.60
		Quantity	0.2	–	1.0		–	0.5
	9	Length	5.00	–	13.30	1.0	–	11.70
		Quantity	0.2	–	1.5		–	0.5
	10	Length	4.00	–	12.00		–	14.00
		Quantity	0.1	–	1.0		–	0.5
	11	Length	5.00	–	6.45		–	18.55
		Quantity	0.1	–	1.3		–	0.3
	12	Length	3.75	–	16.25		–	10.00
		Quantity	0.1	–	1.0		–	0.7
	13	Length	3.90	–	15.10		–	11.00
		Quantity	0.2	–	0.1		–	0.4
	Sub total	Length	59.75	–	249.40		–	80.85
		Quantity	1.8	–	13.6	2.0	–	2.5
A_2	14	Length	4.60	–	23.40		–	2.00
		Quantity	0.2	–	0.5		–	1.0
	15	Length	4.30	–	19.80		–	6.00
		Quantity	0.1	–	0.1		–	0.7
	16	Length	2.65	–	17.05		–	10.30
		Quantity	0.1	–	0.1		–	0.7
	17	Length	1.70	–	17.30		–	11.00
		Quantity	0.1	–	0.1		–	0.5
	18	Length	1.50	–	16.70		–	11.80
		Quantity	0.2	–	0.1		–	0.6
	19	Length	3.50	–	15.70		–	10.80
		Quantity	0.2	–	0.1		–	0.6
	20	Length	2.00	–	16.90		–	11.10
		Quantity	0.2	–	0.1		–	0.8
	Sub total	Length	20.15		126.85			63.00
		Quantity	1.1		1.1			4.9

Area	Hole No. \ Bit Type		116mm	86mm			66mm	
			Metal	Metal	Bit	Reamer	Metal	Bit
B_1	MJT–21	Length	5.0	–	9.70		–	15.30
		Quantity	0.1	–	0.2		–	0.2
	22	Length	4.50	–	10.50		–	15.00
		Quantity	0.1	–	0.3		–	0.2
	23	Length	3.30	1.50	6.20		–	19.00
		Quantity	0.1	0.3	0.2		–	0.2
	24	Length	4.20	–	13.50		–	12.30
		Quantity	0.1	–	0.2		–	0.2
	25	Length	1.70	–	14.30		–	14.00
		Quantity	0.1	–	0.3		–	0.3
	Sub total	Length	18.70	1.50	54.20		–	75.60
		Quantity	0.5	0.3	1.2		–	1.1
B_2	26	Length	5.00	8.00	2.00		2.20	12.80
		Quantity	0.1	0.5	0.2		0.2	0.2
	27	Length	5.00	12.00	–		13.00	–
		Quantity	0.1	0.7	–		0.5	–
	28	Length	5.00	4.50	4.50		2.50	13.50
		Quantity	0.1	0.3	0.2		0.4	0.1
	29	Length	3.60	7.10	2.00		–	17.30
		Quantity	0.1	0.4	0.2		–	0.2
	30	Length	2.00	10.30	2.70		3.00	12.00
		Quantity	0.1	0.6	0.2		0.7	0.2
	31	Length	5.00	8.50	2.80		1.70	12.00
		Quantity	0.1	0.4	0.1		0.5	0.3
	32	Length	2.20	–	12.10		2.30	13.40
		Quantity	0.1	–	0.2		0.8	0.2
	33	Length	4.00	–	8.00		–	18.00
		Quantity	0.1	–	0.2		–	0.2
	34	Length	5.00	7.40	4.00		3.70	9.90
		Quantity	0.1	0.5	0.2		0.7	0.2
	35	Length	3.00	3.70	6.30		2.80	14.20
		Quantity	0.1	0.3	0.2		0.6	0.2
	36	Length	1.70	5.50	9.55		–	13.25
		Quantity	0.1	0.4	0.1		–	0.2
	37	Length	2.70	–	9.70		3.50	14.10
		Quantity	0.1	–	0.2		0.6	0.2
	38	Length	3.00	7.50	4.50		2.30	12.70
		Quantity	0.1	0.4	0.2		0.5	0.4
	39	Length	2.40	7.40	6.50		–	13.70
		Quantity	0.1	0.6	0.3		–	0.3
	40	Length	3.00	8.30	3.70		3.70	11.30
		Quantity	0.1	0.6	0.3		0.7	0.2
	41	Length	4.00	2.50	8.50		2.10	12.90
		Quantity	0.1	0.2	0.1		0.5	0.4

Area	Hole No. \ Bit Type		116mm	86mm			66mm	
			Metal	Metal	Bit	Reamer	Metal	Bit
B_2	MJT–42	Length	4.00	3.60	17.40		–	25.00
		Quantity	0.1	0.3	0.1	1.0	–	0.5
	43	Length	2.30	5.20	8.40		–	14.10
		Quantity	0.1	0.4	0.1		–	0.4
	44	Length	5.00	3.50	16.20		3.20	22.10
		Quantity	0.1	0.3	0.1		0.6	0.5
	45	Length	5.00	–	15.00		–	10.00
		Quantity	0.1	–	0.1		–	0.5
	46	Length	5.00	7.20	12.80		–	15.00
		Quantity	0.1	0.5	0.2		–	0.5
	47	Length	5.00	2.50	9.60		–	12.90
		Quantity	0.1	0.2	0.1		–	0.3
	48	Length	5.00	3.70	9.60		3.50	8.20
		Quantity	0.1	0.2	0.1		0.7	0.5
	49	Length	5.00	6.20	2.40		–	16.40
		Quantity	0.1	0.4	0.1		–	0.3
	50	Length	5.00	3.50	17.00		–	24.50
		Quantity	0.1	0.2	0.1		–	1.0
	51	Length	5.00	4.40	7.60		–	13.00
		Quantity	0.1	0.3	0.2		–	0.5
	Sub total	Length	102.90	132.50	202.85		49.50	362.25
		Quantity	2.6	8.7	4.1	1.0	8.0	8.5
Grand total		Length	201.50	134.00	633.30		49.5	581.70
		Quantity	6	9	20	3.0	8	17
Length/Bit			33.58	14.89	31.67		6.19	34.22
Bits/Hole			0.11	0.39	0.4		0.57	0.39

Table 5 Consumables used

Area	Drilling hole No.	Light oil (l)	Gasoline (l)	Mobil oil (l)	Grease (kg)	C.M.C (kg)
A_1	MJT– 1	115	40	0.5	0.5	1.0
	2	98	37	–	0.7	1.0
	3	110	40	–	0.3	1.0
	4	130	45	1.0	0.5	1.0
	5	105	38	–	0.5	1.0
	6	95	36	–	0.8	0.5
	7	110	40	–	0.5	1.0
	8	93	37	10.0	0.2	0.5
	9	94	35	15.0	0.3	1.0
	10	95	36	–	0.5	1.0
	11	110	38	0.5	0.3	1.0
	12	95	35	–	0.7	1.0
	13	105	36	–	0.4	0.7
	Sub total	1,355	493	27.0	6.2	11.7
A_2	14	111	40	1.0	0.3	0.5
	15	96	36	–	0.3	1.0
	16	120	45	–	0.5	0.8
	17	110	40	3.0	0.4	1.0
	18	115	45	1.5	0.7	1.0
	19	95	35	–	0.3	1.0
	20	98	37	8.5	0.4	1.0
	Sub total	745	278	14.0	2.9	6.3
B_1	21	80	35	–	0.5	0.8
	22	75	35	2.0	0.3	1.0
	23	96	39	–	0.3	1.0
	24	94	40	3.0	0.5	1.0
	25	120	50	–	0.4	1.0
	Sub total	465	199	5.0	2.0	4.8
B_2	26	129	38	15.0	0.3	–
	27	147	53	15.0	0.5	1.0
	28	150	50	–	0.3	0.5
	29	110	38	–	0.3	1.0
	30	76	39	4.0	0.4	0.7
	31	75	36	–	0.3	0.5
	32	95	37	2.0	0.5	1.0
	33	110	40	1.5	0.2	0.5
	34	92	38	–	0.4	1.5
	35	95	37	2.0	0.7	1.0
	36	97	38	2.0	0.4	1.0
	37	95	36	–	0.3	1.0
	38	105	35	3.0	0.5	1.0
	39	115	40	2.0	0.3	1.0
	40	110	42	–	0.5	1.0
	41	130	40	15.0	0.5	1.0
	42	165	45	15.0	0.4	1.0
	43	95	35	–	0.3	0.7
	44	239	55	4.0	0.5	2.5
	45	120	38	–	0.4	1.0
	46	147	44	2.0	0.4	2.0
	47	115	40	1.5	0.3	1.0
	48	110	38	–	0.4	0.8
	49	100	40	20.0	0.5	1.0
	50	202	40	–	0.7	2.5
	51	105	36	–	0.6	1.0
	Sub total	3,129	1,048	104.0	10.9	27.2
Grand total		5,694	2,018	150.0	22.0	50.0

Table 6 Summary operational data of each drill hole

Area	Drilling hole No.	Drilling Period	Drilling Length	Core		No. of Drilling Shift			Drilling Speed	
				Length	Recovery	Drilling	Others	Total	*m/shift	**m/shift
A_1	MJT– 1	DEC. 21, '85 ~ DEC. 22, '85	30.00	29.60	99	4.5	0.5	5.0	7.50	6.67
	2	DEC. 23, '85 ~ DEC. 24, '85	30.00	30.00	100	4.5	1	5.5	6.67	5.45
	3	DEC. 25, '85 ~ DEC. 26, '85	30.00	30.00	100	5	0.5	5.5	6.00	5.45
	4	DEC. 22, '85 ~ DEC. 25, '85	30.00	30.00	100	6.5	2	8.5	4.62	3.53
	5	DEC. 25, '85 ~ DEC. 27, '85	30.00	27.80	93	4.5	0.5	5.0	6.67	6.00
	6	DEC. 27, '85 ~ DEC. 28, '85	30.00	30.00	100	4.0	0.5	4.5	7.50	6.67
	7	DEC. 28, '85 ~ JAN. 4, '86	30.00	30.00	100	6.0	6.0	12.0	5.00	2.50
	8	DEC. 13, '85 ~ DEC. 21, '85	30.00	30.00	100	4.5	5.0	9.5	6.67	3.16
	9	DEC. 18, '85 ~ DEC. 20, '85	30.00	30.00	100	4.0	1.0	5.0	8.57	7.50
	10	DEC. 21, '85 ~ DEC. 22, '85	30.00	30.00	100	5	0.5	5.5	6.00	5.45
	11	DEC. 27, '85 ~ DEC. 29, '85	30.00	30.00	100	6	3	9.0	5.00	3.33
	12	DEC. 30, '86 ~ JAN. 4, '86	30.00	30.00	100	4	5	9.0	7.50	6.00
	13	JAN. 5, '86 ~ JAN. 6.86	30.00	30.00	100	5	1	6.0	6.00	5.00
	Sub total	DEC. 13, '85 ~ JAN. 6, '86	390.00	387.40	99.3	63.5	26.5	90.0	6.14	4.33
A_2	14	JAN. 5, '86 ~ JAN. 11, '86	30.00	29.60	99	6	5	11.0	5.00	2.73
	15	JAN. 7, '86 ~ JAN. 13, '86	30.00	30.00	100	4	5	9.0	7.50	3.33
	16	JAN. 16, '86 ~ JAN. 20, '86	30.00	30.00	100	6	3	9.0	5.00	3.33
	17	JAN. 14, '86 ~ JAN. 15, '86	30.00	30.00	100	5	2	7.0	6.00	4.29
	18	JAN. 12, '86 ~ JAN. 15, '86	30.00	30.00	100	6	2	8.0	5.00	3.75
	19	JAN. 16, '86 ~ JAN. 18, '86	30.00	30.00	100	5	1	6.0	6.00	5.00
	20	JAN. 18, '86 ~ JAN. 20, '86	30.00	30.00	100	4	2	6.0	7.50	5.00
	Sub total	JAN. 7, '86 ~ JAN. 20, '86	210.00	209.60	99.8	36.0	20.0	56.0	5.83	3.75
B_1	21	DEC. 9, '85 ~ DEC. 12, '85	30.00	28.60	95	4	3	7.0	7.50	4.29
	22	DEC. 5, '85 ~ DEC. 9, '85	30.00	29.20	97	4	3	7.0	7.50	4.29
	23	DEC. 3, '85 ~ DEC. 7, '85	30.00	28.90	96	5	3	8.0	6.00	3.75
	24	DEC. 8, '85 ~ DEC. 9, '85	30.00	28.70	96	5	1	6.0	6.00	5.00
	25	DEC. 10, '85 ~ DEC. 12, '85	30.00	30.00	100	5	2	7.0	6.00	4.29
	Sub total	DEC. 3, '85 ~ DEC. 12, '85	150.00	145.40	96.9	23	12	35.0	6.52	4.29
B_2	26	NOV. 13, '85 ~ NOV. 22, '85	30.00	30.00	100	6.5	7	13.5	4.62	2.22
	27	NOV. 8, '85 ~ NOV. 12, '85	30.00	30.00	100	8	1	9.0	3.75	3.33
	28	NOV. 9, '85 ~ NOV. 20, '85	30.00	29.80	99	8	7	15.0	3.75	2.00
	29	NOV. 22, '85 ~ NOV. 23, '85	30.00	29.50	98	5.5	0.5	6.0	5.45	5.00
	30	NOV. 24, '85 ~ NOV. 25, '85	30.00	25.90	86	3.5	0.5	4.0	8.57	7.50
	31	NOV. 20, '85 ~ NOV. 21, '85	30.00	30.00	100	4	1	5.0	7.50	6.00
	32	NOV. 26, '85 ~ NOV. 28, '85	30.00	28.20	94	4	2	6.0	7.50	5.00
	33	NOV. 24, '85 ~ NOV. 26, '85	30.00	29.70	99	4.5	0.5	5.0	6.67	6.00
	34	NOV. 22, '85 ~ NOV. 23, '85	30.00	30.00	100	5	0.5	5.5	6.00	5.45
	35	NOV. 28, '85 ~ NOV. 30, '85	30.00	27.90	93	4	1	5.0	7.50	6.00
	36	NOV. 26, '85 ~ NOV. 28, '85	30.00	27.75	93	4	1	5.0	7.50	6.00
	37	NOV. 29, '85 ~ NOV. 30, '85	30.00	26.30	88	4	2	6.0	7.50	5.00
	38	DEC. 2, '85 ~ DEC. 4, '85	30.00	24.60	82	5	2	7.0	6.00	4.29
	39	DEC. 1, '85 ~ DEC. 2, '85	30.00	27.45	92	4	2	6.0	7.50	5.00
	40	NOV. 30, '85 ~ DEC. 2, '85	30.00	26.90	90	4	2	6.0	7.50	5.00
	41	FEB. 10, '86 ~ FEB. 14, '86	30.00	30.00	100	7	1	8.0	4.29	3.75
	42	JAN. 27, '86 ~ JAN. 30, '86	50.00	50.00	100	9	1	10.0	5.56	5.00
	43	JAN. 21, '86 ~ JAN. 29, '86	30.00	30.00	100	5	6	11.0	6.00	2.73
	44	JAN. 30, '86 ~ FEB. 3, '86	50.00	50.00	100	12	3	15.0	2.50	2.00
	45	JAN. 31, '86 ~ FEB. 2, '86	30.00	30.00	100	6	1	7.0	5.00	4.29
	46	FEB. 4, '86 ~ FEB. 6, '86	40.00	39.45	99	7	1	8.0	4.29	3.75
	47	FEB. 3, '86 ~ FEB. 5, '86	30.00	30.00	100	6	1	7.0	5.00	4.29
	48	FEB. 7, '86 ~ FEB. 8, '86	30.00	29.50	98	5	1	6.0	6.00	5.00
	49	FEB. 11, '86 ~ FEB. 14, '86	30.00	30.00	100	5	1	6.0	6.00	5.00
	50	FEB. 6, '86 ~ FEB. 9, '86	50.00	49.80	100	10	1	11.0	3.00	2.73
	51	FEB. 9, '86 ~ FEB. 10, '86	30.00	29.80	99	5	1	6.0	6.00	5.00
	Sub total	NOV. 8, '85 ~ DEC. 2, '85 JAN. 21, '86 ~ FEB. 14, '86	850.00	822.55	96.8	151	48	199.0	5.63	4.27
Grand total		NOV. 8, '85 ~ FEB. 14, '86	1600.00	1564.95	97.8	273.5	106.5	380.0	5.85	4.21

* Drilled per one shift covering net drilling operations.

** Drilled per one shift covering works conducted.

CHAPTER 3 GEOLOGY AND MINERALIZATION OF DRILLING

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3–1 Setting of the Survey Sites

(1) Area A_1

Area A_1 is located about 10 km northwest of the town of Omkoi, the Pha Pun Dong mine is situated about 500 m to its west. A motorable road leading to this mine was extended to the survey sites to raise work efficiency. The distance from Omkoi to this area is about 23 km, which is an hour's trip by car.

In this area a high tungsten anomaly area was picked out as the result of the geochemical prospecting in the preceding phase, and the occurrence of mineralized veins similar to those of the Pha Pun Dong mine was expected.

In and around this area Mesozoic (Triassic) biotite granite and muscovite-biotite granite are broadly distributed, and there are old small-scale workings in the northern extremity of the area.

In the light of the facts that the mineralized veins at the Pha Pun Dong mine lie in the NW–SE direction and that those at the Phan Pun mine, located to the north of the Pha Pun Dong mine, run in the ENE–WSW direction, to effectively pick out mineralized veins in those directions, combinations of drilling and trenching sites were arranged on lines in the N–S and NE–SW directions (Fig. 2).

(2) Area A_2

Area A_2, situated about 1 km south of Area A_1, is a high tin anomaly area picked out as the result of the geochemical prospecting of the Phase II survey.

Since this anomaly area is distributed in the NW–SE direction in a belt form and this direction coincides with that of main mineralized veins in the survey area, the existence of a tin-mineralized veins was expected.

Muscovite-biotite granite is widely distributed over this area, and there are old workings of secondary tin deposit in the area.

Combined drilling and trenching sites were set on lines in the NE–SW direction crossing the anomaly area at right angles (Fig. 2).

(3) Area B_1

Area B_1 is located about 14 km north of Omkoi, and there is the Yong Ku mine about 1 km to its southeast.

The area is the high niobium and tantalum anomaly area picked out as the result of the Phase II survey, and the occurrence of niobium and tantalum-rich pegmatite veins were inferred.

In and around this area Precambrian fine- to coarse-grained paragneiss, quartz schist, pelitic schist, quartzite, and calc-silicate rock are distributed, trending in the NW–SE direction.

