

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF NATURAL RESOURCES
BUREAU OF MINES
REPORT ON GEOLOGICAL SURVEY
OF
EASTERN MINDANAO
PHASE III
GEOLOGICAL, GEOPHYSICAL SURVEYS, AND
DRILLING EXPLORATION

APPENDICES

GEOLOGICAL MAPS	PLATE I-1 ~ I-7	9 sheets
GEOPHYSICAL MAPS	PLATE II-1 ~ II-16	16 sheets
CORE LOG AND ASSAY	PLATE III-1 ~ III-5	5 sheets

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METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
GOVERNMENT OF JAPAN

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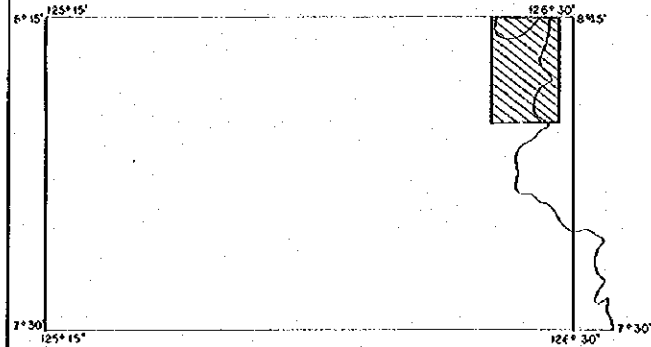
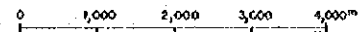
国際協力事業団
20831

PL. I-1

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

GEOLOGICAL MAP

Scale 1 : 50,000

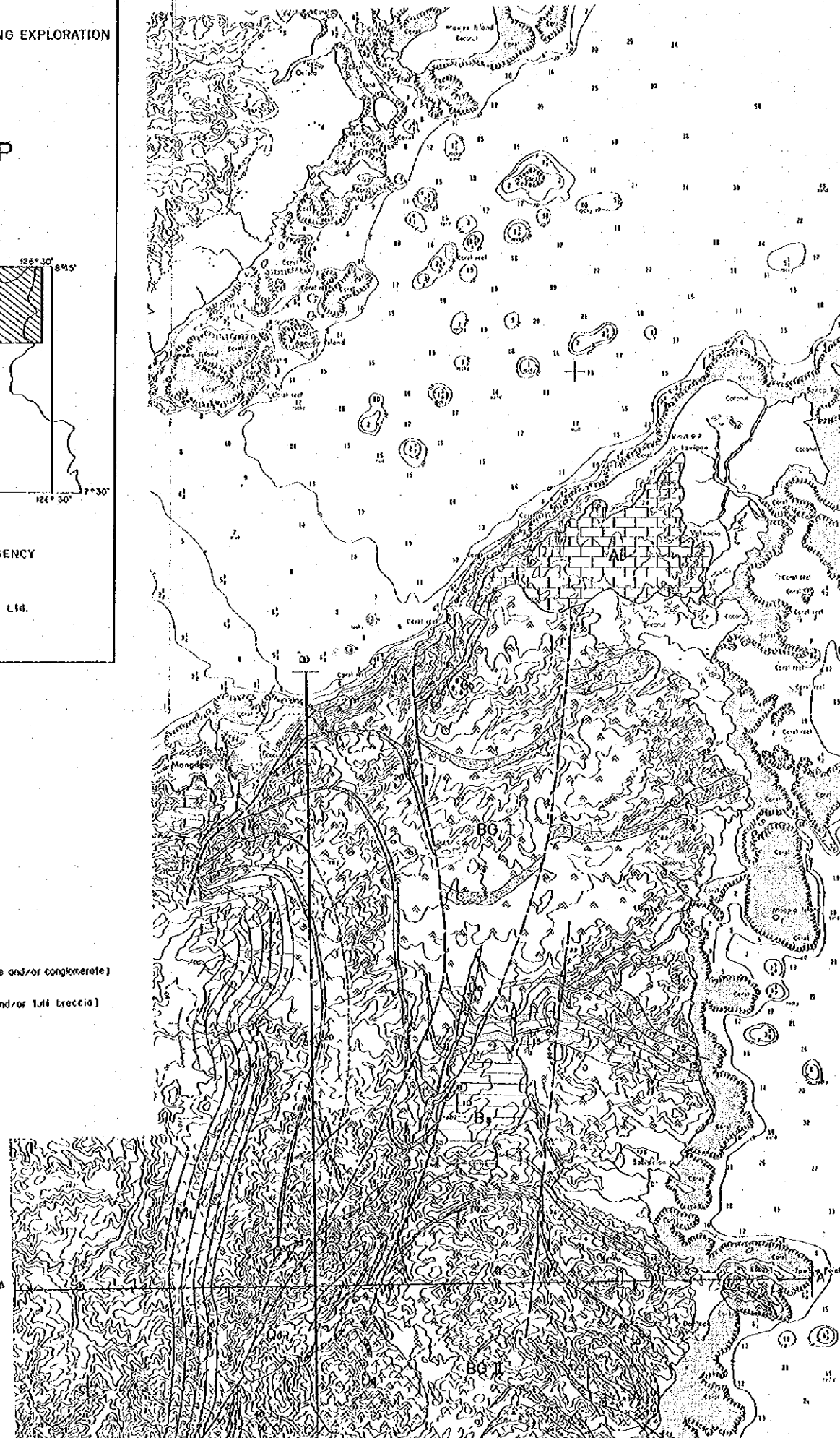


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimetal Exploration Co., Ltd.

LEGEND

- | | | | | |
|--|--|--|--|--|
| Pleistocene Agiungon F. | | Coral reef limestone | | |
| E. Miocene Distig F. | | Siltstone, sandstone & conglomerate with thin bedded limestone & basalt lava | | |
| Oligocene Marogogoy F. | | Limestone & conglomerate with thin bedded basalt lava & tuff | | |
| Cretaceous
~Oligocene
Bercelona G. | | Basalt lava | Clastic
(mudstone, sandstone and/or conglomerate) | |
| | | Andesite lava | | Pyroclastics
(tuff, lapilli tuff and/or tuff breccia) |
| | | Basalt lava | | |
| Intrusive rocks | | Quartz-diorite | | |
| | | Gabbro | | |
| | | Diorite | | |
| | | Eolerite (sheet or dike) | | |

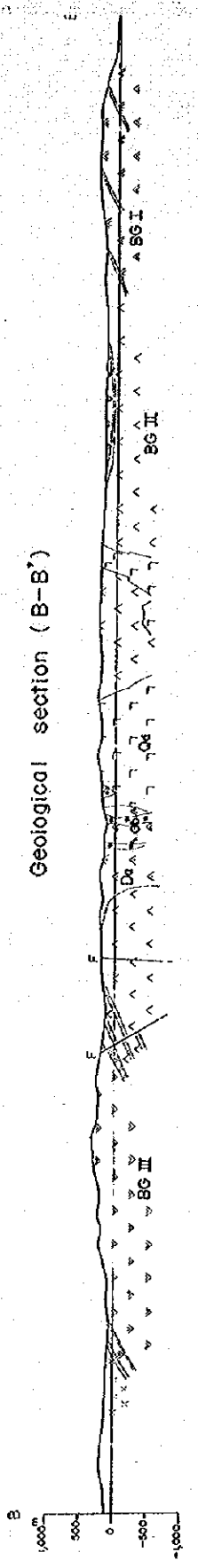
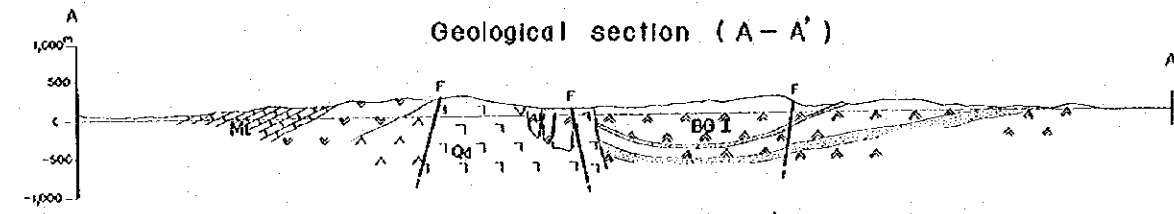
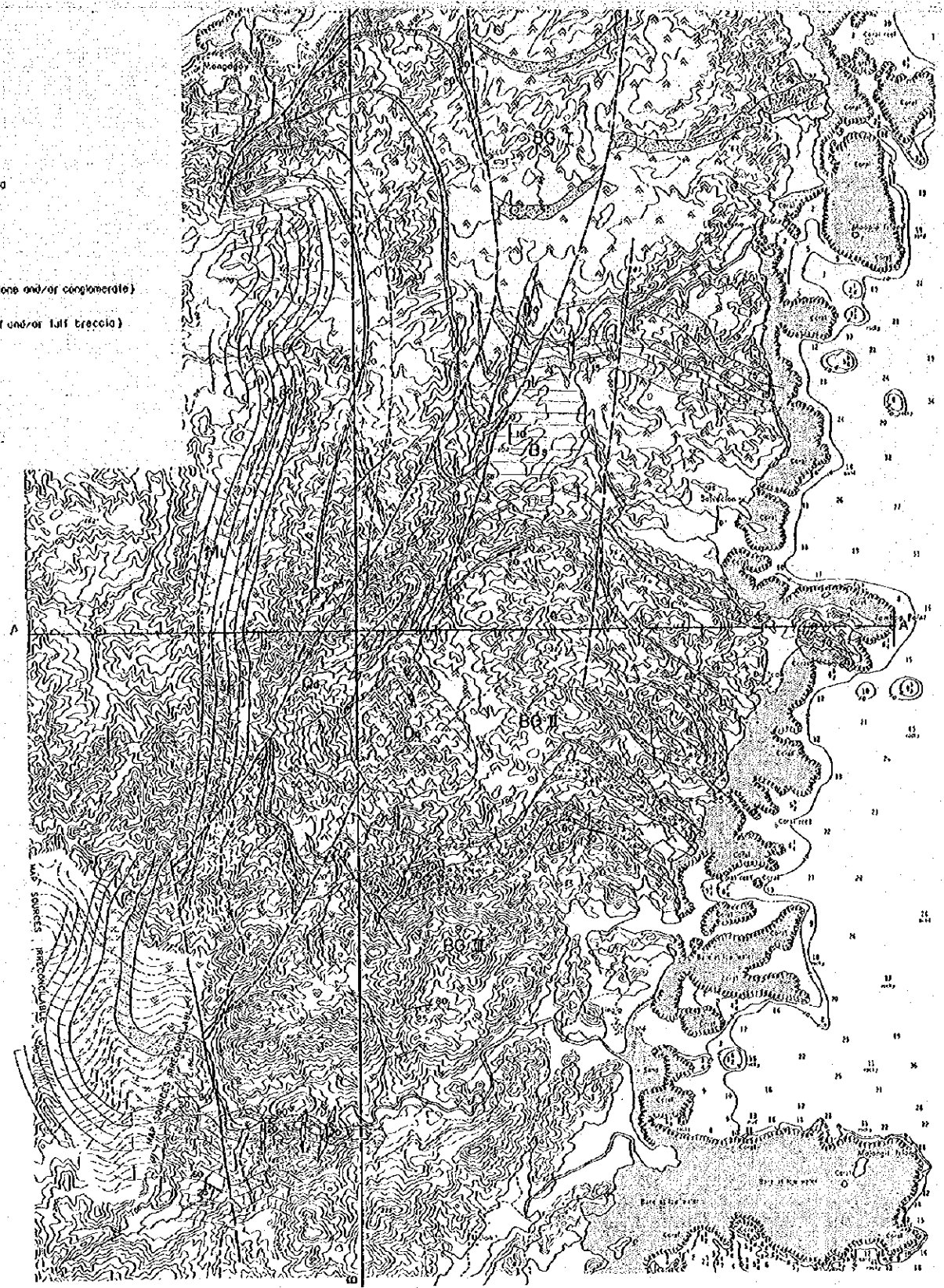