By combining drilling and trenching in an efficient manner, drilling and trenching sites were arranged on lines in the NE–SW direction crossing the general geological structure at right angles (Fig. 3).

(4) Area B_2

Area B_2 is situated about 500 m south of Area B_1, and there is the Yong Ku mine about 1 km to its east.

A motorable road comes to this mine, and an about 2 km-long road was made from this road to the area. The distance from Omkoi to this area is 23 km and it takes one hour by car.

This is the tin and tungsten anomaly area picked out as the result of the Phase II survey; this anomaly area is distributed in a belt form extending in the NW–SE direction. Since the mineralized veins of the Yong Ku mine lie in the NW–SE direction and this area is located northwest of the mine, the occurrence of mineralized veins similar to those of the Yong Ku mine was expected.

The drilling and trenching sites were set on lines in the NE–SW direction which crossed the direction of the extension of the anomaly area at right angles (Fig. 3).

3–2 Area A_1

Drill Hole MJT–1: drilled length 30 m

This hole is located in the north of the anomaly area, and there is an old working to the north of this hole.

The rock forming this hole is coarse-grained, light gray biotite granite which shows slight foliation partly. It contains a small quantity of muscovite generally, though the quantity varies. Between the depths 19.20 m and 29.60 m dark gray, medium-grained massive quartz diorite occurs in the granite. At the depth of 25.35 m a thin (2 cm) pegmatite vein is intruded. In the interval from 10.00 m to 12.00 m white clay alteration is recognized. The result of chemical analysis was: 41 ppm of W in the topsoil from 0.00 to 0.50 m depth, and in the biotite granite part, 8 to 14 ppm of W from 4.80 to 18.90 m depth, 22 ppm of W from 27.60 to 28.10 m depth, and 4 ppm of W at the hole bottom. The highest value was found in the topsoil. In the interval from 5.00 to 15.00 m green-fluorescence-colored fine-grained minerals are sporadically recognized with ultraviolet light.

Drill Hole MJT–2: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite and pegma-

tite veins and quartz veins intruded in it. The altered pegmatite, changed into brown clayey soil at the top, become clear at 1.45 m depth and continues up to 5.50 m depth. It contains biotite and muscovite. In addition, thin pegmatite veins are found at the depth of 13.75 m, 14.00 m, 20.00 m, 22.50 m and 28.70 m; and a quartz vein is seen at 7.90 m depth. The result of analysis was: 62 ppm of W in the topsoil from 0.00 to 0.50 m depth, 24 to 55 ppm of W from 1.50 to 5.50 m depth in a part of the muscovite-biotite pegmatite, and 3 ppm of W at the hole bottom; 9 ppm of W at 7.90 m depth in the quartz vein, 6 ppm of W from 13.60 to 14.30 m depth in a part of the pegmatite. The value of 0.19% of WO_3 in the extent from 5.50 to 6.00 m depth in muscovite-biotite granite was the highest in this hole.

Drill Hole MJT–3: drilled length 30 m

The rock forming this hole is coarse-grained muscovite-biotite granite. At the depth of 4.60 m and 12.80 m tourmaline is densely concentrated in a banded form. At the depth of 5.40 m, 17.20 m, 20.25 m, 25.45 m and 27.60 m, pegmatite veins, 2 to 20 cm wide, are found. The result of analysis was: 130 ppm of W in the topsoil from 0.00 to 0.50 m depth, 78 ppm of W at 12.80 m depth where tourmaline is densely concentrated; in the parts of pegmatite, from 20.10 to 20.60 m depth, 25.30 to 25.80 m depth, and 27.60 to 28.00 m depth, W content was 3 ppm, 4 ppm and 4 ppm respectively; in the parts of muscovite-biotite granite, from 12.50 to 13.00 m depth and at the hole bottom, W content was 78 ppm and 4 ppm respectively. The highest value in this hole was found in the topsoil.

Drill Hole MJT–4: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite, with fine- to medium-grained muscovite granite interlaid at the depth of 16.60 and 21.10 m. From the depth of about 15.00 m onward the quantity of muscovite increases. In the extents of 10.70 to 12.55 m depth and 15.80 to 18.40 m depth tourmaline develops in the form of several thin veins, and in the extent of 6.15 to 6.30 m depth a tourmaline-containing pegmatite vein is recognized. In the extent from 19.00 to 22.00 m depth there is weak schistosity. The result of analysis was: 75 ppm of W in the topsoil from 0.00 to 0.50 m depth, 37 ppm of W in the tourmaline-containing pegmatite, 55 ppm of W from 18.30 to 18.80 m depth which is a thin vein of tourmaline, 850 ppm of W from 21.00 to 21.50 m which is a part of the muscovite-biotite granite, and 5 ppm of W at the hole bottom. The highest value in this hole was found in the part of muscovite-biotite granite.

Drill Hole MJT–5: drilled length 30 m.

The rock forming this hole is coarse-grained, brownish gray muscovite-biotite granite, which has been remarkably weathered in the extent from 1.00 to about 8.00 m depth. It has intrusion

of a pegmatite vein at 14.60 m depth and of aplite veins at the depth of 27.05 m and 29.20 m. The result of analysis was: 120 ppm of W in the topsoil from 0.00 to 0.50 m depth, 14 ppm of W at the pegmatite vein, 5 ppm of W at the aplite, and 7 ppm of W at the hole bottom which is muscovite-biotite granite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–6: drilled length 30 m

The rock forming this hole is light gray muscovite-biotite granite. Over the whole length it undergoes a remarkable argillization because it has been affected by a low-temperature quartz vein which runs south of Drill Hole MJT–7. At 12.50 m depth medium-grained muscovite granite is interlaid. In the extent from 6.70 to 8.35 m depth a quartz vein is intruded. The result of analysis was: 72 ppm of W in the topsoil from 0.00 to 0.50 m depth, 42 ppm of W at the boundary between muscovite-biotite granite and quartz vein, 35 ppm of W in muscovite granite, 21 ppm and 32 ppm of W at the bundary between muscovite-biotite granite and muscovite granite, and 5 ppm of W at the hole bottom which is muscovite-biotite granite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–7: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. Affected by the low-temperature quartz vein same as the case of Hole MJT–6, it has been affected by argillization or silicification up to the hole bottom. The result of analysis was: 44 ppm of W in the topsoil from 0.00 to 0.50 m depth, 15 ppm of W from 9.80 to 10.00 m depth and 29 ppm of W from 25.50 to 27.00 m depth in the silicified parts. The highest value in this hole was found in the topsoil.

Drill Hole MJT–8: up to 30 m depth.

The rock forming this hole is coarse-grained biotite granite, which present generally homogeneous lithofacies though there is densely concentrated biotite at places. At the depth of 12.35 m, 12.50 m, 16.30 m, 22.50 m, 27.60 m and 27.85 m feldspar-quartz pegmatite veins are intruded; their width ranges from 2 to 20 cm, and some of them contain scarcely muscovite or biotite. The result of analysis was 83 ppm of W in the topsoil from 0.00 to 0.50 m depth, and W content ranging from 3 to 15 ppm was found from the feldspar-quartz pegmatite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–9: drilled length 30 m.

The rock forming this hole is coarse-grained biotite granite, which is a almost the same rock as that of Hole MJT–8, though a little more content of biotite is found here. At the depth of 4.50 m, 10.50 m, 18.55 m, 18.90 m, 19.70 m, 23.40 m and 24.60 m thin pegmatite veins are intruded. The result of analysis was: 27 ppm of W in the topsoil from 0.00 to 0.50 m depth,

7 ppm of W from 4.50 to 5.10 m depth, and 7 ppm of W from 24.60 to 25.20 m depth in the pegmatite, from 4 to 9 ppm of W in the biotite granite. The highest value in this hole was found at the topsoil.

Drill Hole MJT–10: drilled length 30 m.

The rock forming this hole is coarse-grained biotite granite, except for medium- to coarse-grained muscovite-biotite granite appearing in the extents of 850 to 9.50 m depth and 16.60 to 17.70 m depth. The result of analysis was: 110 ppm of W in the topsoil from 0.00 to 0.50 m depth, 21 ppm of W in the extent from 16.10 to 16.60 m depth and 4 ppm of W from 17.70 to 18.10 m depth which are the boundary between the muscovite-biotite granite and biotite granite, 16 ppm of W in the muscovite-biotite granite and 7 ppm of W at the hole bottom which is biotite granite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–11: drilled length 30 m.

The rock forming this hole is coarse-grained biotite granite, which is very loosened because of extreme weathering in the extent from 0.70 to 8.00 m depth. Quartz vein are intruded at the depth of 5.05 m, 5.45 m and 7.65 m, and pegmatite veins are intruded at the depth of 12.05 m and 13.50 m. At 13.50 m depth a small quantity of sulfide is recognized; this is presumed to accompany low-temperature quartz vein. The result of analysis was: 33 ppm of W in the topsoil from 0.00 to 0.50 m depth, in quartz veins, 5 ppm of W from 5.00 to 5.70 m depth and 7 ppm of W from 7.60 to 8.00 m depth, and 8 ppm of W in biotite granite at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–12: drilled length 30 m.

The rock forming this hole is coarse-grained muscovite-biotite granite, which has been generally altered into clay and partly silicified. A small quantity of sulfide is recognized about 22.40 m depth. The result of analysis was: 31 ppm of W in the topsoil from 0.00 to 0.50 m depth, 32 ppm of W in silicified part from 22.20 to 22.80 m depth, and 12 ppm of W in muscovite-biotite granite at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–13: drilled length 30 m.

The rock forming this hole is coarse-grained muscovite-biotite granite, at the lower part of hole it shows porphyritic texture. Pegmatite veins are intruded at the depth of 1.60 m, 4.25 m, 21.35 m, 28.55 m, 29.20 m and 29.60 m, and an aplite vein is intruded at 24.70 m depth. The result of analysis was: 89 ppm of W in the topsoil from 0.00 to 0.50 m depth, 12 ppm of W from 3.80 to 4.30 m depth and 6 ppm of W at a 21.35 m depth in pegmatite parts, 6 ppm of W in aplite vein at a 24.70 m depth, 9 ppm of W in biotite granite from 4.30 to 4.70 m depth, and 5 ppm of W in muscovite-biotite granite and pegmatite at the hole bottom.

The highest value in this hole was found in the topsoil.

3–3 Area A_2

Drill Hole MJT–14: drilled length 30 m.

The rock forming this hole is coarse-grained muscovite-biotite granite, which becomes medium-grained at the lower portion. Foliation is recognized over the whole length. The extent from 7.00 to 10.00 m depth has been largely affected by argillization. At the depth of 14.60 m, 15,00 m, 16.55 m, 20.80 m, 23.30 m, 23.85 m, 24.40 m, 26.40 m, and 30.00 m thin pegmatite veins are intruded. The result of analysis was: 66 ppm of Sn in the topsoil from 0.00 m to 0.50 m depth, 38 ppm of Sn from 14.20 to 15.30 m depth, 48 ppm of Sn from 20.70 to 21.20 m depth, 56 ppm of Sn from 23.20 to 24.80 m depth, and 72 ppm of Sn at the hole bottom which is pegmatite. The highest value in this hole was found at the hole bottom.

Drill Hole MJT–15: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. At the depth of 4.50 m, 4.60 m, 4.70 m, 7.30 m, 10.60 m, 20.60 m, 22.40 m, 26.10 m, 26.70 m and 27.30 m pegmatite veins, 2 to 10 cm in width, are intruded. In the extent of 12.00 to 17.00 m depth white clay alteration is recognized. In the extent from 16.00 to 18.00 depth chloritization is found. In the extent of 16.30 to 16.80 m depth the dissemination of pyrite is observed. The result of analysis was: 160 ppm of Sn in the topsoil from 0.00 to 0.50 m depth, 100 ppm of Sn in pegmatite from 4.50 to 4.80 m depth, 140 ppm of Sn in argillized part from 13.50 to 14.50 m depth, 250 ppm of Sn in chroritized part from 16.00 to 16.80 m depth, 34 ppm and 31 ppm of Sn respectively at the depth of 20.60 m and 26.00 m which are parts of pegmatite, and 16 ppm of Sn at the hole bottom. The highest value in this hole was found in the chloritized part.

Drill Hole MJT–16: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. At the depth of 12.20 m, 14.00 m, 14.70 m, 19.90 m, 21.40 m and 25.30 m, pegmatite veins are intruded. The result of analysis was: 42 ppm of Sn in the topsoil from 0.00 to 0.50 m depth, 44 to 210 ppm of Sn in the pegmatite veins, 61 ppm of Sn in the muscovite-biotite granite, and 78 ppm of Sn at the hole bottom. The highest value in this hole was found in the extent from 25.20 to 25.70 m which is formed of pegmatite.

Drill Hole MJT–17: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. At the depth of 2.55 m, 11.10 m, 14.30 m, 17.80 m, 18.00 m, 23.00 m, 23.95 m, 25.35 m and 28.00 m, pegmatite veins are intruded. The result of analysis was: 120 ppm of Sn in the topsoil from 0.00

to 0.50 m depth, 12 to 22 ppm of Sn in the pegmatite, and 15 ppm of Sn at the hole bottom which is muscovite-biotite granite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–18: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. At the depth of 11.40 m, 15.45 m, 23.00 m, 27.40 m, and 29.75 m pegmatite veins are intruded, and at a 21.00 m depth a quartz vein is intruded. The result of analysis was: 94 ppm of Sn in the topsoil from 0.00 to 0.50 m, 53 to 110 ppm of Sn in the pegmatite, 70 ppm of Sn in the muscovite-biotite granite, and 53 ppm of Sn in the quartz vein. The highest value in this hole was found in the pegmatite vein at the hole bottom.

Drill Hole MJT–19: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. At the depth of 8.60 m, 9.90 m, 13.35 m, 13.50 m, 13.90 m, 14.20 m, 20.30 m, 22.80 m, 24.70 m, and 28.40 m pegmatite veins are intruded. The result of analysis was: 73 ppm of Sn in the topsoil from 0.00 to 0.50 m depth, 37 to 56 ppm of Sn in the pegmatite, and 27 ppm of Sn at the hole bottom which is muscovite-biotite granite.

The highest value in this hole was found in the topsoil.

Drill Hole MJT–20: drilled length 30 m.

The rock forming this hole is coarse-grained, light gray muscovite-biotite granite. This rock shows distinct foliation in which biotite is generally disposed in a banded form. At the depth of 4.20 m, 4.85 m, 6.40 m, 14.50 m, 21.60 m, and 21.80 m pegmatite veins are intruded. The result of analysis was: 85 ppm of Sn in the topsoil from 0.00 to 0.50 m depth, 39 to 41 ppm of Sn in the pegmatite, and 73 ppm of Sn at the hole bottom which is muscovite-biotite granite. The highest value in this hole was found in the topsoil.

3–4 Area B_1

Drill Hole MJT–21: drilled length 30 m.

The rock forming this hole is quartz schist and pegmatite. The latter has been completely altered and the texture of the original rock rarely remains. The quartz schist is mainly formed of coarse-grained quartz, containing small quantities of biotite and muscovite. It is light gray and has fine schistosity. The result of analysis was: 41 ppm of Nb and 16 ppm of Ta in the topsoil from 0.00 to 0.50 m depth, and 9 to 72 ppm of Nb and 1 to 18 ppm of Ta in the altered pegmatite. The highest value in this hole was found in the extent from 16.60 to 17.00 m depth.

Drill Hole MJT–22: drilled length 30 m.

The rock forming this hole is pegmatite and quartz schist. The pegmatite has been complete-

ly altered and looks white, but it turns light-green at the part deeper than 21.90 m depth; the part deeper than 25.00 m depth is formed of quartz schist. The result of analysis was: 41 ppm of Nb and 21 ppm of Ta in the topsoil from 0.00 to 0.50 m depth, 6 to 54 ppm of Nb and 1 to 30 ppm of Ta in the altered pegmatite, and 15 ppm of Nb and 2 ppm of Ta at the hole bottom which is quartz schist. The highest values of both Nb and Ta in this hole were found in the topsoil.

Drill Hole MJT–23: drilled length 30 m.

The rock forming this hole is pegmatite, with quartz schist being interlaid in the extent from 11.80 to 19.60 m depth. The pegmatite has been altered into white clay, but turns light-green at the part deeper than 19.60 m depth. The result of analysis was: 24 ppm of Nb and 8 ppm of Ta in the topsoil from 0.00 to 0.50 m depth, and 6 to 47 ppm of Nb and 2 to 40 ppm of Ta in the altered pegmatite. The highest values of both Nb and Ta in this hole were found in the extent from 9.80 to 10.00 m depth in the altered pegmatite.

Drill Hole MJT–24: drilled length 30 m.

The rock forming this hole is remarkably altered pegmatite, containing tourmaline and muscovite concentrated densely. The result of analysis was: 70 ppm of Nb and 35 ppm of Ta in the topsoil from 0.00 to 0.50 m depth, and 8 to 22 ppm of Nb and 1 to 14 ppm of Ta in the altered pegmatite. The highest values of both Nb and Ta in this hole were found in the topsoil.

Drill Hole MJT–25: drilled length 30 m.

The rock forming this hole is remarkably altered pegmatite, looking light-green in general. The result of analysis was: 24 ppm of Nb and 8 ppm of Ta in the topsoil from 0.00 to 0.50 m depth, and 4 to 14 ppm of Nb and 1 to 3 ppm of Ta in the altered pegmatite. The highest values of both Nb and Ta in this hole were found in the topsoil.

3–5 Area B_2

Drill Hole MJT–26: drilled length 30 m.

The rock forming this hole is fine-grained biotite paragneiss, which generally has been altered into clay; in some parts it has completely altered into light-yellowish green clay remaining no original texture. At 15.30 m depth the intrusion of a quartz vein is recognized. The result of analysis was: 76 ppm of W in the topsoil from 0.00 to 0.50 m depth, 220 ppm of W in the quartz vein, and 3 to 13 ppm of W in the parts of alteration. The highest value in this hole was found in the quartz vein.

Drill Hole MJT–27: drilled length 30 m.

The rock forming this hole is coarse-grained biotite paragneiss, but is fine-grained at the

upper and lower parts; in some places it has altered into white clay due to kaolinization. At 29.10 m depth a pegmatite vein is intruded. The result of analysis was: 150 ppm of W in the topsoil from 0.00 to 0.50 m depth, 18 to 61 ppm of W in the biotite paragneiss, and 18 ppm of W in the pegmatite. So the highest value in this hole was found in the topsoil.

Drill Hole MJT–28: drilled length 30 m.

The rock in the upper part of this hole consists of dark gray to dark brown biotite paragneiss, and the part lower than 27.10 m depth is biotite-muscovite granite. The parts from 9.70 to 10.50 m depth and 14.90 to 15.40 m depth are light-yellowish green altered rock, the original rock of which is considered to be calc-silicate rock. Thin pegmatite veins are intruded at 12.00 m depth and 16.30 m depth, and an aplite vein at 17.70 m depth. The result of analysis was: 45 ppm of W in the topsoil from 0.00 to 0.50 m depth, 8 to 13 ppm of W in the clac-silicate rock, 10 to 14 ppm of W in the biotite paragneiss, 4 ppm of W in the quartz vein, and 4 ppm of W at the hole bottom which is biotite-muscovite granite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–29: drilled length 30 m.

The rock forming this hole is fine- to coarse-grained, brown to dark gray biotite paragneiss. In the extent from 10.50 to 10.70 m depth a quartz vein is intruded, and in the extent from 11.10 to 11.40 m depth granite is intruded. The extent from 12.60 to 13.60 m depth is formed of calc-silicate rock, but in the extent from 10 to 15 m depth the core was remarkably broken and the rock has been altered, so that the lithology is not altogether clearly known. At the depth of 25.90 m and 26.50 m pegmatite veins are intruded, and quartz veins are intruded at the depth of 10.50 m, 15.20 m and 16.00 m. Alteration is notable in the part deeper than 27 m depth. Under ultraviolet ray scheelite was recognized at 10.70 m depth and its neighborhood.

The result of analysis was: 130 ppm of W in the topsoil from 0.00 to 0.50 m depth, 6.06% of WO_3 at the boundary between a quartz vein and paragneiss from 10.70 to 10.80 m depth, 0.14% of WO_3 in pegmatite from 12.00 to 12.60 m depth, 0.19% of WO_3 from at the boundary between calc-silicate rock and biotite paragneiss 13.60 to 14.00 m depth, 0.13% of WO_3 in calc-silicate rock, and 7 to 260 ppm of W in the other parts. The highest value in this hole was found in the extent from 10.70 to 10.80 m depth.

Drill Hole MJT–30: drilled length 30 m.

The rock forming this hole is brown to dark gray biotite paragneiss, of which the upper half is coarse-grained and the lower half fine-grained. The rock is altered over the whole length, and at the part deeper than 28 m depth it is remarkably altered into light-green soft rock. In the extent from 15.00 to 20.80 m depth medium- to coarse-grained biotite granite is intruded, and at

the depth of 12.70 m and 20.80 m pegmatite veins are intruded. The result of analysis was: 130 ppm of W in the topsoil from 0.00 to 0.50 m depth, 2 to 5 ppm of W in the biotite paragneiss, 4 ppm of W in the pegmatite, and 17 ppm of W in the altered part at the hole bottom. The highest in this hole was found in the topsoil.

Drill Hole MJT–31: drilled length 30 m.

The rock forming this hole is medium- to coarse-grained paragneiss. At the depth of 6.10 m and 16.50 m pegmatite is intruded, and in the extent from 17.70 to 19.00 m depth tourmaline-containing granite is intruded. The result of analysis was: 12 ppm of W in the topsoil from 0.00 to 0.50 m depth, 4 to 7 ppm of W in the pegmatite, 19 ppm of W in the tourmaline-containing granite, and 3 to 28 ppm of W in the biotite paragneiss. The highest value in this hole was found in the biotite paragneiss in the extent from 16.80 to 17.70 m depth.

Drill Hole MJT–32: drilled length 30 m.

The rock forming this hole is coarse-grained, brownish gray biotite paragneiss, which has been altered into clay in the extent from 10.50 to 14.50 m depth. The result of analysis was: 520 ppm of W in the topsoil from 0.00 to 0.50 m depth, and 7 to 15 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–33: drilled length 30 m.

The rock forming this hole is medium- to coarse-grained, dark gray biotite gneiss. The rock has been altered into light-yellowish green clay remaining no origninal texture in the extent from 12.00 to 12.40 m depth, 12.80 to 14.20 m depth, 14.90 to 15.80 m depth, 16.30 to 16.70 m depth, and 20.50 to 20.70 m depth. This altered rock is presumed to have originated from pegmatite because there exist white-altered pegmatites in the extents from 14.00 to 14.90 m depth and 19.00 to 19.10 m depth. The result of analysis was: 45 ppm of W in the topsoil from 0.00 to 0.50 m depth, 1 to 15 ppm of W in the altered rock, 3 to 4 ppm of W in the pegmatite, and 3 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–34: drilled length 30 m.

The rock forming this hole is fine- to coarse-grained dark-gray biotite gneiss. The extent of 10.00 to 10.70 m depth is light-yellowish green altered rock; in the extents from 12.00 to 12.20 m depth, 12.50 to 18.20 m depth, 23.80 to 24.20 m depth, 24.60 to 24.90 m depth, and 29.40 to 30.00 m depth pegmatite is intruded, and there is an intrusion of granite from 25.30 to 27.60 m depth. The result of analysis was: 25 ppm of W in the topsoil from 0.00 to 0.50 m depth, 34 ppm of W in the altered rock, 3 to 5 ppm of W in the pegmatite, and 3 to 24 ppm of W in the biotite paragneiss.

The highest value in this hole was found in the extent from 10.00 to 10.70 m depth in the

altered rock.

Drill Hole MJT–35: drilled length 30 m.

The rock forming this hole is coarse-grained, brown to dark-brown biotite paragneiss. A pegmatite vein is intruded in the extent of 9.70 to 10.00 m depth, and quartz veins at the depth of 20.7 m and 22.50 m. The result of analysis was: 58 ppm of W in the topsoil from 0.00 to 0.50 m, 9 ppm of W in the pegmatite, 22 to 99 ppm of W in the quartz veins, and 5 ppm of W in the biotite paragneiss at the hole bottom.

The highest value in this hole was found in the topsoil.

Drill Hole MJT–36: drilled length 30 m.

The rock forming this hole is coarse-grained, brown to dark-gray biotite paragneiss. Pegmatite veins are intruded at the depth of 17.70 m and 29.00 m, and quartz veins at the depth of 6.60 m and 9.50 m. In the extents from 24.00 to 25.00 m depth and 27.50 to the hole bottom some parts have been extremely altered remaining no gneissic texture.

The result of analysis was: 38 ppm of W in the topsoil from 0.00 to 0.50 m depth, 2 to 3 ppm of W in the pegmatite, 9 to 19 ppm of W in the quartz veins, and 4 ppm of W in the biotite paragneiss at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–37: drilled length 30 m.

The rock forming this hole is medium-grained, brown to brownish gray biotite paragneiss, with fine-grained parts interlaid partially. There is quartzite at 9.30 m depth, altered rock in the extent from 9.60 to 10.50 m depth, and leucocratic granite in the extent from 15.30 to 16.40 m depth. At 24.00 m depth and its neighborhood granitic lithofacies are seen because there is much muscovite. The result of analysis was; 45 ppm of W in the topsoil from 0.00 to 0.50 m depth, 3 ppm of W in the granite, and 3 to 17 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–38: drilled length 30 m.

The rock forming this hole is coarse-grained biotite paragneiss. Granite is intruded in the extents from 3.00 to 3.60 m depth, 15.30 to 17.30 m depth, and 26.90 to 27.50 m depth, and pegmatite veins in the extents of 5.50 to 5.80 m depth and 11.00 to 11.30 m depth. The extent from 11.30 to 12.50 m depth is calc-silicate rock, and the extent from 12.50 to 13.10 m depth is light-yellow altered rock. Under ultraviolet ray scheelite was found in the calc-silicate rock.

The result of analysis was: 37 ppm of W in the topsoil from 0.00 to 0.50 m depth, 1.06% of WO_3 in the calc-silicate rock, 190 ppm of W in the altered rock, and 0.16% of WO_3 to in the biotite paragneiss from 3.60 to 3.80 m depth, and 6 to 110 ppm of W under 13.60 m depth.

The highest value in this hole was found in the calc-silicate rock.

Drill Hole MJT–39: drilled length 30 m.

The rock forming this hole is coarse-grained, brown biotite paragneiss. Pegmatite veins are intruded in the extents from 7.70 to 7.90 m depth and 16.50 to 17.50 m depth, and a quartz vein at 23.50 m depth. The result of analysis was: 40 ppm of W in the topsoil from 0.00 to 0.50 m depth, 17 ppm of W in the pegmatite, and 5 to 19 ppm of W in the biotite paragneiss. The highest value in this hole was found in the extent from 8.10 m to 8.20 m depth which is biotite paragneiss.

Drill Hole MJT–40: drilled length 30 m.

The rock forming this hole is coarse-grained, brown biotite paragneiss. A pegmatite vein is intruded in the extent from 24.20 to 24.60 m depth. The whole length of the hole presents homo-geneous lithofacies with little variance, except for local kaolinization. The result of analysis was: 38 ppm of W in the topsoil from 0.00 to 0.50 m depth, 3 ppm of W in the pegmatite, and 2 to 4 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–41: drilled length 30 m.

The rock forming this hole is medium- to coarse-grained biotite paragneiss. A pegmatite vein is intruded in the extent from 8.30 to 9.30 m depth, and a quartz vein at 27.60 m depth. The extent from 14.00 to 17.00 m has been altered. The result of analysis was: 91 ppm of W in the topsoil from 0.00 to 0.50 m depth, 37 ppm of W in the pegmatite, and 4 to 45 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–42: drilled length 50 m.

The rock forming this rock is biotite paragneiss which is fine-grained but partly medium-grained. The part deeper than 35 m depth is coarse-grained augen gneiss.

Medium- to coarse-grained tourmaline granite is intruded in the extent from 3.80 to 5.50 m depth, and fine- to medium-grained granite in the extent from 25.20 to 28.40 m depth.

A quartz vein is recognized in the extent from 12.75 to 12.90 m depth, a pegmatite vein in the extent from 22.15 to 22.70 m depth, and an aplite vein in the extent from 22.70 to 23.40 m depth. The result of analysis was: 100 ppm of W in the topsoil from 0.00 to 0.50 m depth, 24 ppm of W in the tourmaline granite, 91 ppm of W in the quartz vein, 3 to 23 ppm of W in the biotite paragneiss, and 4 ppm of W in the pegmatite. The highest value in this hole was found in the topsoil.

Drill Hole MJT–43: drilled length 30 m.

The rock forming this hole is fine-grained biotite paragneiss; the rock changes into coarse-grained augen gneiss in the lower part. There is a quartz vein in the extent from 10.60 to 11.85 m

depth, and coarse-grained skarn containing scheelite in the extent from 11.85 to 12.30 m depth. The extent from 8.30 to 8.50 m depth, which is altered rock, has been kaolinized; its original rock is presumed to be calc-silicate rock. Pegmatite veins are intruded in the extent from 13.20 to 13.60 m depth and the extent from 15.25 to 15.85 m depth, and medium-grained granite in the extent from 18.25 to 18.40 m depth and at 25.80 m depth. The result of analysis was: 96 ppm of W in the topsoil from 0.00 to 0.50 m depth, 0.20% of WO_3 in the calc-silicate rock, 32 to 62 ppm in the pegmatite, 0.19% of WO_3 in the skarn, and 16 to 400 ppm of W in the biotite paragneiss. Remarkably high values were found in the calc-silicated rock and skarn.

Drill Hole MJT–44: drilled length 50 m.

In this hole the portion from 2.00 to 8.75 m depth is presumed to be fine-grained quartz schist or calc-silicate rock, but extreme weathering makes clear identification difficult. The extent from 8.75 to 9.10 m depth is biotite schist, and the extent from 9.10 to 16.10 m depth is calc-silicate rock. Biotite pegmatite is intruded in the extent from 16.10 to 17.45 m depth. The part deeper than 17.45 m depth is medium- to coarse-grained biotite paragneiss, in which granite and quartz veins are intruded, with parts looking like quartz schist being interlaid in these at places; the portion deeper than 40 m depth is augen gneiss. The result of analysis was: 48 ppm of W in the topsoil from 0.00 to 0.50 m depth, 7 ppm of W in the calc-silicate rock, 3 to 8 ppm of W in the pegmatite, 20 ppm of W in the skarn, and 24 to 35 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

Drill Hole MJT–45: drilled length 30 m.

The rock forming this hole is fine-grained biotite gneiss, the lower part turning medium- to coarse-grained. Pegmatite and quartz veins are intruded in the extents from 1.00 to 1.75 m depth and 11.80 to 12.00 m depth, at 20.90 m depth, in the extent from 21.20 to 21.85 m depth, and at 29.30 m depth. The result of analysis was: 110 ppm of W in the topsoil from 0.00 to 0.50 m depth, 12 to 68 ppm of W in the pegmatite, and 7 ppm of W in the quartz vein at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–46: drilled length 40 m.

The rock forming this hole is fine-grained biotite paragneiss; the development of fine schistosity makes it look like schist; the lower part is coarse-grained. Pegmatite veins are intruded in the extents from 1.90 to 2.65 m depth, 6.35 to 6.80 m depth, 7.35 to 7.70 m depth, 8.20 to 9.45 m depth, 10.10 to 10.90 m depth, 11.30 to 11.50 m depth, 13.80 to 14.50 m depth, 21.30 to 21.55 m depth, 23.80 to 24.45 m depth, at a 31.45 m depth, in the extents from 36.55 to 36.90 m depth and 38.00 to 38.75 m depth; and medium- to coarse-grained muscovite granite is intruded in the extent from 9.45 to 10.10 m depth. The result of analysis was: 57 ppm of W in

the topsoil from 0.00 to 0.50 m depth, 6 to 59 ppm of W in the pegmatite, 8 ppm of W in the muscovite granite, and 26 ppm of W in the biotite paragneiss at the hole bottom. The highest value in this hole was found in the extent from 11.30 to 11.55 m depth which is pegmatite.

Drill Hole MJT–47: drilled length 30 m.

The rock forming this hole is biotite paragneiss which is fine-grained in the upper part and coarse-grained in the lower part. Pegmatite veins are intruded in the extents from 3.15 to 3.65 m depth, 4.25 to 5.60 m depth, at 6.00 m depth, in the extents from 10.55 to 11.00 m depth, 14.50 to 15.30 m depth, and at 16.80 m depth, and biotite granite at the hole bottom. The result of analysis was: 670 ppm of W in the topsoil from 0.00 to 0.50 m depth, 4 to 81 ppm of W in the pegmatite, and 6 ppm of W in the biotite granite at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–48: drilled length 30 m.

The rock forming this hole is biotite paragneiss, which is fine-grained in the upper part and coarse-grained in the lower part. Pegmatite and quartz veins are intruded at the depth of 2.55 m, 7.40 m, 8.40 m, 10.45 m, and 29.00 m, and muscovite-biotite granite in the extents from 11.70 to 12.20 m depth and 16.15 to 16.85 m depth, and at the depth of 19.40 m and 29.80 m. The result of analysis was: 620 ppm of W in the topsoil from 0.00 to 0.50 m depth, 4 ppm of W in the pegmatite, 9 to 20 ppm of W in the quartz veins, and 5 ppm of W in the muscovite-biotite granite at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–49: drilled length 30 m.

The rock forming this hole mainly consists of biotite paragneiss, but partly the extents from 7.90 to 10.00 m depth, 12.60 to 14.70 m depth, and 16.25 to 20.65 m depth consists of medium-grained granite. Pegmatite veins are intruded in the extents from 3.30 to 3.70 m depth and 10.00 to 10.26 m depth. The result of analysis was: 27 ppm of W in the topsoil from 0.00 to 0.50 m depth, 12 ppm of W in the pegmatite, 4 ppm of W in the granite, and 4 ppm of W in the biotite paragneiss at the hole bottom. The highest value in this hole was found in the topsoil.

Drill Hole MJT–50: drilled length 50 m.

The rock forming this hole is fine- to medium-grained biotite schist in the upper part and biotite paragneiss in the lower part. Pegmatite and quartz veins are intruded in the extents from 1.80 to 2.20 m depth and 11.10 to 11.35 m depth, at 18.65 m depth, in the extents from 20.20 to 22.00 m depth, 24.20 to 25.60 m depth, 29.10 to 31.30 m depth, 33.90 ~ 35.20 m depth and 37.50 ~ 37.90 m depth. The extent from 32.40 ~ 33.05 m depth is calc-silicate rock. There is medium- to coarse-grained granite in the extent from 35.25 to 47.30 m depth. From 47.30 m depth to the hole bottom there is coarse-grained biotite paragneiss with augen texture. The

result of analysis was: 40 ppm of W in the topsoil from 0.00 to 0.50 m depth, 14 ppm of W in the quartz vein, 4 ppm of W in the calc-silicate rock, and 3 to 5 ppm of W in the biotite paragneiss. The highest value in this hole was found in the topsoil.

The rock forming this hole is fine-grained biotite paragneiss in the upper part and medium- to coarse-grained one in the lower part. A quartz vein is intruded at a 5.00 m depth, pegmatite veins at the depth of 9.40 m, 9.70 m and 22.80 m, and muscovite-biotite granite in the extent from 5.15 to 7.10 m depth. The result of analysis was: 75 ppm of W in the topsoil from 0.00 to 0.50 m depth, 5 ppm of W in the quartz vein, and 4 ppm of W in the biotite paragneiss at the hole bottom. The highest value in this hole was found in the topsoil.

CHAPTER 4 GEOLOGY AND MINERALIZATION OF TRENCH

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4–1 Area A_1

Regarding the soil profile, horizon A is scarcely observed in all the trenches, and the thickness of horizon B is in the range of 0 to 50 cm. The lower part gradually changes to the extremely weathered bedrock, so that the boundary between horizons B and C, boundary between horizon C and bedrock are not distinct. Therefore the gradual change to the bedrock is seen starting with the depth of 1 m.

(1) Trench A_1–1

This is a trench with a length of 50 m in the north-south direction. There is an old workings on the north side and Drill Hole MJT–1 on the south side.

This trench consists of coarse-grained muscovite-biotite granite with pegmatite veins, quartz veins and granitic dikes. The veins concentrate on the northern half, their width is in the range of 2 to 30 cm, being less than 10 cm in almost all cases.

Their strike is NW–SE and E–W and the dip is 30 to 40°S in many cases.

Granitic dikes are found in two places: in the middle and north of the trench. The former dike is medium- to coarse-grained muscovite-biotite granite with a width of 1 m, accompanied by thin quartz veins in the hanging wall and foot wall. The latter rock is two parallel veins of medium-grained muscovite granite with a width of 20 to 30 cm, accompanied by thin veins of muscovite pegmatite in the hanging wall and foot wall.