Geological section (B-B')



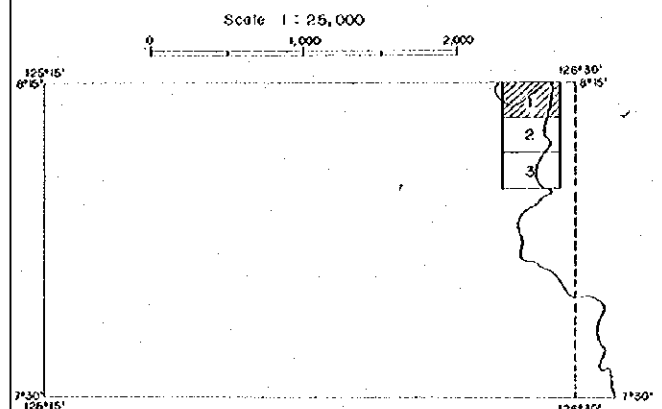
LEGEND

- Pleistocene Agauyagon F. Coral reef limestone
- E. Miocene Bislig F. Siltstone, sandstone & conglomerate with thin bedded limestone & basalt lava
- Oligocene Mangogoy F. Limestone & conglomerate with thin bedded basalt lava & tuff
- Cretaceous - Oligocene Darcelona G. Basalt lava
- Clastics (mudstone, sandstone and/or conglomerate)
- Andosite lava
- Pyroclastics (tuff, lapilli tuff and/or tuff breccia)
- Basalt lava
- Quartz - diorite
- Gabbro
- Diorite
- Colerite (sheet or dike)

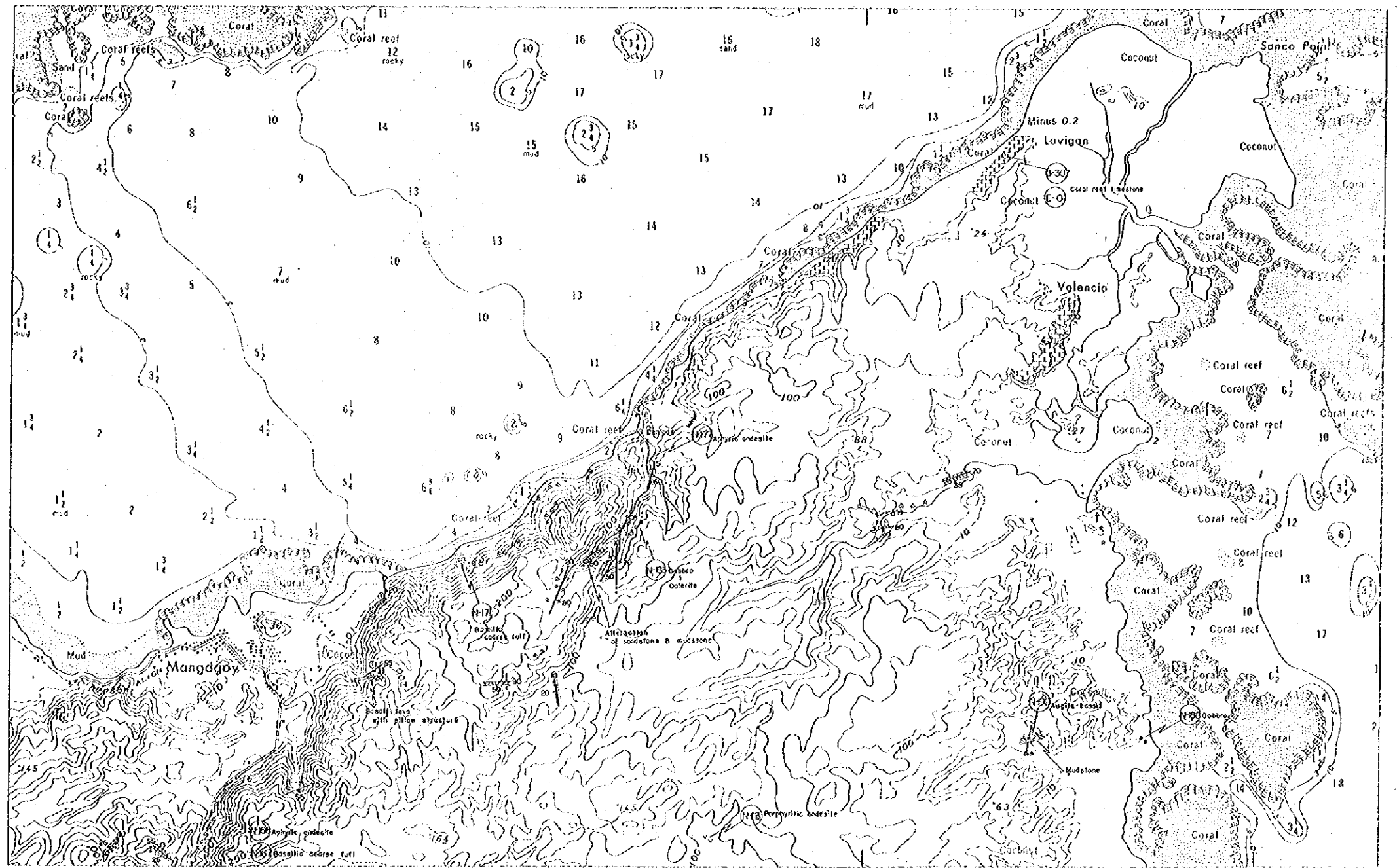


GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

ROUTE AND ROCK SAMPLE MAP



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
Prepared by Bishimetal Exploration Co., Ltd.