As a result of analysis of the representative quartz veins, pegmatite veins, and granitic dikes to make examination for the existence of mineral indications, the values of tungsten content were found as follows: 150 ppm of W in a tourmaline quartz vein, 240 ppm of W in the muscovite granite, and 340 ppm of W in a tourmaline quartz vein along the foot wall of this granite.

In the country rock the content was 9 ppm and 19 ppm, and in the top layer it was 16 ppm, all being low values.

(2) Trenches A_1–2 and A_1–3

These are 10 m-long trenches in the N–S direction, located about 100 m south of Trench A_1–1. Trench A_1–2 encountered hard bedrock at a depth of 1.5 m because it is near the valley.

The geology in both the trenches is formed of coarse-grained biotite granite. A few thin tourmaline veins were recognized in Trench A_1–2, and a thin vein of quartz-feldspar pegmatite was seen at the southern end of Trench A_1–3.

As the result of analysis, the weathered bedrock including thin tourmaline veins in Trench

A_1–2 was found to contain 0.28% of WO_3.

(3) Trench A_1–4

Trench A_1–4, located about 25 m south of Trench A_1–3, is 100 m long in the N–S direction, lying parallel with the three drill holes of MJT–3, 4 and 5.

The geology is formed of biotite granite with muscovite pegmatite and quartz veins, normally 1 to 5 cm wide but at times 10 to 20 cm wide, developing in large numbers; in addition aplite veins, 10 to 30 cm wide, and tourmaline veins, 1 to 2 cm wide, are found. Most of these veins have strike of NW–SE or E–W and dip of 30 to 50°S.

As the result of analysis the values of tungsten content were found as follows: 240 ppm of W in the granite including a few thin tourmaline veins in the middle of the trench, 0.23% of WO_3 in a thin tourmaline vein in the north, and 360 ppm of W in a thin quartz vein at the northern end. In the topsoil at the southern extremity 270 ppm of W was found.

(4) Trench A_1–5

Trench A_1–5 is situated about 50 m on the southern extension of Trench A_1–4 and lie parallel with the two drill holes of MJT–6 and 7.

The geology consists of coarse-grained muscovite-biotite granite; pegmatite veins are intruded into the southern end, the middle and the north, particularly being concentrated on the north.

Alteration is seen all over, and white argillization is remarkable; also there are silicified veins. The geology here has been affected by a low-temperature quartz vein with a width of a few meters running in a strike of NE–SW close by this trench on its south side.

The intruded veins are in a strike of E–W or NW–SE, partly NE–SW; their dip is in the range of 30 to 80° toward south mostly, but at times north.

As the result of analysis, it was found that a thin tourmaline vein in the north has 82 ppm of Sn and 100 ppm of W.

(5) Trench A_1–6

This trench lies midway between Trench A_1–1 and Trench A_1–10. Originally the survey team had planned a 100 m -long trench, but since it was to cross an old working, excavation was made by dividing it into three: the north, the middle and the south; they lie on the extension lines of mineralized veins found in the old working.

The geology consists of coarse-grained biotite granite with the intrusion of large numbers of quartz veins and pegmatite veins from the middle to the north.

The predominant strike of these veins is E–W; the dip, toward south in almost all cases, is in the range of 40 to 80°.

As the result of analysis, it was found that a muscovite pegmatite vein of the middle

contains 0.81% of WO_3, a tourmaline quartz veins of the north 0.33% and 0.29% of WO_3.

(6) Trench A_1–7

Trench A_1–7 is a 50 m-long trench cut in the direction of NE to the east of Trench MJT–3.

The geology is formed of coarse-grained biotite granite, with pegmatite veins and quartz veins concentrated on the northern half; all of them have a width ranging from 1 to 10 cm, and their predominant strike and dip are NW–SE and 30 to 40° respectively.

As the result of analysis, at the middle of the trench the country rock in the north where thin tourmaline veins are concentrated has 400 ppm of W and an aplite vein in the north 1.4% of WO_3.

(7) Trench A_1–8

This is a 125 m-long trench cut in the NE direction, with Drill Hole MJT–5 at its southern extremity and Drill Hole MJT–11 at the northern extremity. The northern half of the trench could not be excavated enough because of shallow-seated bedrock.

The geology consists of coarse-grained biotite granite, and on the south of the trench concentrated are pegmatite veins and quartz veins that are intruded into the granite. In most cases the width of the veins ranges from 1 to 10 cm, the strike being NW–SE and the dip 50 to 60°.

As the result of analysis, the value of 0.10% of WO_3 was obtained in a tourmaline quartz vein lying at the southern end of the trench.

(8) Trench A_1–9

This is a 50 m-long trench in the N–E direction with Drill Hole MJT–7 which is located at its southern end.

The geology consists of coarse-grained muscovite-biotite granite, which is interlaid with 2 m-wide muscovite granite, in its north where pegmatite veins and quartz veins are intruded. The granitic rocks has been affected by a low-temperature quartz vein lying on its south, as the case of Trench A_1–5, and subjected to notable alteration which has made the original texture indistinct at some places. The direction of the intruded veins is NW–SE in most of them.

As the result of analysis, it was found that a tourmaline pegmatite vein at the middle of the trench has 0.49% of WO_3 and a muscovite pegmatite vein at its northern end 0.20% of WO_3.

The result of vertical channel sampling with 2 m intervals made on the south side of the trench showed that no sample had high content of W, that the more the depth, the less tends the content in a way.

(9) Trench A_1–10

This is a 50 m-long trench cut in the N–S direction, with Drill Holes MJT–8 and MJT–9

respectively at both ends.

The geology is formed of coarse-grained biotite granite, with pegmatite veins and quartz veins developing all over and in particular concentrating on the south. The predominant strike of them is E–W, followed by the strike of NW–SE. The dip is in the range of 40 to 70° toward south in most cases.

As the result of analysis, the value of 140 ppm of W was found in the topsoil.

(10) Trench A_1-11

This trench, lying to the south of Trench A_1-10, is a 10 m-long trench cut in the NE direction, interposed between Drill Holes MJT–9 and MJT–10.

The geology consists of coarse-grained biotite granite which has the intrusion of a pegmatite vein and a quartz vein in parallel with the granite.

As the result of analysis, the value of 55 ppm of W was found in the topsoil.

(11) Trench A_1-12

This is a 50 m-long trench cut in the N–S direction, lying parallel with Drill Holes MJT–11, 12 and 13.

The geology consists of coarse-grained biotite granite, most of which has been extremely altered, with no texture of the original rock remaining in many parts. Pegmatite veins intruded irregularly are recognized in the south.

As the result of analysis the value of 0.11% of WO_3 was found in granite in the north with thin pegmatite veins.

The result of channel sampling made at 2 m intervals at the middle of the trench showed the values of W content in the range of 30 to 50 ppm, indicating no particular tendency.

(12) Trench A_1-13

This is a 10 m-long trench cut in the N–S direction, lying to the south of Trench A_1-12.

The geology is formed of biotite granite; two gently inclined pegmatite veins are intruded into it, and thin tourmaline veins are recognized at the southern end.

As the result of analysis, high W value was not obtained.

4–2 Area A_2

(1) Trench A_2-1

This is a 50 m-long trench, located in the north of the area, which was cut in combination with Drill Hole MJT–14.

The geology consists of coarse-grained muscovite-biotite granite with the intrusion of thin veins of pegmatite and quartz. Most of these intrusive veins have strikes of NW–SE.

As the result of analysis, the values of tin content were those of the geochemical background in almost all samples. As for tungsten the values were as low as about 10 ppm.

(2) Trench A_2–2

Trench A_2–2, which is 50 m in length, is located at a distance of about 100 m to the southeast of Trench A_2–1.

The geology consists of coarse-grained muscovite-biotite granite presenting lithofacies similar to that of Trench A_2–1, with pegmatite veins of the irregular lens-shape found sporadically.

As the result of analysis, the values of Sn content of 100 ppm and 160 ppm were found in a muscovite pegmatite vein at the south end; the other samples indicated the geochemical background value.

(3) Trench A_2–3

This 50 m-long trench was excavated in combination with Drill Hole MJT–15.

The geology is formed of coarse-grained muscovite-biotite granite with the intrusion of pegmatite of the lenticular or vein form. The veins strike in the direction of NW–SE. The granite presents foliation in some parts.

As the result of analysis, in the country rock in the south of the trench containing thin veins of muscovite pegmatite the values of Sn content ranging from 120 to 150 ppm were produced, but almost all the other samples showed the geochemical background value.

(4) Trench A_2–4

This trench is 70 m in length, with Drill Holes MJT–16 and 18 at both ends. Since the north of this trench was in a small valley, excavation could not be made enough because of hard bedrock appearing at a shallow depth.

The geology consists of coarse-grained muscovite-biotite granite, with several pegmatite veins occurring locally.

As the result of analysis, the values of Sn content of 96 to 110 ppm were found in both the topsoil and bedrock in the north of the trench, and 120 ppm of Sn was obtained from the bedrock at the southern end.

(5) Trench A_2–5

This is a 120 m-long trench, with Drill Holes MJT–19 and 20 positioned at both ends. Since the trench was cut along the ridge and weathered loose rock was thin, excavation could not be made enough.

The geology consists of coarse-grained muscovite-biotite granite, with pegmatite veins developing irregularly.

As the result of analysis, the value of 150 ppm of Sn content was found in a tourmaline

pegmatite vein in the north. The result of channel sampling at 2 m intervals in the south presented the values of 55 to 85 ppm of Sn in the greater part of the samples. No particular differences between channels or according to the depth were recognized.

(6) Trench A_2-6

This 50 m-long trench was excavated in combination with Drill Hole MJT–17.

The geology is formed of coarse-grained muscovite-biotite granite, with schistosity developing partially; pegmatite of the lenticular or vein form is found at places.

As the result of analysis, the value of 230 ppm of Sn was found in a pegmatite vein in the southern half; in addition values ranging from 120 to 190 ppm of Sn were found in the granite and in pegmatite veins.

4–3 Area B_1

There hardly was horizon A in any of the trenches. Horizons B and C change gradually because of remarkable weathering, and their boundaries are indistinct. The boundary between horizon C and the bedrock is distinct in the case of schist, but it is indistinct in the case of pegmatite because of clayey alteration.

(1) Trench B_1-1

Trench B_1-1 is a 50 m-long one excavated in the western extremity of the survey area.

The top layer is colluvial soil containing quartz breccia 1 to 2 cm in diameter and has been turned into reddish brown clayey soil, which gradually changes into pegmatite subjected to strong alteration. The pegmatite is brecciated in the northern half and contains tourmaline.

As the result of analysis, no high Nb or Ta content was practically found in the samples. The result of channel sampling at 2 m intervals gave no distinctive feature.

(2) Trenches B_1-2, B_1-3, B_1-4 and B_1-5

These are located 50 m east of Trench B_1-1, 10 m in length, and arranged alternately with the three drill holes of MJT–21, 22 and 23.

The geology is formed of quartz schist, pelitic schist, pegmatite, and granite, all of which have been completely subjected to weathering and alteration, and the texture of the original rock hardly remains in the cases of the granite and pegmatite.

The schist strikes in the NW–SE direction and dips at 40 to 50°N.

The result of analysis did not produce particularly high content of Nb or Ta.

(3) Trench B_1-6

This is a 100 m-long trench, located 150 m east of trench B_1-2.

The top layer is formed of colluvial soil. Below this layer residual soil deriving from granitic

bedrock grades downward into granite which has no original texture due to extreme weathering and alteration. Tourmaline is densely concentrated at places. Pegmatite veins and quartz veins are irregularly intruded.

As the results of analysis, the value of 150 ppm of Nb was found in the tourmaline-bearing quartz vein in the south of this trench.

In this trench channel sampling at 2 m intervals was conducted. Its result indicated that the contents of Nb and Ta become less, as the depth increases.

(4) Trenches B_1-7, B_1-8, B_1-9

These trenches with 10 m length are located 50 m east of Trench B_1-6 and alternately arranged with two drill holes of MJT–24 and 25.

This geology consists of pegmatite, pelitic schist and quartz schist. Pelitic schist is extremely weathered and shows light yellow color. Quartz schist of lenticular form is interlaid in pelitic schist.

As the result of analysis, the following values were obtained: 31 to 45 ppm of Nb and 9 to 17 ppm of Ta in pegmatite and 13 ppm of Nb, 3 ppm of Ta in schist.

(5) Trench B_1-10

This is a 50 m-long trench, located 50 m east of Trench B_1-8.

The geology is formed of light-gray clayey soil and strongly altered granite.

As the result of analysis, extremely low contents of both Nb and Ta were found.

4–4 Area B_2

(1) Trenches B_2-1, B_2-2, B_2-3 and B_2-4

These are 10 m-long trenches alternately arranged with the three drill holes of MJT–26, 27 and 28 at the western end of the area.

This geology gradually changes from brown clayey soil to biotite paragneiss. This paragneiss presents fine gneissic texture due to parallel arrangements of biotite and is intruded by pegmatite veins.

As the result of analysis, the value of 120 ppm of W was found at the top layer.

(2) Trench B_2-5

This is a 100 m-long trench located 50 m east of Trench B_2-2.

Geology of this trench almost consists of fine-grained paragneiss with interlaying quartz schist. Entirely, gneissic texture striking NW to SE and dipping 50°N is disinct. Along this texture pegmatite veins and quartz veins are interlaid. At the northern end of the trench quartzite and calc-silicate rock are observed.

As the result of analysis, the value of 0.11% of WO_3 was obtained in thin tourmaline-quartz pegmatite veins at the middle of the trench, and the value of 100 ppm of W in calc-silicate rock at the northern end.

As the result of channel sampling with 2 m intervals at the middle of the trench indicated the values of 64 to 100 ppm of W at the top layer. Also it was a tendency that the content became less, as the depth increases.

(3) Trenches B_2-6, B_2-7, B_2-8 and B_2-9

These trenches are located 50 m east of Trench B_2-5. These are 10 m-long each and alternately arranged with the three drill holes of MJT–29, 30 and 31.

The geology changes downward from brown clayey soil to biotite paragneiss. Its gneissic texture is distinct with a strike of NW–SE and a dip of 50°N. The soil is dotted with many breccias of vein quartz. Quartz veins are intruded in paragneiss.

The result of analysis produced no high contents. As the result of channel sampling at 2 m intervals in Trench B_2-7, the values of 78 to 92 ppm of W were detected at the top layer. The values tend to decrease as the depth increases.

(4) Trench B_2-10

This is a 100 m-long trench located 50 m east of Trench B_2-7.

Geology of this trench consists of biotite paragneiss having distinct gneissic texture. The gneissic texture shows a N45°E strike and 40° to 50°N dip. Many quartz veins and pegmatite veins are interlaid along this texture.

Topographically the northern half of the trench is on a saddle. From this part to northward many veins are observed. Some parts of these veins showed bluish fluorescence color under ultraviolet rays. This is due to fine-grained scheelite disseminated in quartz rich calc-silicate rock of 20 cm-wide interlaid along gneissic texture of the paragneiss and in densely concentrated biotite layer in parallel to above vein at hanging and foot sides.

As the result of analysis, the highest value of WO_3 was 1.56% and the value of 110 ppm of Sn was detected. There is also a 5 cm-wide quartz vein for a distance of 5 m on hanging side of it. Scheelite was recognized under ultraviolet rays, and the value of 1.38% WO_3 was found. There is also a 10 cm-wide quartz vein for a distance of 50 cm on the foot side, from where the value of 0.49% of WO_3 was obtained.

(5) Trenches B_2-11, B_2-12, B_2-13 and B_2-14

These trenches, 10 m-long each, are located 50 m east of Trench B_2-10, and arranged alternately with the three drill holes of MJT–32, 33 and 34.

In Trenches B_2-11 and B_2-12, which are on the northern side, brown clayey soil at the

toplayer is thick, and the boundary between it and the bedrock is indistinct.

The geology in all these trenches is formed of biotite paragneiss with distinct gneissic texture; irregular intrusion of pegmatite is recognized.

As the result of analysis, at the top layer of Trench B_2-11 and in the bedrock, the high values of 560 ppm of W and 94 ppm of Sn and also the high values of 650 ppm of W and 120 ppm of Sn were found respectively.

(6) Trench B_2-15

This is a 100 m-long trench located 50 m east of Trench B_2-12.

The geology in the northern half consists of reddish brown clayey soil including quartz breccia, while the geology in the southern half is formed of yellowish brown soil and biotite paragneiss with distinct gneissic texture.

As the result of analysis, tungsten content in the northern was no more than 100 ppm.

(7) Trenches B_2-16, B_2-17 and B_2-18

These trenches 10 m-long each, are located 50 m east of Trench B_2-15, and arranged alternately with the drill holes of MJT–35 and MJT–36.

The geology in all the trenches consists of biotite paragneiss, with quartz veins in a lenticular form or of the thin vein type at places.

As the result of analysis, the value of 170 ppm of W was obtained from Trench B_2-16, but only the geochemical background value was found in the other places.

(8) Trenches B_2-19, B_2-20 and B_2-21

These trenches, 10 m-long each are located 100 m east of Trench B_2-17, and arranged alternately with the drill holes of MJT–37 and MJT–38.

The geology in all the trenches consists of biotite paragneiss with obvious gneissic texture, and pegmatite veins and quartz veins are found at places.

As the result of analysis, almost all the samples showed the geochemical background value. The result of channel sampling at 2 m intervals indicated only 19 to 56 ppm of W and 18 to 41 ppm of Sn, with no mentionable feature.

(9) Trenches B_2-22 and B_2-23

These trenches, 10 m-long each are located 100 m east of Trench B_2-20, with Drill Hole MJT–39 lying between them.

The geology in both the trenches consists of biotite paragneiss with irregular intrusion of pegmatite.

The result of analysis indicated the geochemical background value in all the samples.

(10) Trench B_2-24

This, located 100 m east of Trench B_2-21, is a 50 m-long trench cut in combination with Drill Hole MJT–40.

The geology consists of biotite paragneiss, in which quartz veins and pegmatite veins intruded along its gneissic texture.

The result of analysis indicated only low values of 7 to 19 ppm of W and 11 to 37 ppm of Sn.

(11) Trenches B_2-25 and B_2-26

These trenches, 20 m-long each, are located 50 m west of Trench B_2-1 in the western extremity of the survey area. Drill Hole MJT–41 is situated between them.

The geology consists of the alternation of biotite paragneiss and mica schist. The latter strikes NW and dips 45°N.

As the result of analysis, the value of 100 ppm of W was found from bedrock in Trench B_2-25, but the content was found low in the other samples.

(12) Trench B_2-27

This is a 10 m-long trench situated on the north extension line of Trench B_2-4, to the south of Drill Hole MJT–29.

The geology consists of coarse-grained biotite paragneiss, with quartz veins and pegmatite veins intruded along its gneissic texture. It strikes NW to SE and dips 45°N.

The result of analysis indicated the value of 290 ppm of W.

(13) Trench B_2-28

This is a 10 m-long trench located to the north of Trench B_2-21.

The geology consists of fine-grained biotite paragneiss with quartz schist; pegmatite veins and quartz veins in a lenticular form or of the thin vein form are interlaid in it.

The result of analysis indicated the value of 1.02% of WO_3 at the top layer. This would be accounted for by boulders of skarnized calc-silicate rock containing scheelite which lie on the surface in the surroundings.

CHAPTER 5 COMPREHENSIVE DISCUSSION

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The Phase III survey program provided a number of basic data of the geology and mineralization of the Survey Area. Through compilation of these data, the relations between geological structure, geochemical anomalies and mineralization in the survey areas were studied, and the potentialities of the occurrence of mineral deposits were evaluated.

5–1 Area A_1

The survey in this area was directed to the tungsten geochemical anomaly area that had been picked out as the result of the preceding year's survey. The survey area is divided into the north and the south by a drainage running east.

In the north there are small-scale old workings on the northwest side and southeast side of a small topographic rise.

Here tourmaline quartz veins in biotite granite were exploited. There is one major vein, which has a width of 8 to 10 cm, strikes NW-SE and dips SW; and the same vein seems to have been mined in the two workings. There remains a large amount of waste in the northwest-side working. Presuming from its volume, parallel veins might have existed, but this is not very clear on the surface. The waste came from tourmaline quartz veins, but no ore mineral has been found. Here four holes were drilled in a total length of 120 m, and four trenches totaling 210 m were cut (Fig. 4).

Between the above-mentioned two old workings Trench A_1–6 was cut. Since planned trench fell on a stope, it was actually excavated by dividing it into three: the north, middle, and south. Among them, in Trenches A_1–6 (M) and A_1–6 (N), which cut the strike extension of the mineralized vein that had been mined, a large number of thin pegmatite veins were found, and such mineral indications as 0.81% of WO_3 in Trench A_1–6 (M) and, at three places of Trench A_1–6 (N), 0.33% of WO_3, 0.29% of WO_3, and 280 ppm of W were confirmed. All these mineral indications accompany tourmaline quartz veins or pegmatite veins. Besides, quartz veins and pegmatite veins with the highest value of W content of 110 ppm in Trench A_1–10 and with the values of the same content of 280 ppm and 240 ppm in Trench A_1–1 have been found at places.

On the other hand, the drilling encountered quartz veins and pegmatite veins, but no mineral indication was recognized. The analytical values from the toplayer, 0 to 0.5 m depth, indicated moderate to high anomaly values according to the geochemical anomaly classification, but the values from the bedrock at the hole bottoms were less than the threshold.

From the above-mentioned the results are summarized as follows: In the north, there are

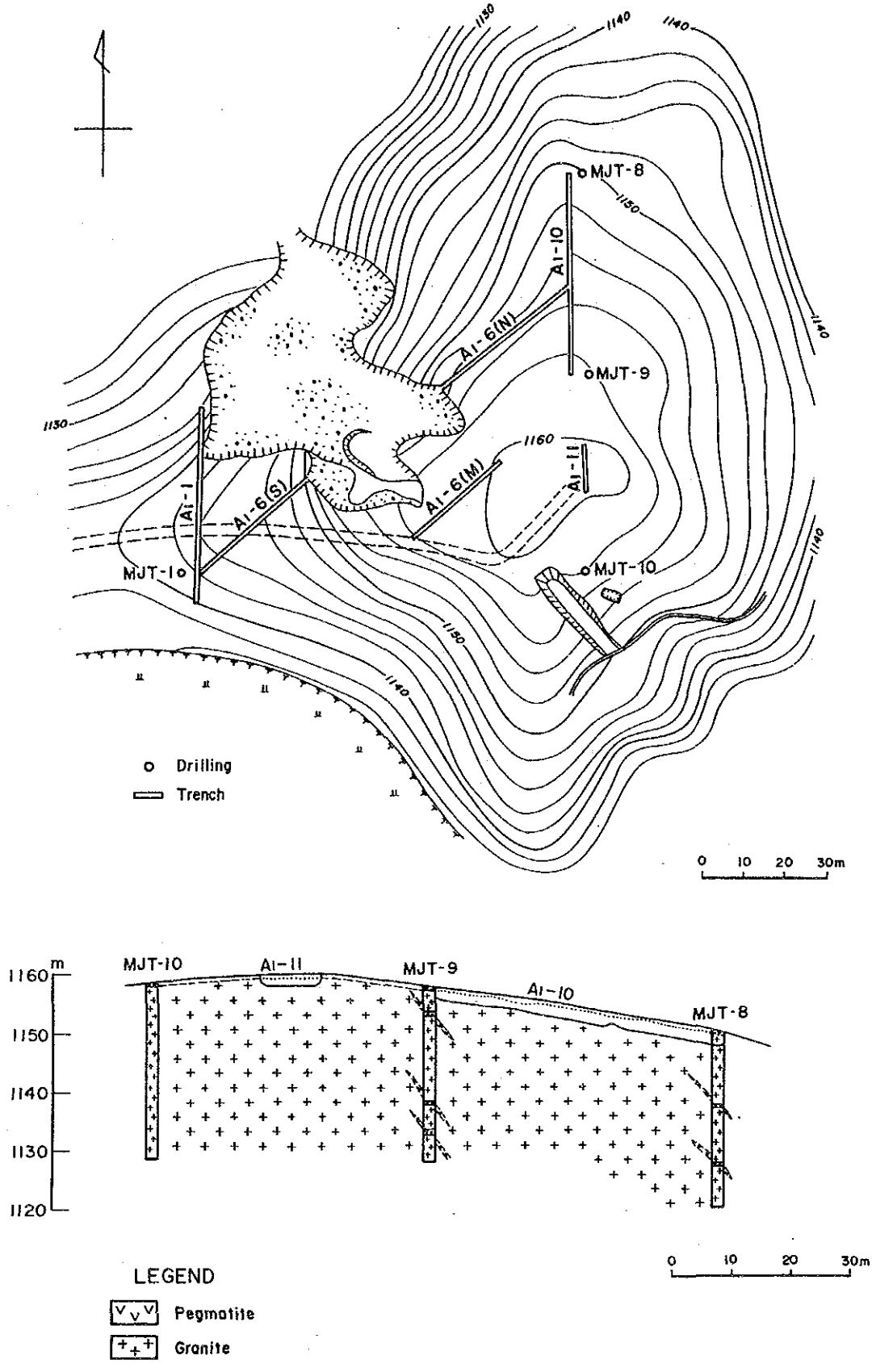

Fig. 4 Geological profile of drilling (MJT–8, 9, 10)

some mineralized veins with a 5 to 10 cm width and NW-SE strike, the grade is as low as 0.2 to 0.3% of WO_3, the veins lack continuity, and they are small-scale mineral indications limited in the scope of occurrence.

In the south nine drill holes with a total length of 270 m were made and nine trenches totaling 460 m were excavated. The highest value found from these was 1.4% of WO_3 in a thin aplite vein in Trench A_1–7. In addition, mineral indications with the values of 0.23% of WO_3 and 0.28% to 0.49% of WO_3 were recognized, but they are scattered widely.

The tungsten contents of channel samples at 2 m intervals in Trench A_1–9 and A_1–12 were on the levels of the moderate to high anomaly values from the geochemical anomaly classification.

A part of Drill Hole MJT–2 indicates 0.19% of WO_3, and a part of Drill Hole MJT–4 indicates 850 ppm of W. But these are not directly related with the mineral indications of these trenches.

The above-mentioned results of the surveys are briefly described as follows: the mineral indications in Area A_1 are tungsten mineralization accompanying thin pegmatite veins intruded in the country rock, but they are scattered and very small.

5–2 Area A_2

The surveys of Area A_2 were made over the tin geochemical anomaly area picked out as the result of the surveys in the proceding phase. Here seven drill holes with a total length of 210 m were made and six trenches totaling 390 m were cut.

The drilling and trenching surveys both revealed muscovite-biotite granite, and pegmatite veins and quartz veins intruded in the granite were found at various places.

Although mineral indications were not confirmed with the naked eye, the highest analytical value of tin content from the trenches was 230 ppm of Sn, and the maximum value from the drill holes was 250 ppm of Sn, with values exceeding 100 ppm of Sn found at places.

An examination for the existence of tin ore by means of panning in each trench revealed that only a small quantity of cassiterite is contained in the surface soil of Trench A_2–4.

Almost all the analysis of samples of topsoil and granite at the hole bottom indicated relatively high values of tin content coming under the moderate to high anomaly levels according to the geochemical anomaly classification.

In terms of local differences in tin contents, higher values were obtained as a whole from the vicinities of Trenches A_2–4, 5 and 6 and Drill Holes MJT–17, 18 and 19 which are situated on

the southeast side of this area; near these sites there are old workings of secondary tin ore deposit.

These secondary deposits are presumed to derive from mineralized veins of pegmatite judging from the facts that a large number of pegmatite veins have developed and that the cassiterite obtained by panning has dark brown color.

Because the granitic rock, the country rock, contains by far higher values of tin content than those in the surrounding rock, the condition to form a place of mineralization was satisfied, so that there is the possibility of the occurrence of small-scale mineralized veins.

5–3 Area B_1

The surveys of Area B_1 consisted of five drill holes with a total length of 150 m and ten trenches totaling a 270 m length which were aimed at the niobium and tantalum geochemical anomaly area picked out as the result of the surveys in the preceding phase.

Pegmatite veins are scattered at various places around this area, including Area B_2; their width are usually not more than 2 m, though some have a 5 m width.

The drill holes and trenches consist mostly of pegmatite, but contain some schistose rock and gneissic rock locally.

Pegmatites have mostly been altered into white clay. Some parts are light-yellowish green, and consist of montmorillonite or kaolin and small amount of epidote. Since the rock in some drill holes has been altered into clay from the hole top to the bottom, it is presumed that white clay has been formed to a considerably broad extent both horizontally and vertically.

According to the result of chemical analysis, almost all the values of niobium content were not more than the threshold of the geochemical anomaly classification, and those of tantalum content came under the moderate to high anomaly levels for the most part, and none of them was worth the name of mineral indication.

The schistose rock hardly contains niobium or tantalum, and the geochemical anomaly area picked out here seems to derive from pegmatite.

5–4 Area B_2

The survey of Area B_2 aimed at the tin and tungsten anomaly area picked out as the result of the Phase II survey, 26 drill holes with a total length of 850 m were made and 28 trenches totaling a 610 m length were excavated.

Area B_2 and its surroundings consists of biotite paragneiss, pelitic schist, quartz schist,

quartzite, calc-silicate rock, and quartz veins and pegmatite veins intruded in these rocks. The drilling and trenching works have confirmed this geology, and tungsten mineral indications were found in Drill Holes MJT–29, 38 and 43 and Trench B_2–10 (Fig. 5, 6).

In Drill Hole MJT–29 a dense concentration of scheelite was found in the foot wall side of a quartz vein in the extent from 10.50 to 10.70 m depth ; 6.06% of WO_3 content was indicated in the extent from 10.70 to 10.80 m depth ; the value of 230 ppm of W was obtained from the hanging wall side ; the quartz vein indicated 180 ppm of W ; consequently the values of about 0.78% of WO_3 were estimated in the extent from 10.00 to 10.80 m depth in which the quartz vein lies. The calc-silicate rock found lower, in the extent from 12,60 to 13.60 m depth, indicated 0.18% of WO_3 on its hanging wall side and 0.19% of WO_3 on its foot wall side. And in the extent from 12.00 to 14.00 m depth in which the calc-silicate rock is included, the WO_3 content was found to be 0.14%. Here also tin content was found high, 240 ppm of Sn, on the hanging wall side.

In Drill Hole MJT–43 scheelite grains, a few millimeters in diameter, were found to be scattered in calc-silicate rock existing in the extent from 11.85 to 12.30 m depth, indicating 0.19% of WO_3 and 650 ppm of Sn. In the extent from 8.30 to 8.50 m depth, calc-silicate rock was found interlaid, indicating 0.2% of WO_3 and 590 ppm of Sn.

In Trench B_2–10, 20 cm-wide quartz-rich calc-silicate rock along the gneissic structure of the country rock and its hanging and fool walls were found to be disseminated with fine grains of scheelite. 0.48 to 1.56% of WO_3 content were indicated, and where there was high content of tungsten, the content of tin was also found high, 110 to 210 ppm of Sn. In parallel, there are other two small-scale mineralized quartz veins at 3 m apart on the hanging side and 0.5 m apart on foot side. The former indicating 1.38% of WO_3 in a 5 cm-wide part of the vein and the latter 0.49% of WO_3 in a 10 cm-wide part of the vein. Particularly the parts of dense concentration of scheelite are strongly skarnized part of calc-silicate rock.

As Drill Holes MJT–45, 46 and 47, which aimed at the extensions of these mineralized veins didn't intersect mineral indications; the scales of the individual mineralized veins are considered small and their continuity deficient. However, in Drill Holes MJT–29 and 43 made on the northwest-side strike extension of the mineralized veins in the Trench B_2–10, there is calc-silicate rock with mineralization at the depth of about 12 m of both the holes; these sections are considered to be on the same horizon. In Trench B_2–5 cut to the northwest of Drill Hole MJT–43 there is calc-silicate rock, which indicated 100 ppm of W. Pebbles of quartz vein and calc-silicate rock are scattered from the surroundings of the two drill holes to Trench B_2–5. So that, in this neighborhood including the mineralized vein found in Trench B_2–10, calc-silicate rock

with mineralization lies intermittently or in an echelon form along the gneissic structure of the country rock.

In Drill Hole MJT–38 calc-silicate rock is interlaid in the extent from 11.30 to 12.50 m depth, and scheelite grains, a few millimeters in diameter, are scattered in the upper half of the extent, the value of 1.06% of WO_3 being indicated in the extent from 11.50 to 12.00 m depth. Aiming at the extension of this mineral indication, Drill Holes MJT–49, 50 and 51 were bored. In Drill Hole MJT–50 calc-silicate rock was confirmed but no mineralization was recognized.

On the south side of Drill Hole MJT–38, several boulders of calc-silicate rock containing scheelite were found. With these as the center, in the NW–SE direction, pebbles of quartz vein and calc-silicate rock are scattered. These facts indicate that the calc-silicate rock in Drill Hole MJT–38 extends in the NW-SE direction. And it is presumed that along the line connecting this hole and Drill Hole MJT–29 lying to the northwest of it, the mineralized veins of this area occur either intermittently or in an echelon form.

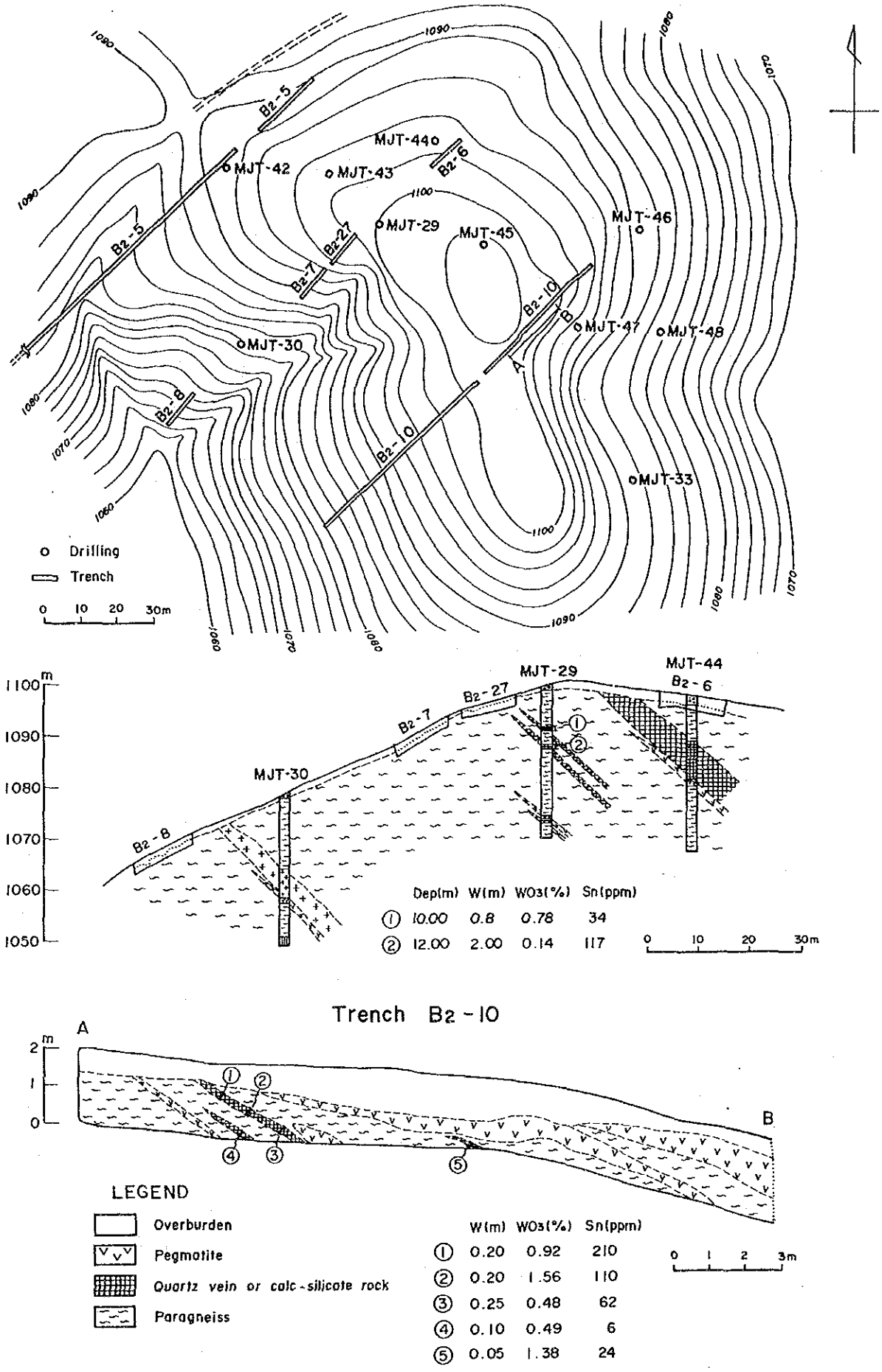

Fig. 5 Geological profile of drilling (MJT–29, 30, 44) and geological sketch of trench B_2-10