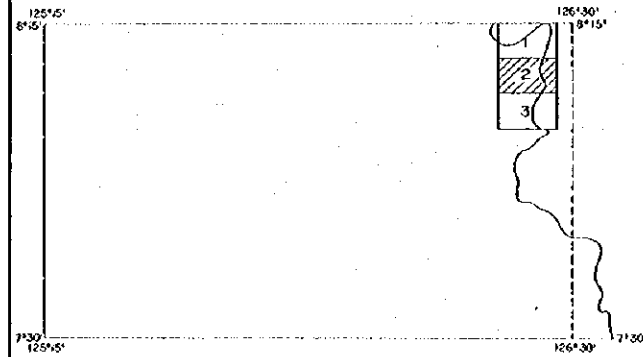
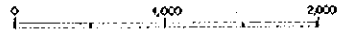
LEGEND

- | | | | |
|--|-------------------------------------|--|----------------------------|
| | Mudstone | | Dolerite |
| | Alternation of mudstone & sandstone | | Gabbro |
| | Sandstone | | Diorite |
| | Conglomerate | | Diorite porphyry |
| | Limestone | | Mineralized |
| | Tuff | | Argillaceous |
| | Lapilliuff & tuff breccia | | Bedding |
| | Dacite | | Flow layer of pillow lava |
| | Andesite | | Boundary of intrusive rock |
| | Brecciated andesite | | Fault |
| | Basalt | | Paleocurrent |
| | Basalt (pillow structure) | | Sample No. |
| | Basalt (columnar joint) | | |

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

ROUTE AND ROCK SAMPLE MAP

Scale 1:25,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
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LEGEND

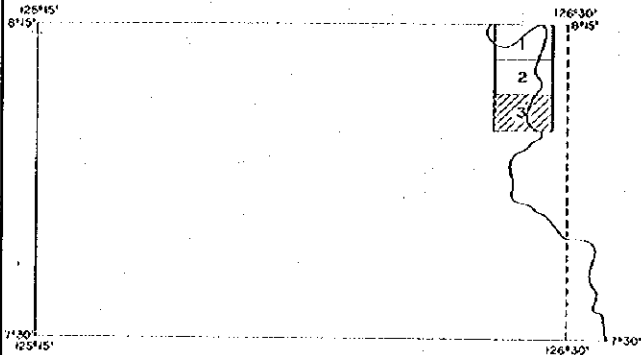
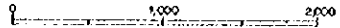
- | | | | |
|--|-------------------------------------|--|----------------------------|
| | Mudstone | | Dolerite |
| | Alternation of mudstone & sandstone | | Gabbro |
| | Sandstone | | Diorite |
| | Conglomerate | | Diorite porphyry |
| | Limestone | | Mineralized |
| | Tuff | | Argillaceous |
| | Lapilli tuff & tuff breccia | | Bedding |
| | Dacite | | Flow layer of pillow lava |
| | Andesite | | Boundary of intrusive rock |
| | Brecciated andesite | | Fault |
| | Basalt | | Paleocurrent |
| | Basalt (pillow structure) | | Sample No. |
| | Basalt (column joint) | | |



GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

ROUTE AND ROCK SAMPLE MAP

Scale 1:25,000



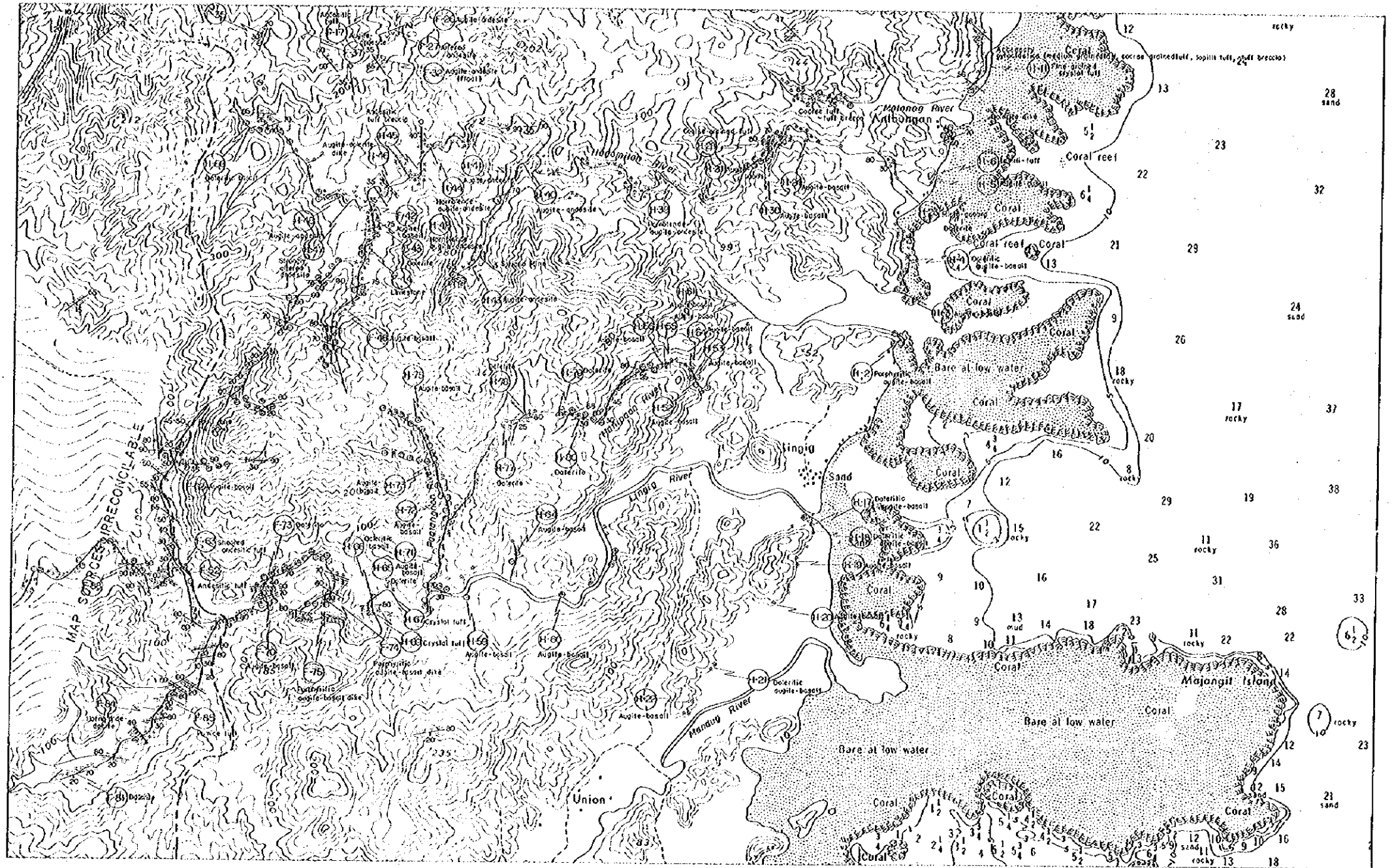
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

Prepared by Bishimet Exploration Co., Ltd.

LEGEND

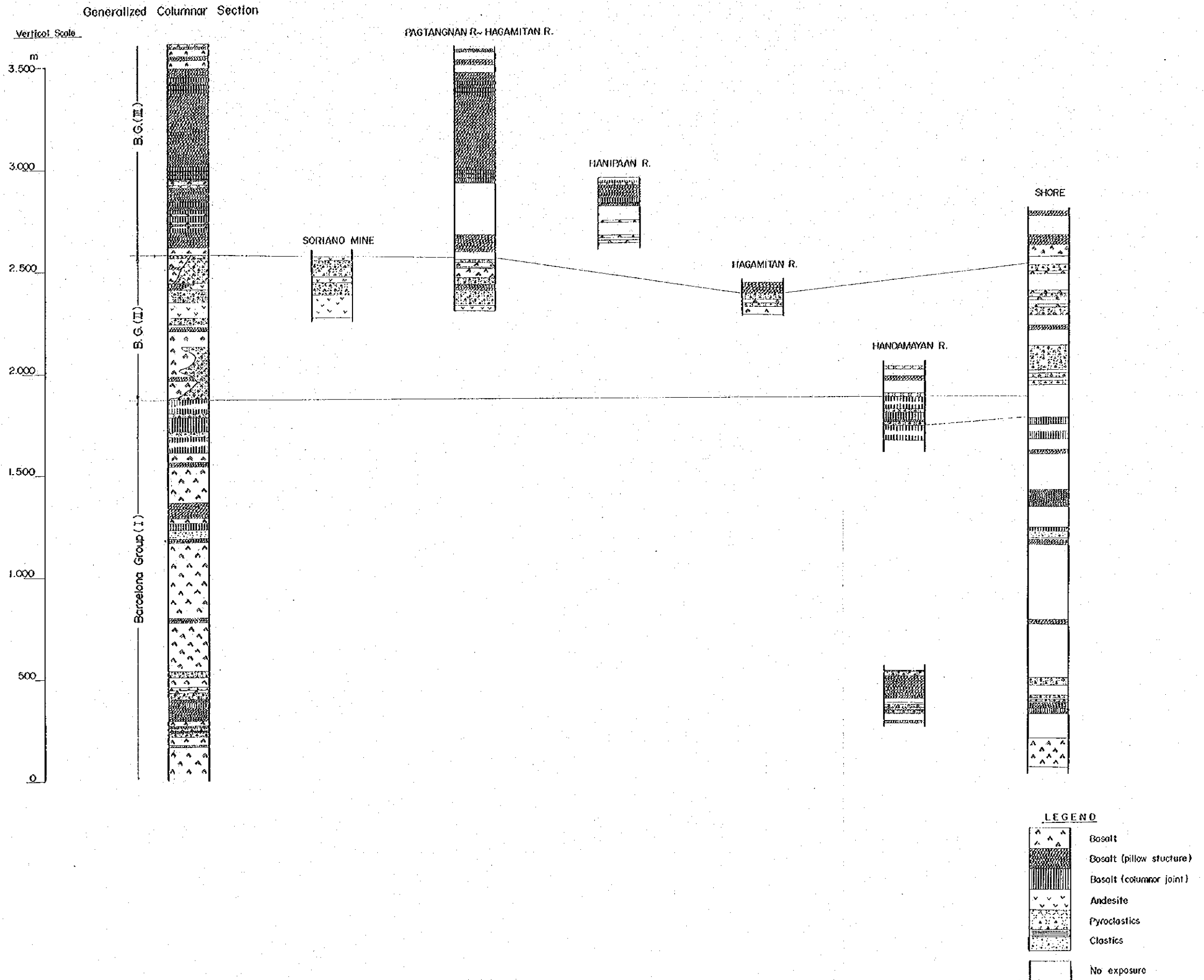
- | | | | |
|--|-------------------------------------|--|----------------------------|
| | Mudstone | | Dolerite |
| | Alternation of mudstone & sandstone | | Gabbro |
| | Sandstone | | Diorite |
| | Conglomerate | | Diorite porphyry |
| | Limestone | | Mineralized |
| | Tuff | | Argilloceous |
| | Lapiltuff & tuff breccia | | Bedding |
| | Dacite | | Flow layer of pillow lava |
| | Andesite | | Boundary of intrusive rock |
| | Brecciated andesite | | Fault |
| | Basalt | | Paleocurrent |
| | Basalt (pillow structure) | | Sample No. |
| | Basalt (columnar joint) | | |



GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

COLUMNAR SECTION
OF
LOCAL STRATIGRAPHY

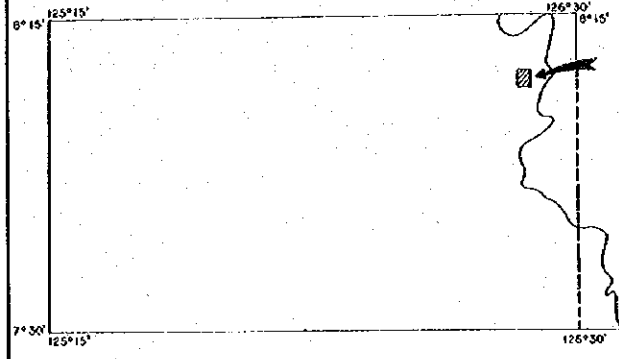
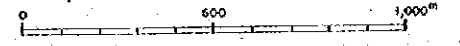
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
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GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

GEOLOGICAL MAP OF THE BISLIG AREA

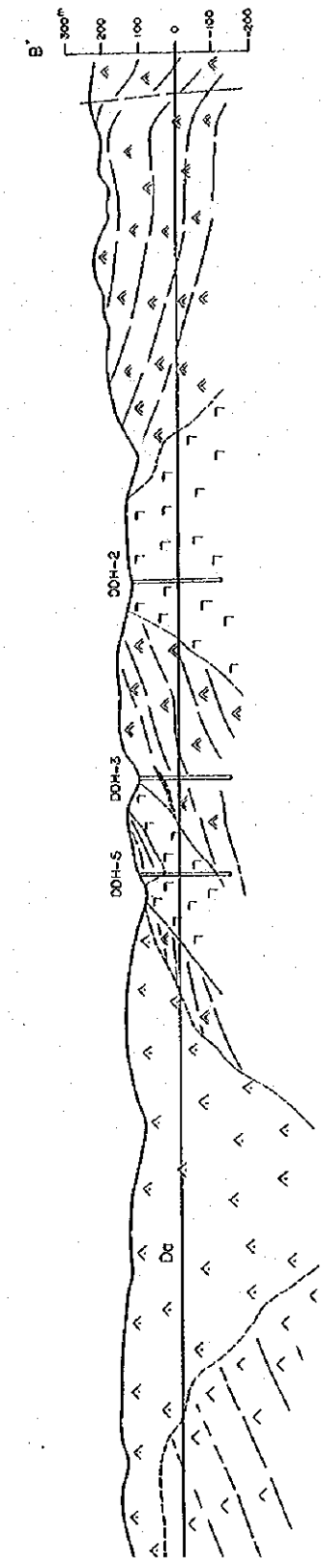
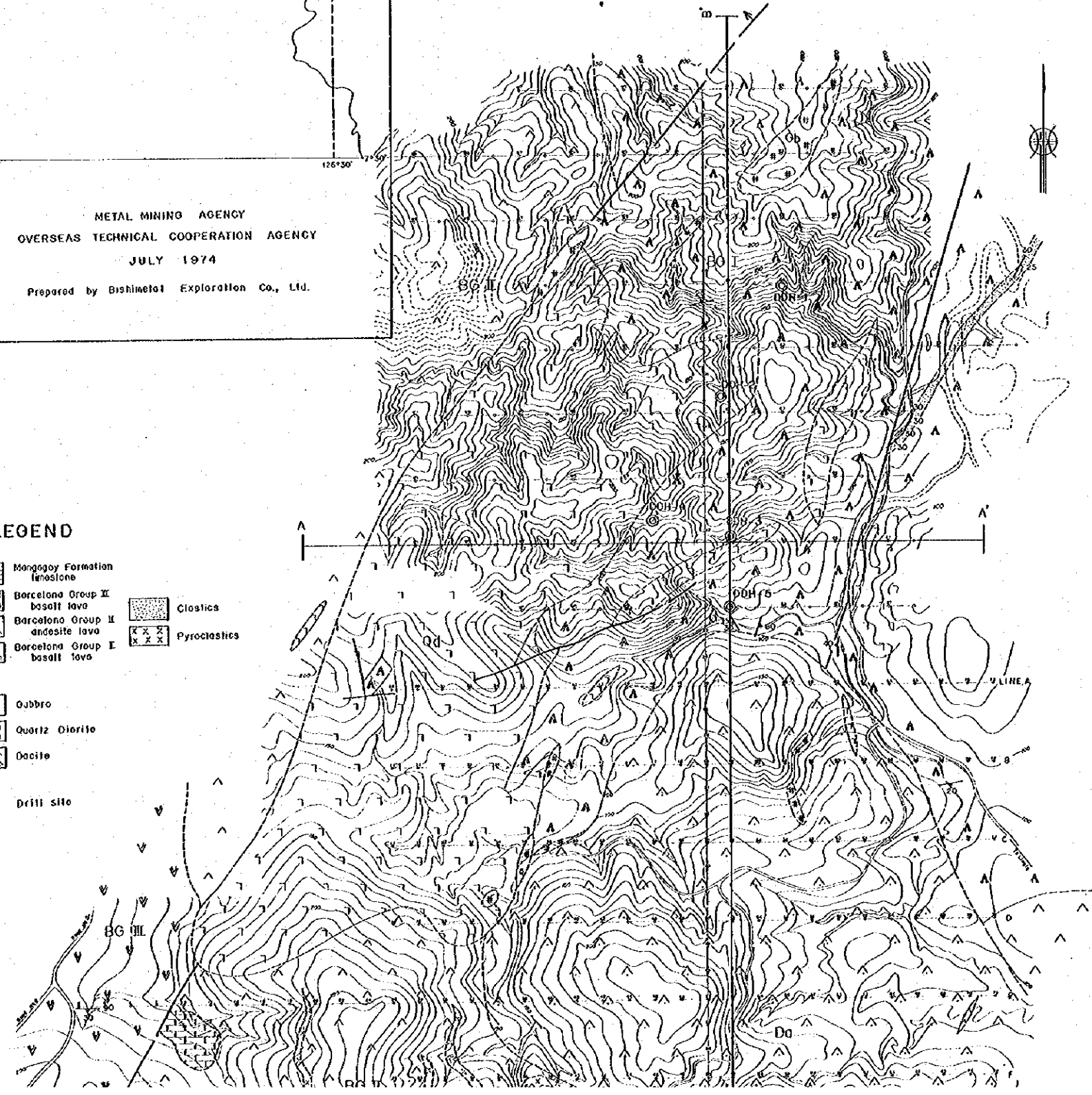
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