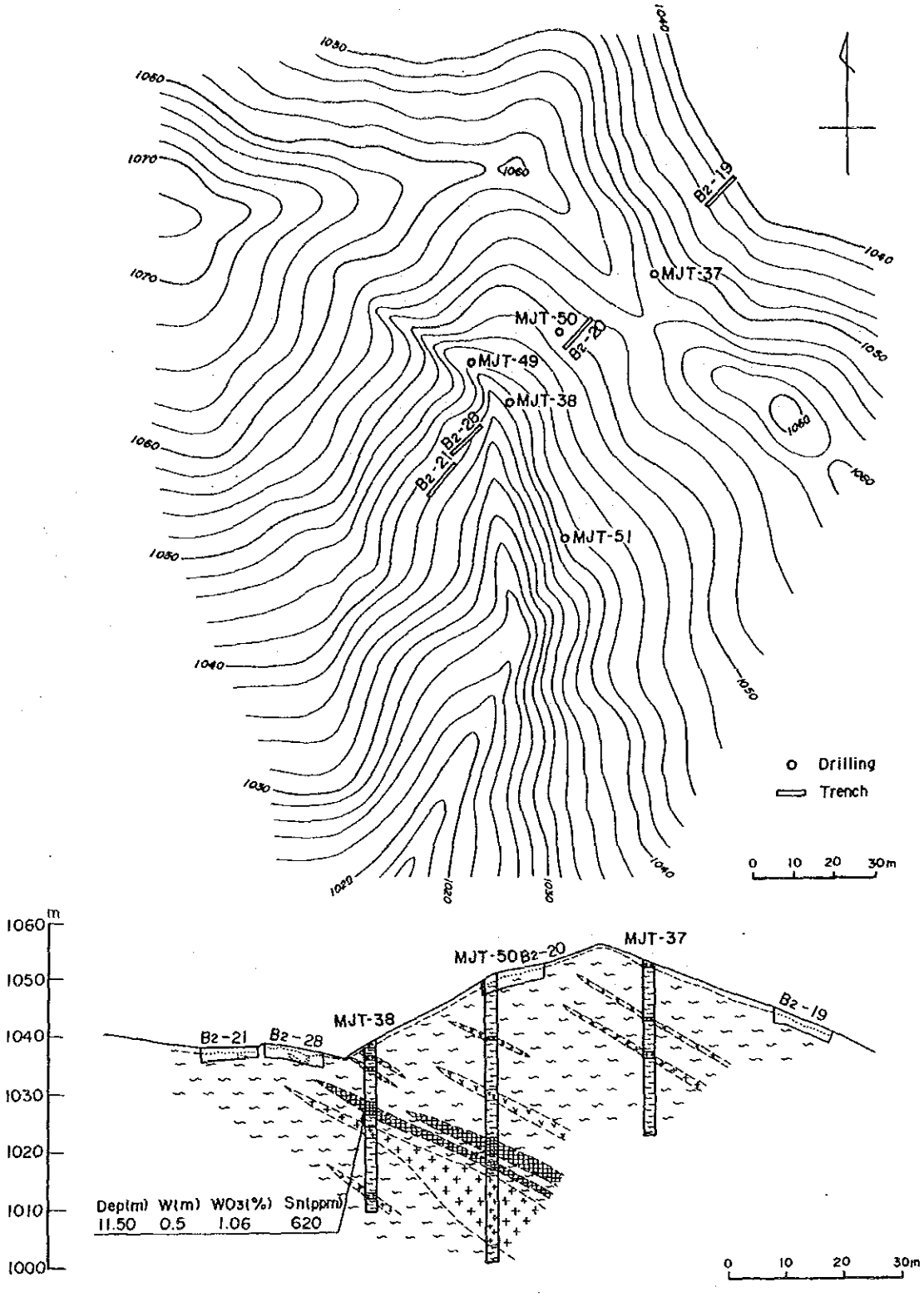

Fig. 6 Geological profile of drilling (MJT–37, 38, 50)

CHAPTER 6 CONCLUSION AND RECOMMENDATION

CHAPTER 6 CONCLUSION AND RECOMMENDATION

The conclusion and recommendation produced from the results of the Phase III survey are set forth below:

6–1 Conclusion

(1) Area A_1

Mineral indications in Area A_1 are tungsten-containing quartz veins and tungsten-containing pegmatite veins in a thin-vein form in biotite granite.

In the vicinities of old mining sites in the north of this area, were found several mineral indications which were presumed to be an extension or a parallel vein of the mineralized veins seen in the old mining sites, and among them three indications showed about 0.3% of WO_3.

A large number of pegmatite veins were found in the middle and in the south of this area. However, only a limited number of them were found to have mineral indications. As for tungsten content, one place indicated 1.4% of WO_3, but the grade was 0.2% of WO_3 or less in other places. The pegmatite veins are generally intermittent.

(2) Area A_2

Area A_2 is widely underlain by muscovite-biotite granite which is penetrated by pegmatite veins and quartz veins. None of these veins indicated particularly high tin content; no mineralized vein was found. The granitic rocks show tin contents ranging from 30 to 80 ppm which are relatively high as tin granite indicating the area has a basic condition for tin mineralization.

Also the facts that cassiterite grains, though in a small quantity, were seen by panning of the topsoil and that there are old workings of secondary tin ore deposit near the trenches seem to indicate the existence of mineralized veins on a small scale.

(3) Area B_1

In Area B_1 there are a large number of pegmatite veins intruded in schistose rocks and gneissic rocks. The result of analysis of the pegmatite indicates that almost all the values of niobium content are not more than the threshold (30 ppm of Nb) of the geochemical anomaly classification. As for tantalum content, the greater part of the values come under the moderate to high anomaly levels (9 to 13 ppm of Ta), but no data of practical mineral indications were obtained.

The schistose rocks hardly contain niobium or tantalum.

The above-mentioned evidences suggest that the picked-out geochemical anomalies derive from the pegmatite but there hardly is the possibility of the existence of a dense concentration part of niobium and tantalum.

Almost all the pegmatite veins have altered to white clay through montmorillonitization or kaolinization.

(4) Area B_2

The geology of Area B_2 consists of biotite paragneiss, pelitic schist, and quartz schist, with quartz veins and pegmatite veins intruded and calc-silicate rock interlaid.

Tungsten-mineralized veins were found in Trench B_2-10 and Drill Holes MJT–29, 38 and 43.

The mineralized vein in Trench B_2-10 is interlaid along the gneissic structure of biotite paragneiss. Scheelite is disseminated in 20 cm-wide quartz-rich calc-silicate rock and in biotite-concentrated zones, in the hanging and foot walls of the vein; WO_3 content was 0.48 to 1.56%. In addition to the above, parallel veins were found at 3.0 m apart on the hanging wall side of the vein and at 0.5 m apart on its foot wall side; WO_3 content in these veins was found to be 1.38% and 0.49% respectively.

In Drill Holes MJT–29, 38, and 43 scheelite grains are scattered in the quartz veins and calc-silicate rock. In Drill Hole MJT–29 a mineral indication with 0.78% of WO_3 in a 80 cm width, in Drill Hole MJT–38 one with 1.06% of WO_3 in a 50 cm width, and in Drill Hole MJT–43 ones with 0.19% and 0.2% of WO_3 in a 50 cm width respectively were found.

6–2 Recommendation

Tungsten mineral indications have been confirmed at several places in Area B_2, with the WO_3 content in the range of 0.48 to 1.56%. They are scattered in close relation with the gneissic structure in the NW-SE direction. Their mode of occurrence is presumed to be intermittent or in an echelon shape. Taking into consideration the resemblance of this condition to that of the ore deposits of the Yong Ku mine, there still are the possibilities of the emplacement of undiscovered mineralized veins.

APPENDICES

Apex. 1 Operational Data of Each Drill Hole

Drill hole No. MJT–1

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 21, '85 ~ DEC. 21, '85			0.3	0.3	—	20
	Drilling	DEC. 21, '85 ~ DEC. 22, '85			1.5	1.5	—	14
	Removing	DEC. 22, '85 ~ DEC. 22, '85			0.2	0.2	—	2
	Total	DEC. 21, '85 ~ DEC. 22, '85			2.0	2.0	—	36
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.60 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	98.7 %	0 ~ 30.00	98.7		98.7
					—	—		—
Working Time	Drilling	20°10′	57.6 %	50.4 %	Drilling Efficiency			
	Accompanying Works	14°50′	42.3 %	37.0 %	30.00/2	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2	Total Length / Working Days		15.00 m/Day
	Total	35°00′	100 %	87.5 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing: Preparation	5°00′	—	12.5 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	5.00 m	25.00 m	— m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	24.60 m	— m
	HW 114 mm : 5.00 m	16.60 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drilling hole No. MJT–2

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 23, '85 ~ DEC. 23, '85			0.3	0.3	—	15
	Drilling	DEC. 23, '85 ~ DEC. 24, '85			1.5	1.5	—	14
	Removing	DEC. 24, '85 ~ DEC. 24, '85			0.2	0.2	—	2
	Total	DEC. 23, '85 ~ DEC. 24, '85			2.0	2.0	—	31
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	21°10′	58.8 %	48.1 %	Drilling Efficiency			
	Accompanying Works	14°50′	41.2 %	33.7 %	30.00/2	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2	Total Length / Working Days		15.00 m/Day
	Total	36°00′	100 %	81.8 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing: Preparation	8°00′	—	18.2 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	44°00′	—	100 %	Drilled Length	5.00 m	25.00 m	— m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	25.00 m	— m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–3

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 25, '85 ~ DEC. 25, '85	0.3	0.3	—	10
	Drilling	DEC. 25, '85 ~ DEC. 26, '85	1.5	1.5	—	14
	Removing	DEC. 26, '85 ~ DEC. 26, '85	0.2	0.2	—	2
	Total	DEC. 25, '85 ~ DEC. 26, '85	2.0	2.0	—	26

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	100 %	0 ~ 30.00	100	100
					—	—	—

Working Time	Drilling	20°40′	53.0 %	46.9 %	Drilling Efficiency			
	Accompanying Works	18°20′	47.0 %	41.7 %	30.00/2	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2	Total Length / Working Days		15.00 m/Day
	Total	39°00′	100 %	88.6 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing: Preparation	5°00′	—	11.4 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	88 mm	66 mm
	Grand Total	44°00′	—	100 %	Drilled Length	4.00 m	26.00 m	— m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	4.00 m	26.00 m	— m
	HW 114 mm : 5.00 m	16.66 %	100 %	Remarks			
	NQ-NU 94 mm : — m	— %	— %				
	—	—	—				

Drill hole No. MJT–4

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 22, '85 ~ DEC. 23, '85	0.6	0.6	—	20
	Drilling	DEC. 23, '85 ~ DEC. 25, '85	2.2	2.2	—	20
	Removing	DEC. 25, '85 ~ DEC. 25, '85	0.2	0.2	—	2
	Total	DEC. 22, '85 ~ DEC. 25, '85	3.0	3.0	—	42

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section				
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	100 %	0 ~ 30.00	100	100
					—	—	—

Working Time	Drilling	27°10′	52.3 %	40.0 %	Drilling Efficiency			
	Accompanying Works	24°50′	47.7 %	36.5 %	30.00/3	Total Length / Drilling Period		10.00 m/Day
	Repairing	—	— %	— %	30.00/3	Total Length / Working Days		10.00 m/Day
	Total	52°00′	100 %	76.5 %	30.00/2.2	Total Length / Net Drilling Days		13.6 m/Day
	Removing: Preparation	16°00′	—	23.5 %	20/30.00	Net Drilling Workers / Total Length		0.67 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	68°00′	—	100 %	Drilled Length	5.00 m	25.00 m	— m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	5.00 m	25.00 m	— m
	HW 116 mm : 5.00 m	16.66 %	100 %	Remarks			
	NQ-NU 94 mm : — m	— %	— %				
	—	—	—				

Drill hole No. MJT–5

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 25, '85 ~ DEC. 25, '85			0.2	0.2	—	2
	Drilling	DEC. 25, '85 ~ DEC. 27, '85			2.1	2.1	—	16
	Removing	DEC. 27, '85 ~ DEC. 27, '85			0.2	0.2	—	2
	Total	DEC. 25, '85 ~ DEC. 27, '85			2.5	2.5	—	20
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	27.80 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	92.6 %	0 ~ 30.00	92.6		92.6
					—	—		—
Working Time	Drilling	25°35′	73.1 %	64.0 %	Drilling Efficiency			
	Accompanying Works	9°25′	26.9 %	23.5 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	35°00′	100 %	87.5 %	30.00/2.1	Total Length / Net Drilling Days		14.3 m/Day
	Removing Preparation	5°00′	—	12.5 %	16/30.00	Net Drilling Workers / Total Length		0.53 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	5.00 m	25.00 m	— m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	22.80 m	— m
	HW 116 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–6

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 27, '85 ~ DEC. 27, '85			0.2	0.2	—	14
	Drilling	DEC. 27, '85 ~ DEC. 28, '85			1.1	1.1	—	10
	Removing	DEC. 28, '85 ~ DEC. 28, '85			0.2	0.2	—	2
	Total	DEC. 27, '85 ~ DEC. 28, '85			1.5	1.5	—	26
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	17°45′	57.3 %	49.3 %	Drilling Efficiency			
	Accompanying Works	13°15′	42.7 %	36.8 %	30.00/1.5	Total Length / Drilling Period		20.00 m/Day
	Repairing	—	— %	— %	30.00/1.5	Total Length / Working Days		20.00 m/Day
	Total	31°00′	100 %	86.1 %	30.00/1.1	Total Length / Net Drilling Days		27.27 m/Day
	Removing Preparation	5°00′	—	13.9 %	10/30.00	Net Drilling Workers / Total Length		0.33 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	36°00′	—	100 %	Drilled Length	5.00 m	25.00 m	— m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	25.00 m	— m
	HW 114 mm : 5.00 m	16.60 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT−7

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 28, '85 ~ JAN. 2, '86			4.0	4.0	—	35
	Drilling	DEC. 29, '85 ~ JAN. 4, '86			2.2	2.2	—	20
	Removing	JAN. 4, '85 ~ JAN. 4, '86			0.8	0.8	—	7
	Total	DEC. 28, '85 ~ JAN. 4, '86			7.0	7.0	—	62
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	18°00′	56.2 %	18.7 %	Drilling Efficiency			
	Accompanying Works	14°00′	43.8 %	14.6 %	30.00/7	Total Length / Drilling Period		4.28 m/Day
	Repairing	—	— %	— %	30.00/7	Total Length / Working Days		4.28 m/Day
	Total	32°00′	100 %	33.3 %	30.00/2.2	Total Length / Net Drilling Days		13.63 m/Day
	Removing Preparation	16°00′	—	16.7 %	20/30.00	Net Drilling Workers / Total Length		0.67 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	48.00	—	50 %	Bit Size	116 mm	86 mm	66 mm
	Grand Total	96°00′	—	100 %	Drilled Length	41.0 m	25.90 m	— m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.10 m	25.90 m	— m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT−8

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 13, '85 ~ DEC. 18, '85			6.0	6.0	—	195
	Drilling	DEC. 19, '85 ~ DEC. 21, '85			1.7	1.7	—	15
	Removing	DEC. 21, '85 ~ DEC. 21, '85			0.3	0.3	—	3
	Total	DEC. 13, '85 ~ DEC. 21, '85			8.0	8.0	—	213
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	17°10′	55.4 %	22.6 %	Drilling Efficiency			
	Accompanying Works	13°50′	44.6 %	18.2 %	30.00/8	Total Length / Drilling Period		3.75 m/Day
	Repairing	—	— %	— %	30.00/8	Total Length / Working Days		3.75 m/Day
	Total	31.00	100 %	40.8 %	30.00/1.7	Total Length / Net Drilling Days		17.65 m/Day
	Removing Preparation	5°00′	—	6.6 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	40°00′	—	52.6 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	76°00′	—	100 %	Drilled Length	5.00 m	9.40 m	15.60 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	9.40 m	15.60 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–9

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 18, '85 ~ DEC. 18, '85			0.3	0.3	—	67
	Drilling	DEC. 19, '85 ~ DEC. 20, '85			1.5	1.5	—	14
	Removing	DEC. 20, '85 ~ DEC. 20, '85			0.2	0.2	—	2
	Total	DEC. 18, '85 ~ DEC. 20, '85			2.0	2.0	—	83
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	16°20′	51.0 %	40.8 %	Drilling Efficiency			
	Accompanying Works	15°40′	49.0 %	39.2 %	30.00/2 $\frac{\text{Total Length}}{\text{Drilling Period}}$			15.00 m/Day
	Repairing	—	— %	— %	30.00/2 $\frac{\text{Total Length}}{\text{Working Days}}$			15.00 m/Day
	Total	32°00′	100 %	80.0 %	30.00/1.5 $\frac{\text{Total Length}}{\text{Net Drilling Days}}$			20.00 m/Day
	Removing Preparation	8°00′	—	20 %	14/30.00 $\frac{\text{Net Drilling Workers}}{\text{Total Length}}$			0.67 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	5.00 m	13.30 m	11.70 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	13.30 m	11.70 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–10

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 21, '85 ~ DEC. 21, '85			0.3	0.3	—	17
	Drilling	DEC. 21, '85 ~ DEC. 22, '85			1.5	1.5	—	14
	Removing	DEC. 22, '85 ~ DEC. 22, '85			0.2	0.2	—	2
	Total	DEC. 21, '85 ~ DEC. 22, '85			2.0	2.0	—	33
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	22°00′	56.4 %	50 %	Drilling Efficiency			
	Accompanying Works	17°00′	43.6 %	38.6 %	30.00/2.0 $\frac{\text{Total Length}}{\text{Drilling Period}}$			15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0 $\frac{\text{Total Length}}{\text{Working Days}}$			15.00 m/Day
	Total	39.00	100 %	88.6 %	30.00/1.5 $\frac{\text{Total Length}}{\text{Net Drilling Days}}$			20.00 m/Day
	Removing Preparation	5°00′	—	11.4 %	14/30.00 $\frac{\text{Net Drilling Workers}}{\text{Total Length}}$			0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	44°00′	—	100 %	Drilled Length	4.00 m	12.00 m	14.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.00 m	12.00 m	14.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 16.00 m	53.33 %		100 %				
	—	—		—				