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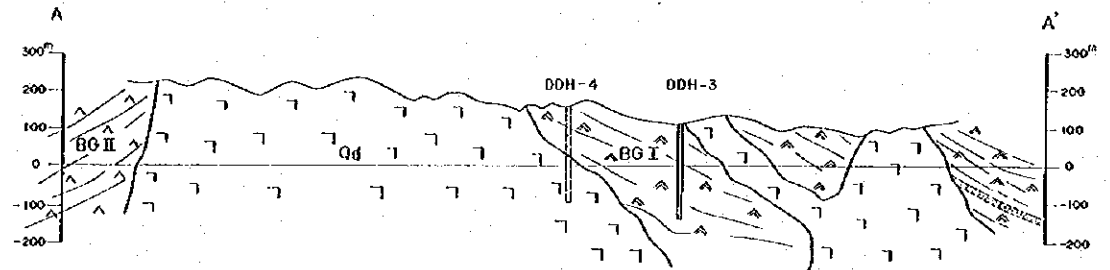
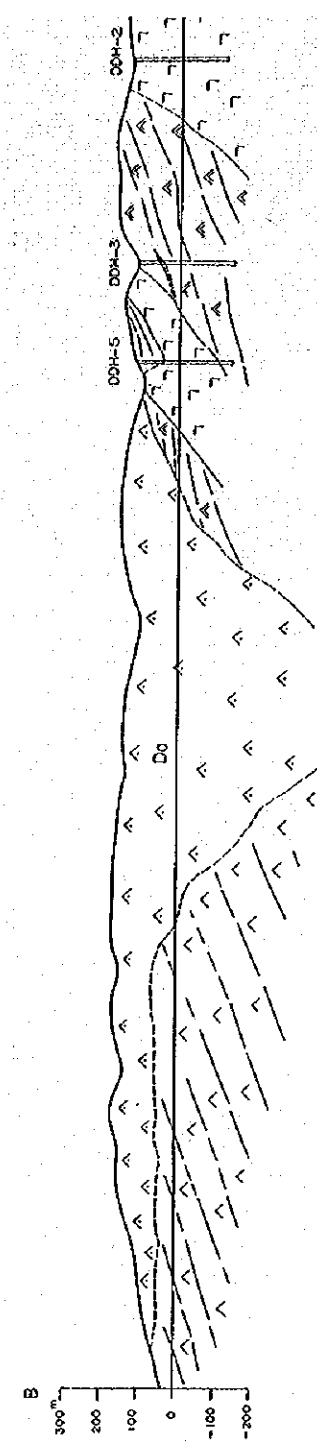
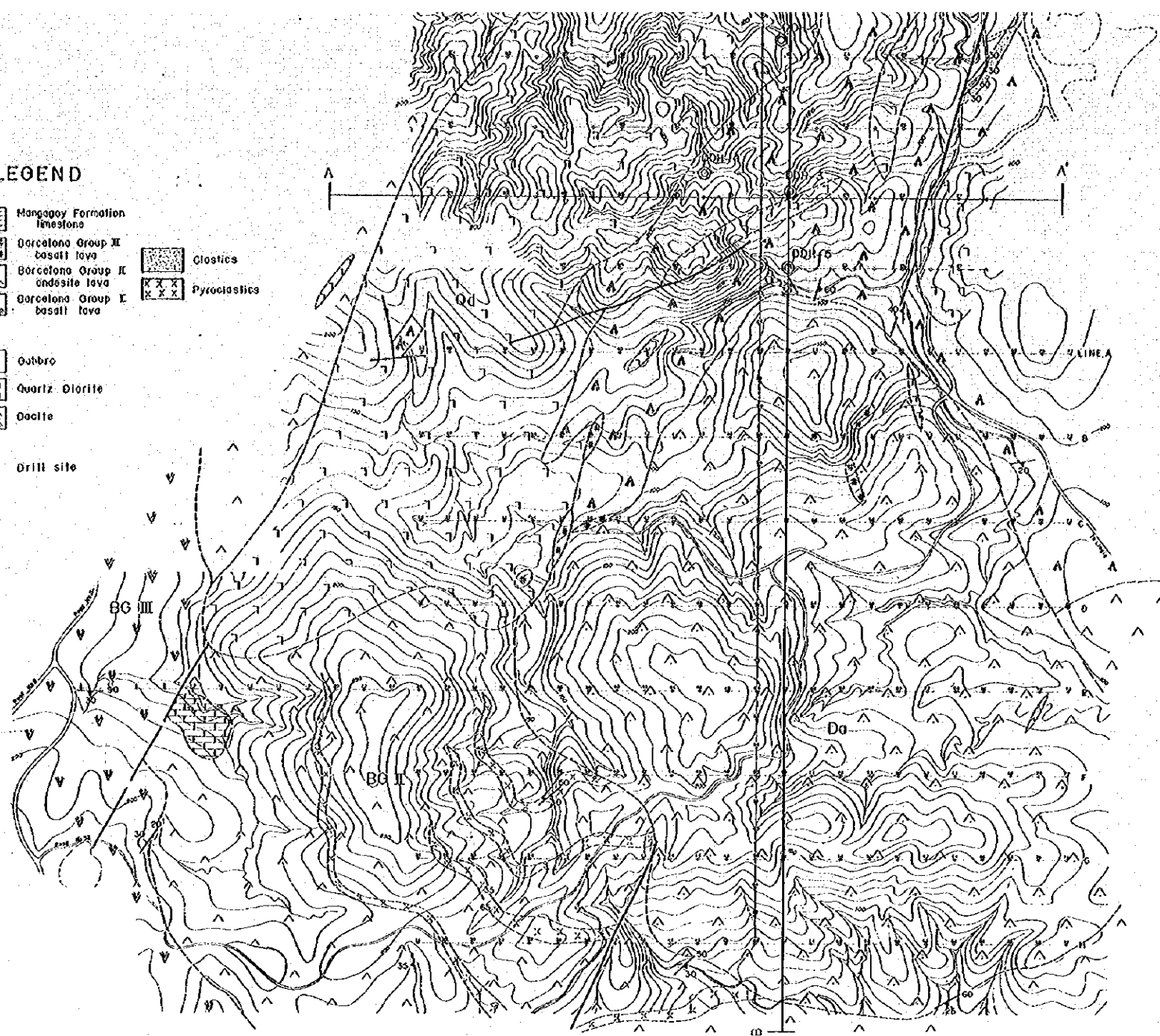
LEGEND

- Mongogoy Formation limestone
- Barcelona Group II basalt lava
- Barcelona Group II andesite lava
- Barcelona Group I basalt lava
- Clastics
- Pyroclastics
- Oubbro
- Quartz Diorite
- Dacite
- Drill site



LEGEND

-  Mangogoy Formation limestone
-  Borcelona Group II basaltic lava
-  Borcelona Group II andesite lava
-  Borcelona Group I basaltic lava
-  Clastics
-  Pyroclastics
-  Ouhbro
-  Quartz Diorite
-  Dacite
-  Drill site

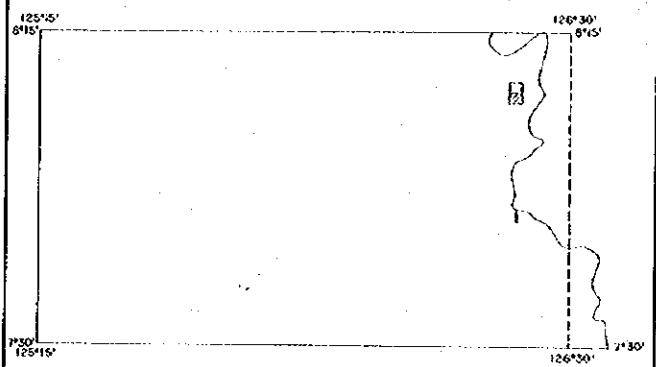
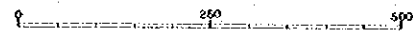


GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION

OF
EASTERN MINDANAO

ROUT AND ROCK SAMPLE MAP
OF
THE BISLIG AREA

Scale 1: 5,000

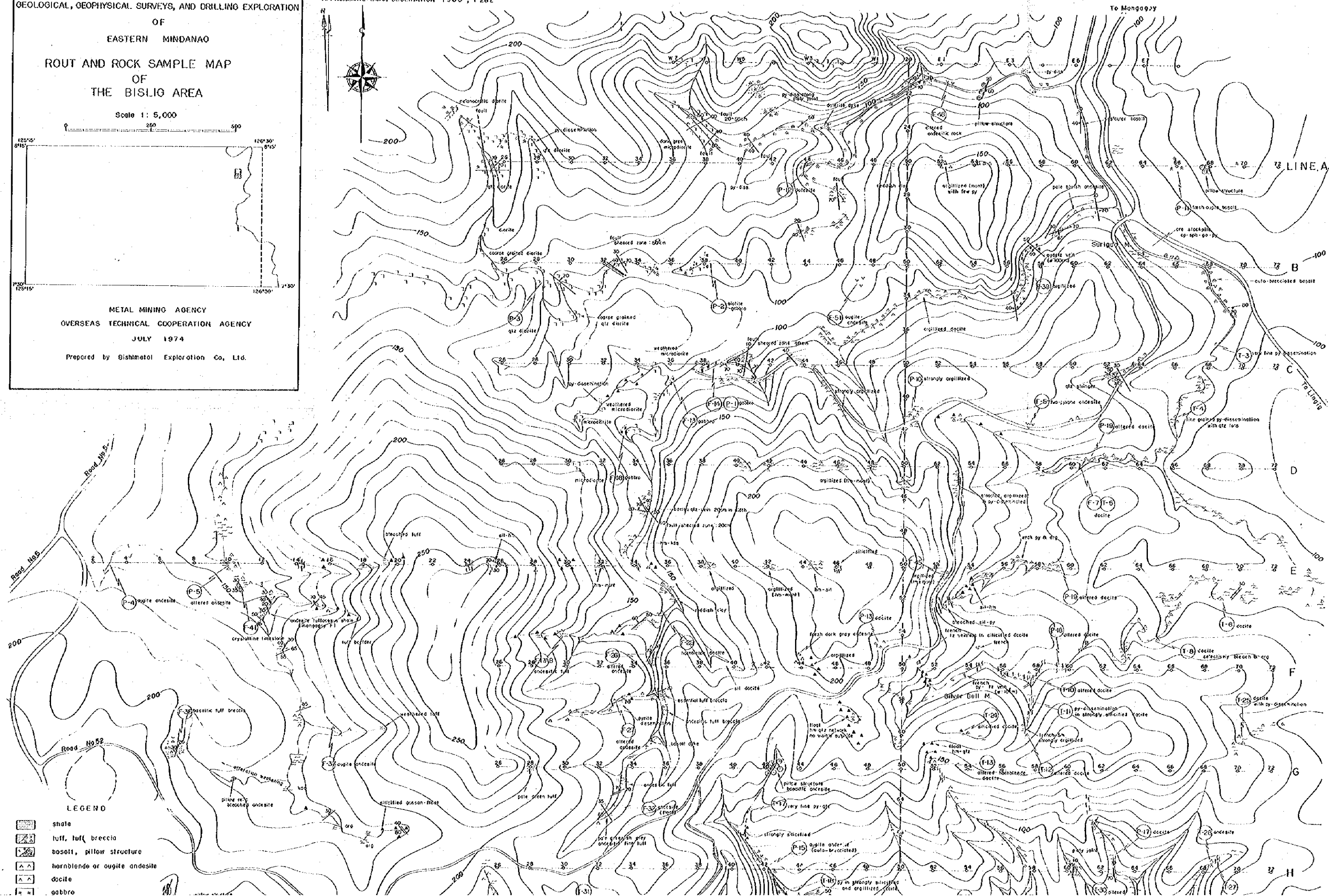
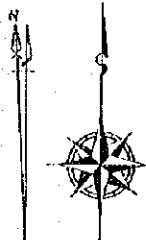


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

Prepared by Gishimetal Exploration Co., Ltd.

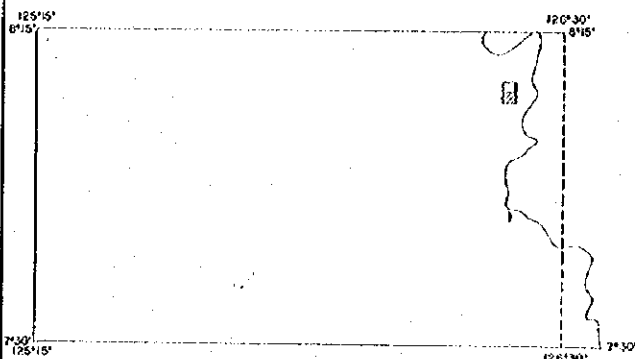
APPROXIMATE MEAN DECLINATION 1960, 1°28'E



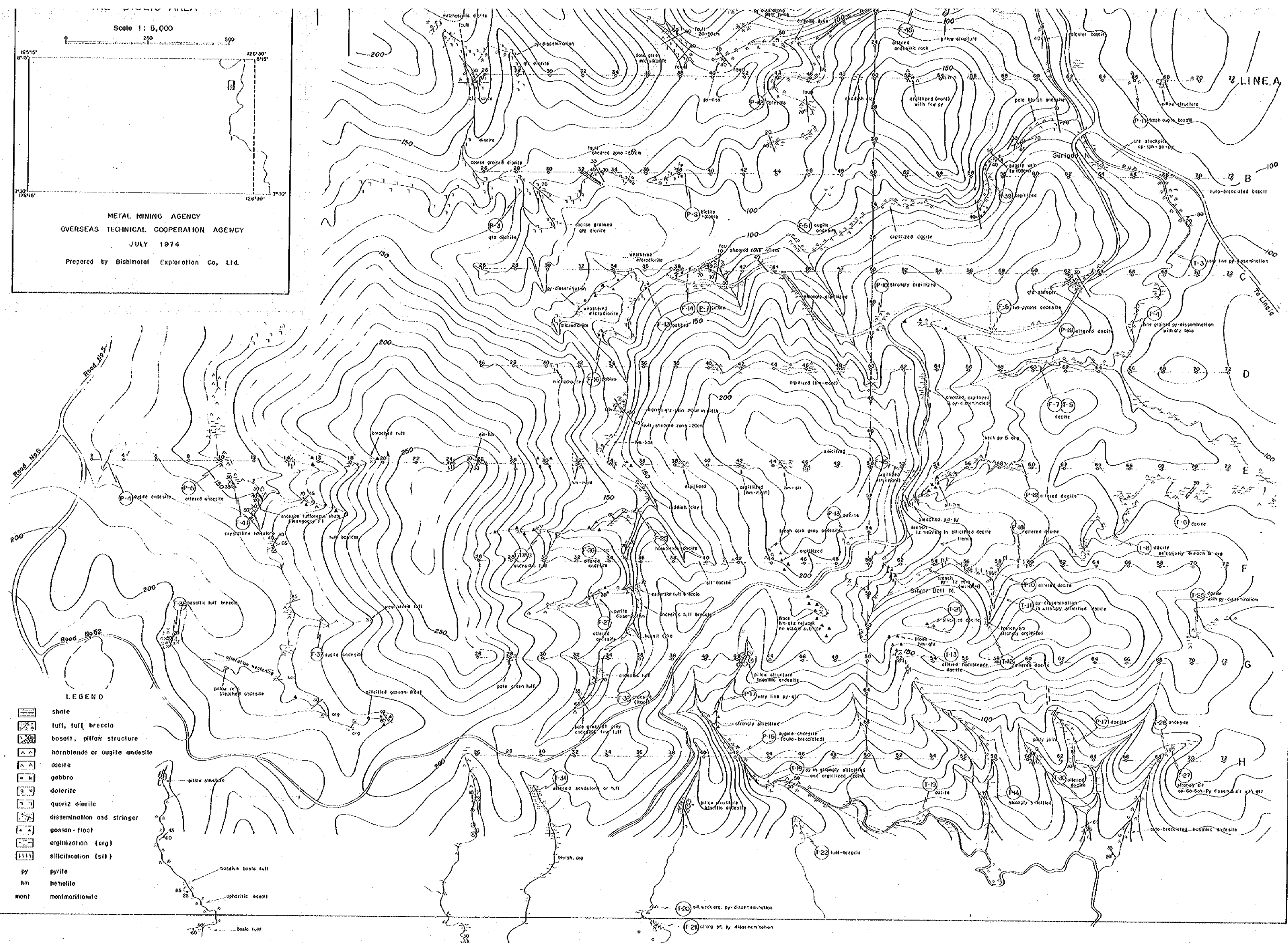
LEGEND

- shale
- tuff, tuff breccia
- basalt, pillow structure
- hornblende or augite andesite
- dacite
- gabbro

Scale 1:5,000



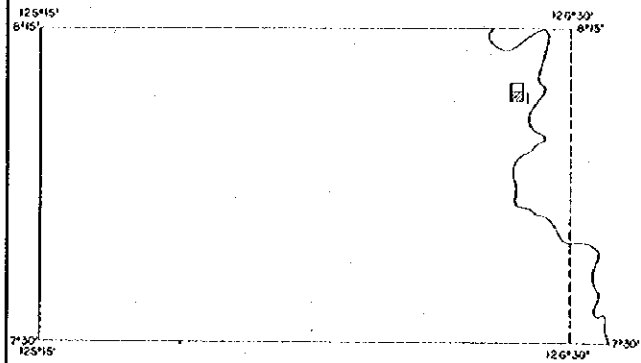
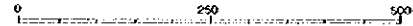
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
Prepared by Bishmetal Exploration Co., Ltd.



- LEGEND**
- shale
 - tuff, tuff breccia
 - basalt, pillow structure
 - hornblende or augite andesite
 - dacite
 - gabbro
 - dolerite
 - quartz diorite
 - dissemination and stringer
 - gossan float
 - argillization (arg)
 - silicification (sil)
 - pyrite
 - hematite
 - monmorillonite

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO
RESULTS OF GEOCHEMICAL
SOIL SURVEY FOR Cu

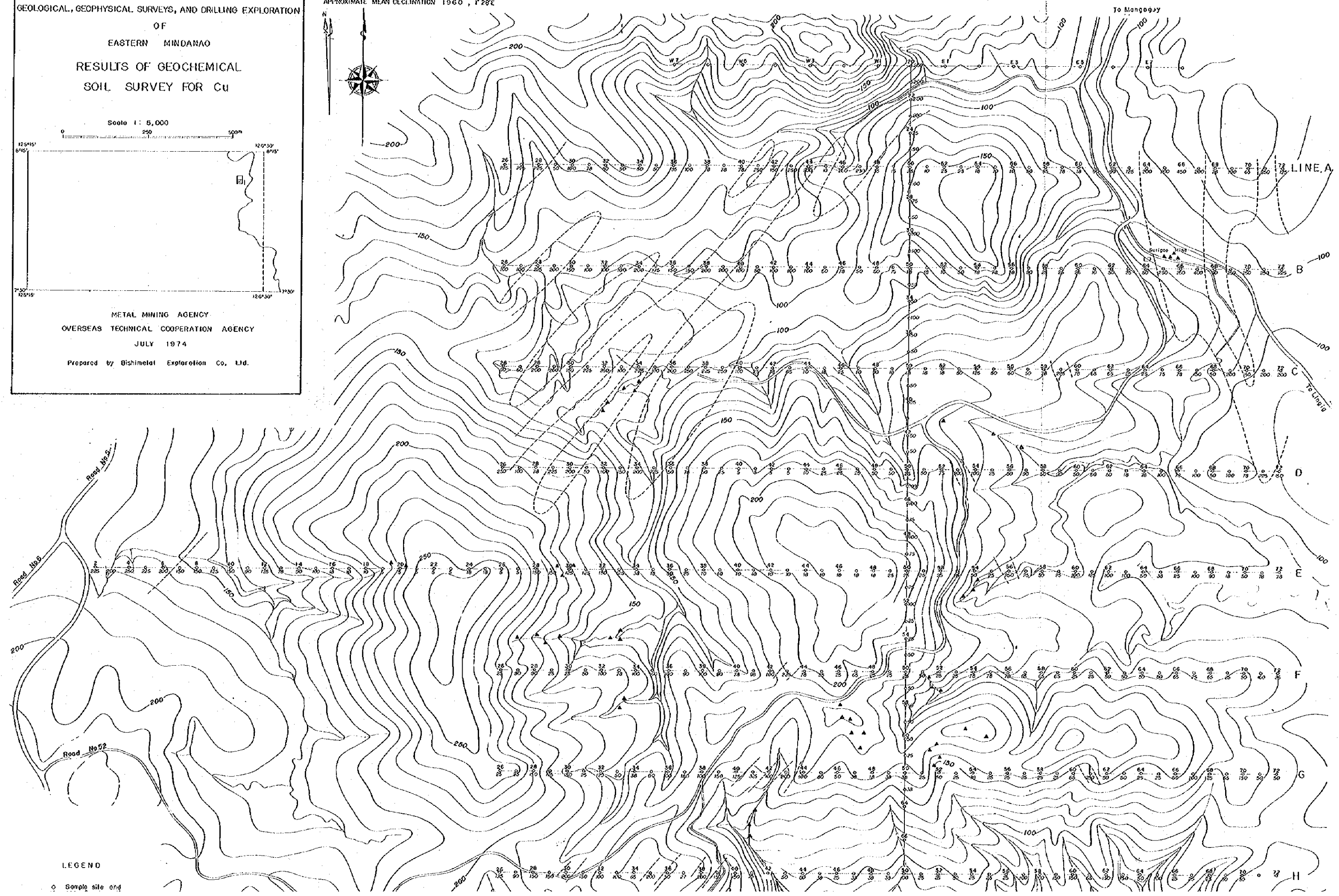
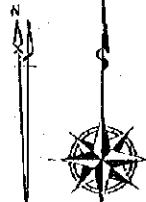
Scale 1:5,000