Drill hole No. MJT−11

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 27, '85 ~ DEC. 27, '85			0.6	0.6	—	8
	Drilling	DEC. 27, '85 ~ DEC. 29, '85			2.1	2.1	—	19
	Removing	DEC. 29, '85 ~ DEC. 29, '85			0.3	0.3	—	3
	Total	DEC. 27, '85 ~ DEC. 29, '85			3.0	3.0	—	30
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	23°05′	41.2 %	32.1 %	Drilling Efficiency			
	Accompanying Works	24°55′	44.5 %	34.6 %	30.00/3.0	Total Length / Drilling Period		10.00 m/Day
	Repairing	8°00′	14.3 %	11.1 %	30.00/3.0	Total Length / Working Days		10.00 m/Day
	Total	56°00′	100 %	77.8 %	30.00/2.1	Total Length / Net Drilling Days		14.28 m/Day
	Removing Preparation	16°00′	—	22.3 %	19/30.00	Net Drilling Workers / Total Length		0.63 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	72°00′	—	100 %	Drilled Length	5.00 m	6.45 m	8.55 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	6.45 m	8.55 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 11.00m	36.66 %		100 %				
	—	—		—				

Drill hole No. MJT−12

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 30, '85 ~ JAN. 2, '86			4.0	4.0	—	31
	Drilling	JAN. 3, '86 ~ JAN. 4, '86			1.7	1.7	—	15
	Removing	JAN. 4, '86 ~ JAN. 4, '86			0.3	0.3	—	3
	Total	DEC. 30, '85 ~ JAN. 4, '86			6.0	6.0	—	49
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	15°00′	46.9 %	20.8 %	Drilling Efficiency			
	Accompanying Works	17°00′	53.1 %	23.6 %	30.00/6	Total Length / Drilling Period		5.00 m/Day
	Repairing	—	— %	— %	30.00/6	Total Length / Working Days		5.00 m/Day
	Total	32°00′	100 %	44.4 %	30.00/1.7	Total Length / Net Drilling Days		17.65 m/Day
	Removing Preparation	8°00′	—	11.1 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	32°00′	—	44.5 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	72°00′	—	100 %	Drilled Length	3.75 m	16.25 m	10.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.75 m	16.25 m	10.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 20.00 m	66.66 %		100 %				
	—	—		—				

Drill hole No. MJT−13

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 5, '86 ~ JAN. 5, '86			0.3	0.3	—	21
	Drilling	JAN. 5, '86 ~ JAN. 6, '86			1.5	1.5	—	14
	Removing	JAN. 6, '86 ~ JAN. 6, '86			0.2	0.2	—	2
	Total	JAN. 5, '86 ~ JAN. 6, '86			2.0	2.0	—	37
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	20°40′	51.7 %	43.1 %	Drilling Efficiency			
	Accompanying Works	19°20′	48.3 %	40.3 %	30.00/2.0 Total Length / Drilling Period			15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0 Total Length / Working Days			15.00 m/Day
	Total	40°00′	100 %	83.3 %	30.00/1.5 Total Length / Net Drilling Days			20.00 m/Day
	Removing Preparation	8°00′	—	16.6 %	14/30.00 Net Drilling Workers / Total Length			0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	3.90 m	15.10 m	11.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.90 m	15.10 m	11.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 13.00 m	43.33 %		100 %				
	—	—		—				

Drill hole No. MJT−14

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 5, '86 ~ JAN. 9, '86			4.8	4.8	—	177
	Drilling	JAN. 10, '86 ~ JAN. 11, '86			2.0	2.0	—	18
	Removing	JAN. 11, '86 ~ JAN. 11, '86			0.2	0.2	—	2
	Total	JAN. 5, '86 ~ JAN. 11, '86			7.0	7.0	—	197
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.60 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	98.6 %	0 ~ 30.00	98.6		98.6
					—	—		—
Working Time	Drilling	29°40′	61.8 %	33.7 %	Drilling Efficiency			
	Accompanying Works	18°20′	38.2 %	20.8 %	30.00/7.0 Total Length / Drilling Period			4.28 m/Day
	Repairing	—	— %	— %	30.00/7.0 Total Length / Working Days			4.28 m/Day
	Total	48°00′	100 %	88.0 %	30.00/2.0 Total Length / Net Drilling Days			15.00 m/Day
	Removing Preparation	16°00′	—	18.2 %	18/30.00 Net Drilling Workers / Total Length			0.60 men/m
	Removing Moving	24°00′	—	27.3 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	88°00′	—	100 %	Drilled Length	4.60 m	23.40 m	2.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.60 m	23.00 m	2.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT−15

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 10, '86 ~ JAN. 11, '86	2.0	2.0	—	136
	Drilling	JAN. 12, '86 ~ JAN. 13, '86	2.0	2.0	—	18
	Removing	JAN. 7, '86 ~ JAN. 9, '86	3.0	3.0	—	3
	Total	JAN. 7, '86 ~ JAN. 13, '86	7.0	7.0	—	157

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section				
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100	100
					—	—	—

Working Time	Drilling	18°00′	56.3 %	25.0 %	Drilling Efficiency			
	Accompanying Works	14°00′	43.7 %	19.4 %	30.00/7.0	Total Length / Drilling Period		4.28 m/Day
	Repairing	—	— %	— %	30.00/7.0	Total Length / Working Days		4.28 m/Day
	Total	32°00′	100 %	44.4 %	30.00/2.0	Total Length / Net Drilling Days		15.00 m/Day
	Removing Preparation	—	—	— %	18/30.00	Net Drilling Workers / Total Length		0.60 men/m
	Removing Moving	16°00′	—	22.2 %	Drilled Length by Bit Size			
	Others	24°00′	—	33.3 %	Bit Size	116 mm	86 mm	66 mm
	Grand Total	72°00′	—	100 %	Drilled Length	4.20 m	19.80 m	6.00 m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	4.20 m	19.80 m	6.00 m
	HW 114 mm : 5.00 m	16.66 %	100 %	Remarks			
	NQ-NU 94 mm : — m	— %	— %				
	—	—	—				

Drill hole No. MJT−16

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 16, '86 ~ JAN. 16, '86	0.3	0.3	—	9
	Drilling	JAN. 16, '86 ~ JAN. 18, '86	2.5	2.5	—	23
	Removing	JAN. 19, '86 ~ JAN. 20, '86	2.2	2.2	—	12
	Total	JAN. 16, '86 ~ JAN. 20, '86	5.0	5.0	—	44

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section				
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100	100
					—	—	—

Working Time	Drilling	30°30′	63.5 %	42.4 %	Drilling Efficiency			
	Accompanying Works	17.30	36.5 %	24.3 %	30.00/5.0	Total Length / Drilling Period		6.00 m/Day
	Repairing	—	— %	— %	30.00/5.0	Total Length / Working Days		6.00 m/Day
	Total	48°00′	100 %	66.7 %	30.00/2.5	Total Length / Net Drilling Days		12.00 m/Day
	Removing Preparation	16°00′	—	22.2 %	23/30.00	Net Drilling Workers / Total Length		0.77 men/m
	Removing Moving	8°00′	—	11.1 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	72°00′	—	100 %	Drilled Length	2.65 m	17.05 m	10.30m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	2.65 m	17.05 m	10.30m
	HW 114 mm : 3.00 m	10.00 %	100 %	Remarks			
	NQ-NU 94 mm : — m	— %	— %				
	—	—	—				

Drill hole No. MJT−17

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 14, '86 ~ JAN. 14, '86			0.3	0.3	—	28
	Drilling	JAN. 14, '86 ~ JAN. 15, '86			1.5	1.5	—	14
	Removing	JAN. 15, '86 ~ JAN. 15, '86			0.2	0.2	—	2
	Total	JAN. 14, '86 ~ JAN. 15, '86			2.0	2.0	—	44
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	20°00′	50.0 %	35.7 %	Drilling Efficiency			
	Accompanying Works	20°00′	50.0 %	35.7 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	40°00′	100 %	71.4 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing Preparation	—	—	— %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing Moving	16°00′	—	28.6 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	56°00′	—	100 %	Drilled Length	1.70 m	17.30 m	11.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	1.70 m	17.30 m	11.00 m
	HW 114 mm : 4.00 m	13.33 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT−18

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 12, '86 ~ JAN. 13, '86			2.0	2.0	—	64
	Drilling	JAN. 14, '86 ~ JAN. 15, '86			1.8	1.8	—	16
	Removing	JAN. 15, '86 ~ JAN. 15, '86			0.2	0.2	—	2
	Total	JAN. 12, '86 ~ JAN. 15, '86			4.0	4.0	—	82
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	33°00′	68.8 %	51.6 %	Drilling Efficiency			
	Accompanying Works	15°00′	31.2 %	23.4 %	30.00/4.0	Total Length / Drilling Period		7.50 m/Day
	Repairing	—	— %	— %	30.00/4.0	Total Length / Working Days		7.50 m/Day
	Total	48°00′	100 %	75.0 %	30.00/1.8	Total Length / Net Drilling Days		1.67 m/Day
	Removing Preparation	16°00′	—	25.0 %	16/30.00	Net Drilling Workers / Total Length		0.53 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	64°00′	—	100 %	Drilled Length	1.50 m	16.70 m	11.80 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	1.50 m	16.70 m	11.80 m
	HW 114 mm : 3.00 m	10.00 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–19

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 16, '86 ~ JAN. 16, '86			0.3	0.3	—	12
	Drilling	JAN. 16, '86 ~ JAN. 18, '86			2.0	2.0	—	18
	Removing	JAN. 18, '86 ~ JAN. 18, '86			0.2	0.2	—	2
	Total	JAN. 16, '86 ~ JAN. 18, '86			2.5	2.5	—	32
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	22°15′	55.6 %	46.4 %	Drilling Efficiency			
	Accompanying Works	17°45′	44.4 %	37.0 %	30.00/2.5 Total Length / Drilling Period			12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5 Total Length / Working Days			12.00 m/Day
	Total	40°00′	100 %	83.3 %	30.00/2.0 Total Length / Net Drilling Days			15.00 m/Day
	Removing Preparation	8°00′	—	16.6 %	18/30.00 Net Drilling Workers / Total Length			0.60 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	3.50 m	15.70 m	10.80 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.50 m	15.70 m	10.80 m
	HW 114 mm : 4.00 m	13.33 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–20

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 18, '86 ~ JAN. 18, '86			0.3	0.3	—	24
	Drilling	JAN. 18, '86 ~ JAN. 19, '86			1.2	1.2	—	11
	Removing	JAN. 20, '86 ~ JAN. 20, '86			1.0	1.0	—	9
	Total	JAN. 18, '86 ~ JAN. 20, '86			2.5	2.5	—	44
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0%	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	19°00′	59.4 %	39.6 %	Drilling Efficiency			
	Accompanying Works	13°00′	40.6 %	27.0 %	30.00/2.5 Total Length / Drilling Period			12.00m/Day
	Repairing	—	— %	— %	30.00/2.5 Total Length / Working Days			12.00m/Day
	Total	32°00′	100 %	66.7 %	30.00/1.2 Total Length / Net Drilling Days			25.00m/Day
	Removing Preparation	8°00′	—	16.7 %	11/30.00 Net Drilling Workers / Total Length			0.37 men/m
	Removing Moving	8°00′	—	16.7 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	2.00 m	16.90 m	11.10m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	2.00 m	16.90 m	11.10m
	HW 114 mm : 2.00 m	6.66 %		100 %	Remarks			
	NQ-NU 94 mm : — m	— %		— %				
	—	—		—				

Drill hole No. MJT–21

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 9, '85 ~ DEC. 9, '85	0.3	0.3	—	28
	Drilling	DEC. 9, '85 ~ DEC. 10, '85	1.7	1.7	—	15
	Removing	DEC. 11, '85 ~ DEC. 12, '85	1.5	1.5	—	14
	Total	DEC. 9, '85 ~ DEC. 12, '85	3.5	3.5	—	57

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	28.60 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	95.3 %	0 ~ 30.00	95.3	95.3
					—	—	—

Working Time	Drilling	14°40′	45.8 %	26.2 %	Drilling Efficiency			
	Accompanying Works	17°20′	54.2 %	30.9 %	30.00/3.5	Total Length / Drilling Period	8.57 m/Day	
	Repairing	—	— %	— %	30.00/3.5	Total Length / Working Days	8.57 m/Day	
	Total	32°00′	100 %	57.1 %	30.00/1.7	Total Length / Net Drilling Days	17.6 m/Day	
	Removing: Preparation	8°00′	—	14.3 %	15/30.00	Net Drilling Workers / Total Length	0.50 men/m	
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	16°00′	—	28.6 %	Bit Size	116 mm	86 mm	66 mm
	Grand Total	56°00′	—	100 %	Drilled Length	5.00 m	9.70 m	15.30 m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	5.00 m	9.00 m	14.60 m
	HW 114 mm : 5.00 m	16.66 %	100 %	Remarks			
	NQ-NU 94 mm : 23.00 m	76.66 %	100 %				
	—	—	—				

Drill hole No. MJT–22

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 7, '85 ~ DEC. 7, '85	1.0	1.0	—	8
	Drilling	DEC. 8, '85 ~ DEC. 9, '85	1.5	1.5	—	14
	Removing	DEC. 5, '85 ~ DEC. 6, '85	2.0	2.0	—	18
	Total	DEC. 5, '85 ~ DEC. 9, '85	4.5	4.5	—	40

Drilling Length	Planned Length	30.00 m	Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.20 m	Depth m	Section %	Total %
	Length Drilled	30.00 m	Core Recovery	97.3 %	0 ~ 30.00	97.3	97.3
					—	—	—

Working Time	Drilling	17°30′	54.7 %	31.3 %	Drilling Efficiency			
	Accompanying Works	14°30′	45.3 %	25.9 %	30.00/4.5	Total Length / Drilling Period	6.67 m/Day	
	Repairing	—	— %	— %	30.00/4.5	Total Length / Working Days	6.67 m/Day	
	Total	32°00′	100 %	57.1 %	30.00/1.5	Total Length / Net Drilling Days	20.00 m/Day	
	Removing: Preparation	8°00′	—	14.3 %	14/30.00	Net Drilling Workers / Total Length	0.47 men/m	
	Removing: Moving	16°00′	—	28.5 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	56°00′	—	100 %	Drilled Length	4.50 m	10.50 m	15.00 m

Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length	Recovery of Casing Pipe	Core Length	4.50 m	10.00 m	14.70 m
	HW 114 mm : 4.00 m	13.33 %	100 %	Remarks			
	NQ-NU 94 mm : 21.00 m	70.00 %	100 %				
	—	—	—				

Drill hole No. MJT−23

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 3, '85 ~ DEC. 4, '85			2.0	2.0	—	51
	Drilling	DEC. 6, '85 ~ DEC. 7, '85			1.8	1.8	—	16
	Removing	DEC. 5, '85 ~ DEC. 5, '85			1.2	1.2	—	11
	Total	DEC. 3, '85 ~ DEC. 7, '85			5.0	5.0	—	78
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	18°30′	46.3 %	28.9 %	Drilling Efficiency			
	Accompanying Works	21°30′	53.7 %	33.6 %	30.00/5.0 Total Length / Drilling Period			6.00 m/Day
	Repairing	—	— %	— %	30.00/5.0 Total Length / Working Days			6.00 m/Day
	Total	40°00′	100 %	62.5 %	30.00/1.8 Total Length / Net Drilling Days			16.67 m/Day
	Removing Preparation	24°00′	—	37.5 %	16/30.00 Net Drilling Workers / Total Length			0.53 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	64°00′	—	100 %	Drilled Length	3.30 m	7.70 m	19.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.30 m	7.70 m	17.90 m
	HW 114 mm : 6.00 m	20.00 %		100 %	Remarks			
	NQ-NU 94 mm : 21.00 m	70.00 %		100 %				
	—	—		—				

Drill hole No. MJT−24

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 8, '85 ~ DEC. 8, '85			0.3	0.3	—	23
	Drilling	DEC. 8, '85 ~ DEC. 9, '85			1.5	1.5	—	14
	Removing	DEC. 9, '85 ~ DEC. 9, '85			0.2	0.2	—	2
	Total	DEC. 8, '85 ~ DEC. 9, '85			2.0	2.0	—	39
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	28.70 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	95.6 %	0 ~ 30.00	95.6		95.6
					—	—		—
Working Time	Drilling	20°30′	51.3 %	42.7 %	Drilling Efficiency			
	Accompanying Works	19°30′	48.7 %	40.6 %	30.00/2.0 Total Length / Drilling Period			15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0 Total Length / Working Days			15.00 m/Day
	Total	40°00′	100 %	83.3 %	30.00/1.5 Total Length / Net Drilling Days			20.00 m/Day
	Removing Preparation	8°00′	—	16.7 %	14/30.00 Net Drilling Workers / Total Length			0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	4.20 m	13.50 m	12.30 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.20 m	12.80 m	11.70 m
	HW 114 mm : 4.00 m	13.33 %		100 %	Remarks			
	NQ-NU 94 mm : 22.00 m	73.33 %		100 %				
	—	—		—				

Drill hole No. MJT–25

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 10, '85 ~ DEC. 10, '85			0.3	0.3	—	12
	Drilling	DEC. 10, '85 ~ DEC. 11, '85			1.7	1.7	—	15
	Removing	DEC. 12, '85 ~ DEC. 12, '85			1.0	1.0	—	9
	Total	DEC. 10, '85 ~ DEC. 12, '85			3.0	3.0	—	36
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	19°00′	47.5 %	33.9 %	Drilling Efficiency			
	Accompanying Works	21°00′	52.5 %	37.5 %	30.00/3.0	Total Length / Drilling Period		10.00 m/Day
	Repairing	—	— %	— %	30.00/3.0	Total Length / Working Days		10.00 m/Day
	Total	40°00′	100 %	71.4 %	30.00/1.7	Total Length / Net Drilling Days		17.65 m/Day
	Removing: Preparation	16°00′	—	28.6 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	56°00′	—	100 %	Drilled Length	1.70 m	14.30 m	14.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	1.70 m	14.30 m	14.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NU-NU 94 mm : 21.00m	70.00 %		90 %				
	—	—		—				

Drill hole No. MJT–26

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 19, '85 ~ NOV. 19, '85			1.0	1.0	—	18
	Drilling	NOV. 20, '85 ~ NOV. 22, '85			2.0	2.0	—	18
	Removing	NOV. 13, '85 ~ NOV. 18, '85			6.0	6.0	—	18
	Total	NOV. 13, '85 ~ NOV. 22, '85			9.0	9.0	—	54
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	25°15′	48.6 %	23.4 %	Drilling Efficiency			
	Accompanying Works	26°45′	51.4 %	24.8 %	30.00/9.0	Total Length / Drilling Period		3.33 m/Day
	Repairing	—	— %	— %	30.00/9.0	Total Length / Working Days		3.33 m/Day
	Total	52°00′	100 %	48.1 %	30.00/2.0	Total Length / Net Drilling Days		15.00 m/Day
	Removing: Preparation	8°00′	—	7.4 %	18/30.00	Net Drilling Workers / Total Length		0.60 men/m
	Removing: Moving	—	—	— %	Drilled Length by Bit Size			
	Others	48°00′	—	44.4 %	Bit Size	116 mm	86 mm	66 mm
	Grand Total	108°00′	—	100 %	Drilled Length	5.00 m	10.00 m	15.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	10.00 m	15.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 27.00m	90.00 %		100 %				
	—	—		—				