METAL MINING AGENCY
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JULY 1974

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APPROXIMATE MEAN DECLINATION 1960, 1°28'E

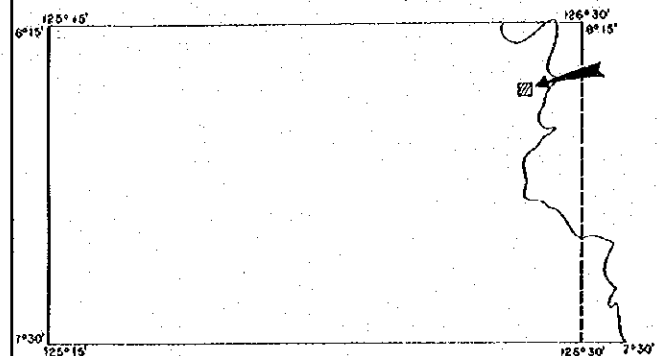
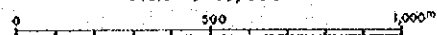


LEGEND

○ Sample site and

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO
COMPILATION MAP OF DETAILED SURVEY RESULTS
OF THE BISLIG AREA

Scale 1:10,000



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LEGEND

Geochemical anomaly

Cu 300ppm
 200ppm

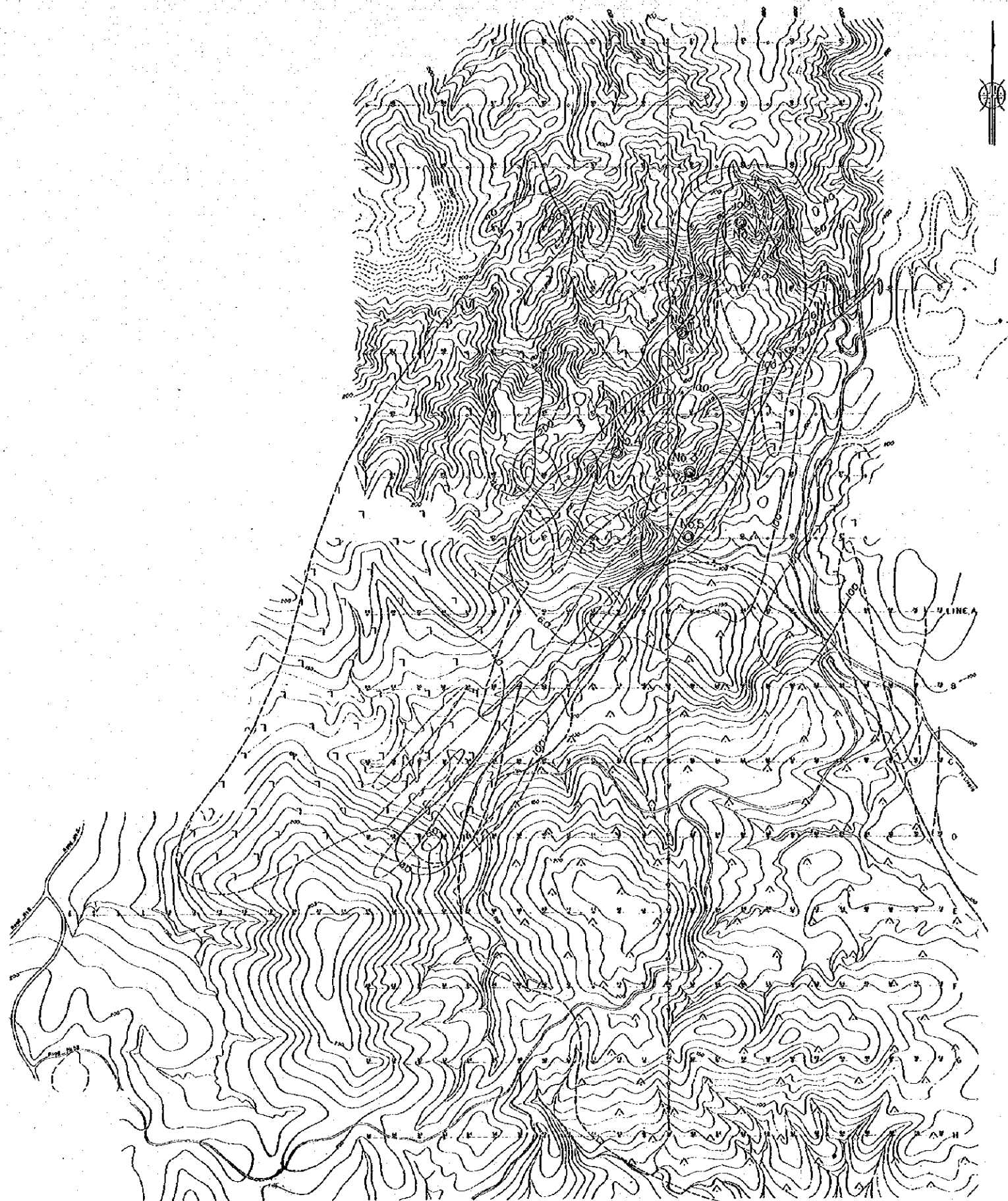
Geophysical anomaly

Fe%
f(nm) -----

Dioritic rocks

Dacite

Geophysical survey line



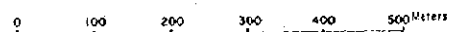
PL. II-1

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION

OF
EASTERN MINDANAO

TOPOGRAPHIC MAP OF THE BISLIG AREA

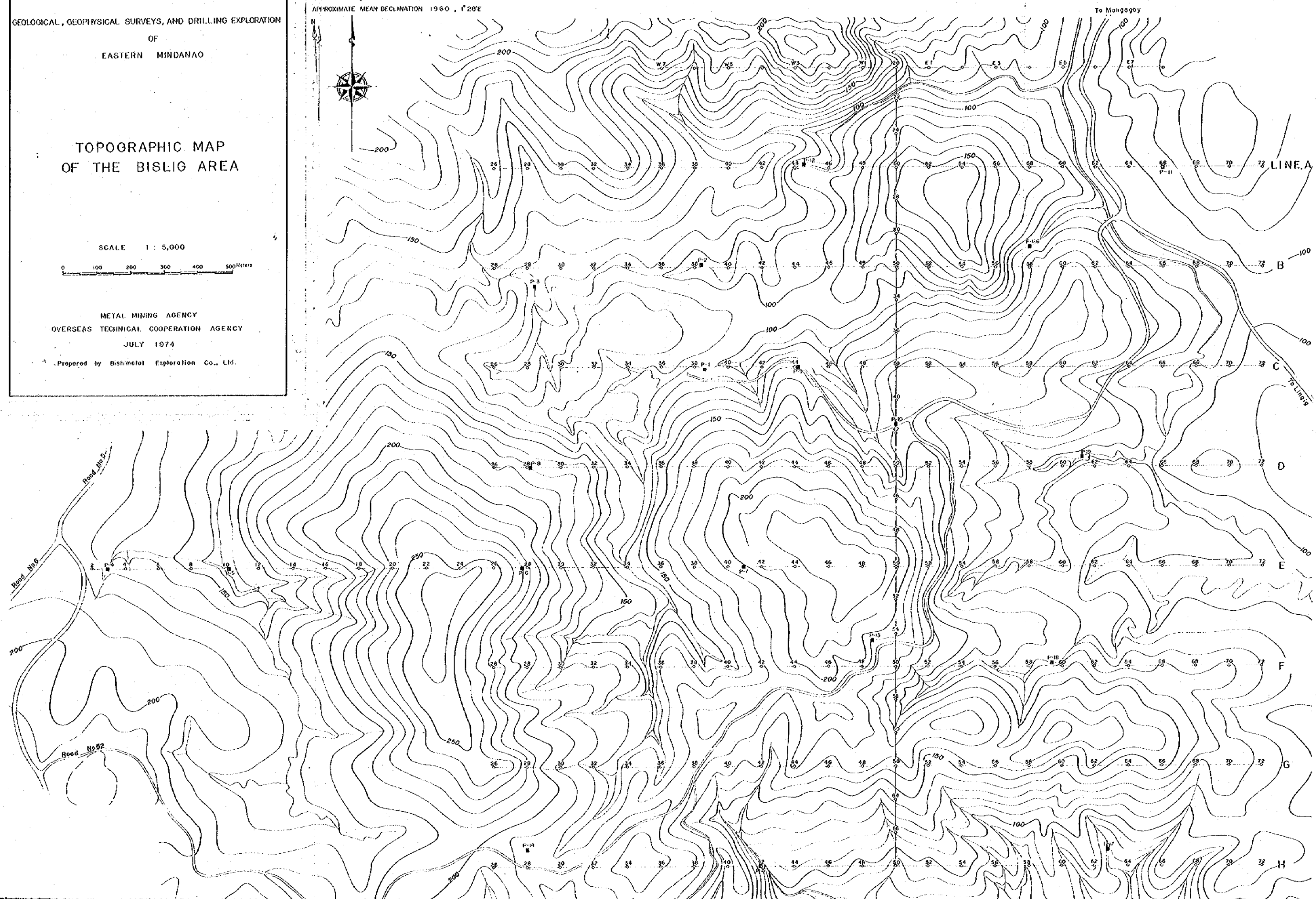
SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
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APPROXIMATE MEAN DECLINATION 1960, 1°28'E