Drill hole No. MJT–27

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 8, '85 ~ NOV. 8, '85			1.0	1.0	—	5
	Drilling	NOV. 9, '85 ~ NOV. 12, '85			3.7	3.7	—	30
	Removing	NOV. 12, '85 ~ NOV. 12, '85			0.3	0.3	—	2
	Total	NOV. 8, '85 ~ NOV. 12, '85			5.0	5.0	—	37
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	27.20	42.7 %	38.0 %	Drilling Efficiency			
	Accompanying Works	36°40′	57.3 %	50.9 %	30.00/5.0	Total Length / Drilling Period		6.00 m/Day
	Repairing	—	— %	— %	30.00/5.0	Total Length / Working Days		6.00 m/Day
	Total	64°00′	100 %	88.9 %	30.00/3.7	Total Length / Net Drilling Days		8.11 m/Day
	Removing Preparation	8°00′	—	11.1 %	30/30.00	Net Drilling Workers / Total Length		1.00 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	72°00′	—	100 %	Drilled Length	5.00 m	12.00 m	13.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	12.00 m	13.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 22.0 m	73.33 %		100 %				
	—	—		—				

Drill hole No. MJT–28

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 9, '85 ~ NOV. 9, '85			0.5	0.5	—	9
	Drilling	NOV. 10, '85 ~ NOV. 20, '85			4.5	4.5	—	41
	Removing	NOV. 13, '85 ~ NOV. 18, '85			6.0	6.0	—	18
	Total	NOV. 9, '85 ~ NOV. 20, '85			11.0	11.0	—	68
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.80 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	99.3 %	0 ~ 30.00	99.3		99.3
					—	—		—
Working Time	Drilling	29°35′	46.2 %	24.6 %	Drilling Efficiency			
	Accompanying Works	34°25′	53.8 %	28.7 %	30.00/11.0	Total Length / Drilling Period		2.73 m/Day
	Repairing	—	— %	— %	30.00/11.0	Total Length / Working Days		2.73 m/Day
	Total	64°00′	100 %	53.3 %	30.00/4.5	Total Length / Net Drilling Days		6.67 m/Day
	Removing Preparation	8°00′	—	6.7 %	41/30.00	Net Drilling Workers / Total Length		1.37 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	48°00′	—	40 %	Bit Size	116 mm	86 mm	66 mm
	Grand Total	120°00′	—	100 %	Drilled Length	5.00 m	9.00 m	16.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	9.00 m	15.80 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 24.00m	80.00 %		100 %				
	—	—		—				

Drill hole No. MJT–29

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 22, '85 ~ NOV. 22, '85			0.2	0.2	—	3
	Drilling	NOV. 22, '85 ~ NOV. 23, '85			1.6	1.6	—	15
	Removing	NOV. 23, '85 ~ NOV. 23, '85			0.2	0.2	—	2
	Total	NOV. 22, '85 ~ NOV. 23, '85			2.0	2.0	—	20
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.50 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	98.3 %	0 ~ 30.00	98.3		98.3
					—	—		—
Working Time	Drilling	20°00'	46.5 %	41.7 %	Drilling Efficiency			
	Accompanying Works	23°00'	53.5 %	47.9 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	43°00'	100 %	89.6 %	30.00/1.6	Total Length / Net Drilling Days		18.75 m/Day
	Removing Preparation	5°00'	—	10.4 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00'	—	100 %	Drilled Length	3.60 m	9.10 m	17.70m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.60 m	9.10 m	16.80m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 21.00 m	70.00 %		100 %				
	—	—		—				

Drill hole No. MJT–30

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 24, '85 ~ NOV. 24, '85			0.2	0.2	—	2
	Drilling	NOV. 24, '85 ~ NOV. 25, '85			1.7	1.7	—	15
	Removing	NOV. 25, '85 ~ NOV. 25, '85			0.1	0.1	—	1
	Total	NOV. 24, '85 ~ NOV. 25, '85			2.0	2.0	—	18
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	25.90 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	86.3 %	0 ~ 30.00	86.3		86.3
					—	—		—
Working Time	Drilling	13°40'	50.6 %	42.7 %	Drilling Efficiency			
	Accompanying Works	13°20'	49.4 %	41.7 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	27°00'	100 %	84.4 %	30.00/1.7	Total Length / Net Drilling Days		17.65 m/Day
	Removing Preparation	5°00'	—	15.6 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	32°00'	—	100 %	Drilled Length	2.00 m	13.00 m	15.00m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	2.00 m	13.00 m	10.90m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 16.00 m	53.33 %		100 %				
	—	—		—				

Drill hole No. MJT–31

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 20, '85 ~ NOV. 20, '85	0.3	0.3	—	2
	Drilling	NOV. 20, '85 ~ NOV. 21, '85	1.5	1.5	—	14
	Removing	NOV. 21, '85 ~ NOV. 21, '85	0.2	0.2	—	2
	Total	NOV. 20, '85 ~ NOV. 21, '85	2.0	2.0	—	18

Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	13°00′	40.6 %	32.5 %	Drilling Efficiency			
	Accompanying Works	19°00′	59.4 %	47.5 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	32°00′	100 %	80.0 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing Preparation	8°00′	—	20.0 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	5.00 m	11.30 m	13.70 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	11.30 m	13.70 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 16.00 m	53.33 %		100 %				
	—	—		—				

Drill hole No. MJT–32

		Period	Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 26, '85 ~ NOV. 27, '85	0.6	0.6	—	2
	Drilling	NOV. 27, '85 ~ NOV. 28, '85	1.7	1.7	—	14
	Removing	NOV. 27, '85 ~ NOV. 28, '85	0.2	0.2	—	2
	Total	NOV. 26, '85 ~ NOV. 28, '85	2.5	2.5	—	18

Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	28.20 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	94.0 %	0 ~ 30.00	94.0		94.0
					—	—		—
Working Time	Drilling	15°00′	46.9 %	37.5 %	Drilling Efficiency			
	Accompanying Works	17°00′	53.1 %	42.5 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	32°00′	100 %	80.0 %	30.00/1.7	Total Length / Net Drilling Days		17.65 m/Day
	Removing Preparation	8°00′	—	20.0 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	2.20 m	12.10 m	15.20 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	2.20 m	10.60 m	15.40 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 19.00 m	63.33 %		100 %				
	—	—		—				

Drill hole No. MJT–33

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 24, '85 ~ NOV. 24, '85			0.5	0.5	—	4
	Drilling	NOV. 24, '85 ~ NOV. 26, '85			1.8	1.8	—	16
	Removing	NOV. 26, '85 ~ NOV. 26, '85			0.2	0.2	—	2
	Total	NOV. 24, '85 ~ NOV. 26, '85			2.5	2.5	—	22
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	29.70 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	99.0 %	0 ~ 30.00	99.0		99.0
					—	—		—
Working Time	Drilling	15°40′	44.8 %	39.2 %	Drilling Efficiency			
	Accompanying Works	19°20′	55.2 %	48.3 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	35°00′	100 %	87.5 %	30.00/1.8	Total Length / Net Drilling Days		16.67 m/Day
	Removing Preparation	5°00′	—	12.5 %	16/30.00	Net Drilling Workers / Total Length		0.53 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	4.00 m	8.00 m	18.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	400 m	7.70 m	18.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 21.00 m	70.00 %		100 %				
	—	—		—				

Drill hole No. MJT–34

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 22, '85 ~ NOV. 22, '85			0.2	0.2	—	2
	Drilling	NOV. 22, '85 ~ NOV. 23, '85			1.6	1.6	—	14
	Removing	NOV. 23, '85 ~ NOV. 23, '85			0.2	0.2	—	2
	Total	NOV. 22, '85 ~ NOV. 23, '85			2.0	2.0	—	18
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	16°10′	42.6 %	36.8 %	Drilling Efficiency			
	Accompanying Works	21°50′	57.4 %	49.6 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	38°00′	100 %	86.4 %	30.00/1.6	Total Length / Net Drilling Days		18.75 m/Day
	Removing Preparation	6°00′	—	13.6 %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	44°00′	—	100 %	Drilled Length	5.00 m	11.40 m	13.60 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	5.00 m	11.40 m	13.60 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 16.00 m	53.33 %		100 %				
	—	—		—				

Drill hole No. MJT–35

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 28, '85 ~ NOV. 28, '85			0.3	0.3	—	2
	Drilling	NOV. 28, '85 ~ NOV. 30, '85			2.0	2.0	—	18
	Removing	NOV. 30, '85 ~ NOV. 30, '85			0.2	0.2	—	2
	Total	NOV. 28, '85 ~ NOV. 30, '85			2.5	2.5	—	22
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	27.90 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	93.0 %	0 ~ 30.00	93.0		93.0
					—	—		—
Working Time	Drilling	14°20′	44.8 %	35.8 %	Drilling Efficiency			
	Accompanying Works	17°40′	55.2 %	44.2 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	32°00′	100 %	80.0 %	30.00/2.0	Total Length / Net Drilling Days		15.00 m/Day
	Removing Preparation	8°00′	—	20.0 %	18/30.00	Net Drilling Workers / Total Length		0.60 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	3.00 m	10.00 m	17.00m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.00 m	7.90 m	17.00m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 18.00m	60.00 %		100 %				
	—	—		—				

Drill hole No. MJT–36

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 26, '85 ~ NOV. 26, '85			0.3	0.3	—	3
	Drilling	NOV. 27, '85 ~ NOV. 28, '85			2.0	2.0	—	18
	Removing	NOV. 28, '85 ~ NOV. 28, '85			0.2	0.2	—	2
	Total	NOV. 26, '85 ~ NOV. 28, '85			2.5	2.5	—	23
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	27.75 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	92.5 %	0 ~ 30.00	92.5		92.5
					—	—		—
Working Time	Drilling	13°00′	40.6 %	32.5 %	Drilling Efficiency			
	Accompanying Works	19°00′	59.4 %	47.5 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	32°00′	100 %	80.0 %	30.00/2.0	Total Length / Net Drilling Days		15.00 m/Day
	Removing Preparation	8°00′	—	20.0 %	18/30.00	Net Drilling Workers / Total Length		0.60 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	40°00′	—	100 %	Drilled Length	1.70 m	15.05 m	13.25m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	1.70 m	12.80 m	13.25m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 17.00 m	56.66 %		100 %				
	—	—		—				

Drill hole No. MJT–37

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 29, '85 ~ NOV. 29, '85			0.3	0.3	—	2
	Drilling	NOV. 29, '85 ~ NOV. 30, '85			1.5	1.5	—	14
	Removing	NOV. 30, '85 ~ NOV. 30, '85			0.2	0.2	—	2
	Total	NOV. 29, '85 ~ NOV. 30, '85			2.0	2.0	—	18
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	26.30 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	87.6 %	0 ~ 30.00	87.6		87.6
					—	—		—
Working Time	Drilling	13°20′	41.7 %	27.8 %	Drilling Efficiency			
	Accompanying Works	18°40′	58.3 %	38.9 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	32°00′	100 %	66.7 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing Preparation	8°00′	—	16.6 %	14/30.00	Net Drilling Workers / Total Length		46.7 men/m
	Removing Moving	8°00′	—	16.6 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	2.70 m	9.70 m	17.60m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	2.70 m	8.10 m	15.50m
	HW 114mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 23.00 m	76.66 %		100 %				
	—	—		—				

Drill hole No. MJT–38

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 2, '85 ~ DEC. 3, '85			0.6	0.6	—	15
	Drilling	DEC. 3, '85 ~ DEC. 4, '85			1.7	1.7	—	15
	Removing	DEC. 4, '85 ~ DEC. 4, '85			0.2	0.2	—	2
	Total	DEC. 2, '85 ~ DEC. 4, '85			2.5	2.5	—	32
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	24.60 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	82.0 %	0 ~ 30.00	82.0		82.0
					—	—		—
Working Time	Drilling	18°30′	46.3 %	33.0 %	Drilling Efficiency			
	Accompanying Works	21°30′	53.7 %	38.4 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	40°00′	100 %	71.4 %	30.00/1.7	Total Length / Net Drilling Days		17.67 m/Day
	Removing Preparation	16°00′	—	28.6 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	56°00′	—	100 %	Drilled Length	3.00 m	12.90 m	15.00m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.00 m	9.70 m	11.90m
	HW 114mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 25.00 m	83.33 %		100 %				
	—	—		—				

Drill hole No. MJT–39

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	DEC. 1, '85 ~ DEC. 1, '85			0.3	0.3	—	22
	Drilling	DEC. 1, '85 ~ DEC. 2, '85			1.5	1.5	—	14
	Removing	DEC. 2, '85 ~ DEC. 2, '85			0.2	0.2	—	2
	Total	DEC. 1, '85 ~ DEC. 2, '85			2.0	2.0	—	38
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	27.45 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	91.5 %	0 ~ 30.00	91.5		91.5
					—	—		—
Working Time	Drilling	13°30′	42.2 %	28.2 %	Drilling Efficiency			
	Accompanying Works	18°30′	57.8 %	38.5 %	30.00/2.0	Total Length / Drilling Period		15.00 m/Day
	Repairing	—	— %	— %	30.00/2.0	Total Length / Working Days		15.00 m/Day
	Total	32°00′	100 %	66.7 %	30.00/1.5	Total Length / Net Drilling Days		20.00 m/Day
	Removing Preparation	—	—	— %	14/30.00	Net Drilling Workers / Total Length		0.47 men/m
	Removing Moving	16°00′	—	33.3 %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	2.40 m	13.90 m	13.70 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	2.40 m	12.40 m	12.65 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 24.00 m	80.00 %		100 %				
	—	—		—				

Drill hole No. MJT–40

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	NOV. 30, '85 ~ DEC. 1, '85			0.6	0.6	—	19
	Drilling	DEC. 1, '85 ~ DEC. 2, '85			1.7	1.7	—	15
	Removing	DEC. 2, '85 ~ DEC. 2, '85			0.2	0.2	—	2
	Total	NOV. 30, '85 ~ DEC. 2, '85			2.5	2.5	—	36
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	26.90 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	89.6 %	0 ~ 30.00	89.6		89.6
					—	—		—
Working Time	Drilling	15°50′	49.5 %	33.0 %	Drilling Efficiency			
	Accompanying Works	16°10′	50.5 %	33.7 %	30.00/2.5	Total Length / Drilling Period		12.00 m/Day
	Repairing	—	— %	— %	30.00/2.5	Total Length / Working Days		12.00 m/Day
	Total	32°00′	100 %	66.7 %	30.00/1.7	Total Length / Net Drilling Days		17.67 m/Day
	Removing Preparation	16°00′	—	33.3 %	15/30.00	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	48°00′	—	100 %	Drilled Length	3.00 m	12.00 m	15.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	3.00 m	8.90 m	15.00 m
	HW 114 mm : 5.00 m	16.66 %		100 %	Remarks			
	NQ-NU 94 mm : 20.00 m	66.66 %		100 %				
	—	—		—				

Drill hole No. MJT—41

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	FEB. 10, '86 ~ FEB. 10, '86			1.0	1.0	—	49
	Drilling	FEB. 11, '86 ~ FEB. 13, '86			2.8	2.8	—	25
	Removing	FEB. 14, '86 ~ FEB. 14, '86			0.2	0.2	—	2
	Total	FEB. 10, '86 ~ FEB. 14, '86			4.0	4.0	—	76
Drilling Length	Planned Length	30.00 m			Core Recovery for each 30 m section			
	Increase in Length	0 m	Core Length	30.00 m	Depth m	Section %		Total %
	Length Drilled	30.00 m	Core Recovery	100.0 %	0 ~ 30.00	100		100
					—	—		—
Working Time	Drilling	30°00′	53.6 %	46.9 %	Drilling Efficiency			
	Accompanying Works	26°00′	46.4 %	40.6 %	30.00/4.0	Total Length / Drilling Period		7.50 m/Day
	Repairing	—	— %	— %	30.00/4.0	Total Length / Working Days		7.50 m/Day
	Total	56°00′	100 %	87.5 %	30.00/2.8	Total Length / Net Drilling Days		10.71 m/Day
	Removing Preparation	8°00′	—	12.5 %	25/30.00	Net Drilling Workers / Total Length		0.83 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	64°00′	—	100 %	Drilled Length	4.00 m	11.00 m	15.00 m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.00 m	11.00 m	15.00 m
	HW 114 mm : 4.00 m	13.33 %		100 %	Remarks			
	NQ-NU 94 mm : 15.00 m	50.00 %		100 %				
	—	—		—				

Drill hole No. MJT—42

		Period			Number of Days	Actual Working Days	Day off	Total Number of Workers
Working Period	Preparation	JAN. 27, '86 ~ JAN. 27, '86			1.0	1.0	—	122
	Drilling	JAN. 28, '86 ~ JAN. 30, '86			2.8	2.8	—	25
	Removing	JAN. 30, '86 ~ JAN. 30, '86			0.2	0.2	—	2
	Total	JAN. 27, '86 ~ JAN. 30, '86			4.0	4.0	—	149
Drilling Length	Planned Length	50.00 m			Core Recovery for each 50 m section			
	Increase in Length	0 m	Core Length	50.00 m	Depth m	Section %		Total %
	Length Drilled	50.00 m	Core Recovery	100.0 %	0 ~ 50.00	100		100
					—	—		—
Working Time	Drilling	32°15′	44.8 %	40.3 %	Drilling Efficiency			
	Accompanying Works	39°45′	55.2 %	49.7 %	50.00/4.0	Total Length / Drilling Period		12.50 m/Day
	Repairing	—	— %	— %	50.00/4.0	Total Length / Working Days		12.50 m/Day
	Total	72°00′	100 %	90.0 %	50.00/2.8	Total Length / Net Drilling Days		17.86 m/Day
	Removing Preparation	8°00′	—	10.0 %	25/50	Net Drilling Workers / Total Length		0.50 men/m
	Removing Moving	—	—	— %	Drilled Length by Bit Size			
	Others	—	—	—	Bit Size	116 mm	86 mm	66 mm
	Grand Total	80°00′	—	100 %	Drilled Length	4.00 m	21.00 m	25.00m
Inserted Casing Pipe	Pipe Size & Inserted Length	Inserted Length / Drilling Length		Recovery of Casing Pipe	Core Length	4.00 m	21.00 m	25.00m
	HW 114 mm : 5.00 m	10.00 %		100 %	Remarks			
	NQ-NU 94 mm : 25.00 m	50.00 %		100 %				
	—	—		—				