To Monggoby

LINE A

B

C

D

E

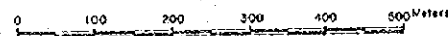
F

G

H

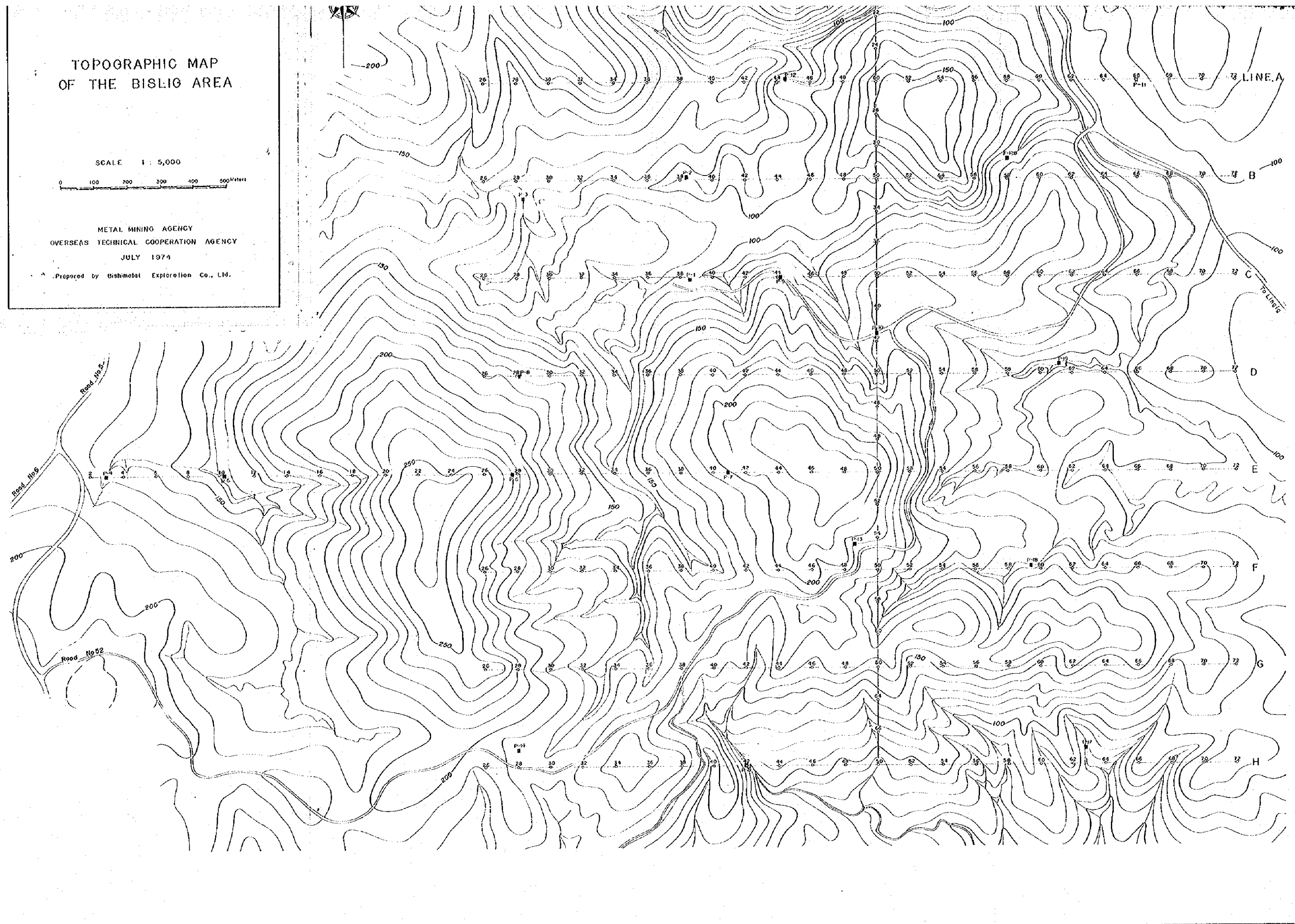
TOPOGRAPHIC MAP OF THE BISLIG AREA

SCALE 1 : 5,000



METAL MINING AGENCY
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JULY 1974

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PL. II - 2

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - A

SCALE 1 : 5,000

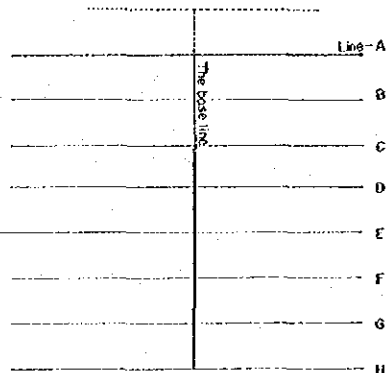


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

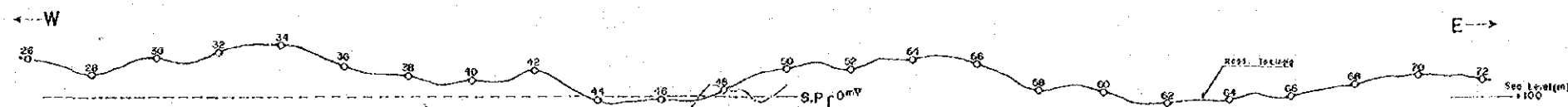
Prepared by Bishmetal Exploration Co., Ltd.

LOCATION OF LINE-A

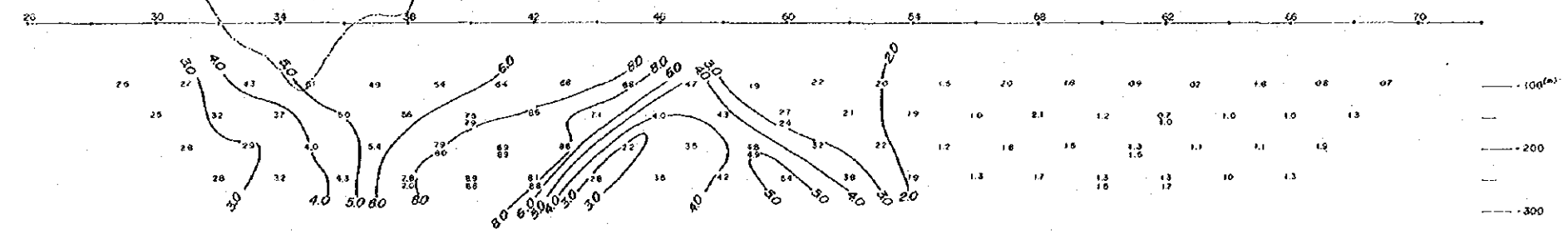


Scale 1 : 25,000

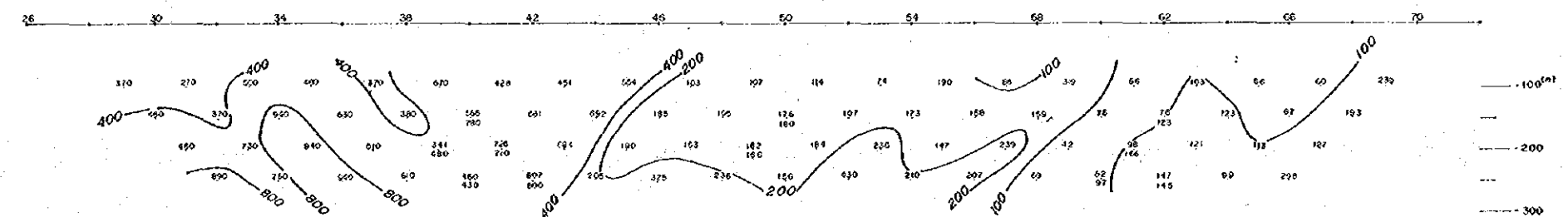
Topographic Profile



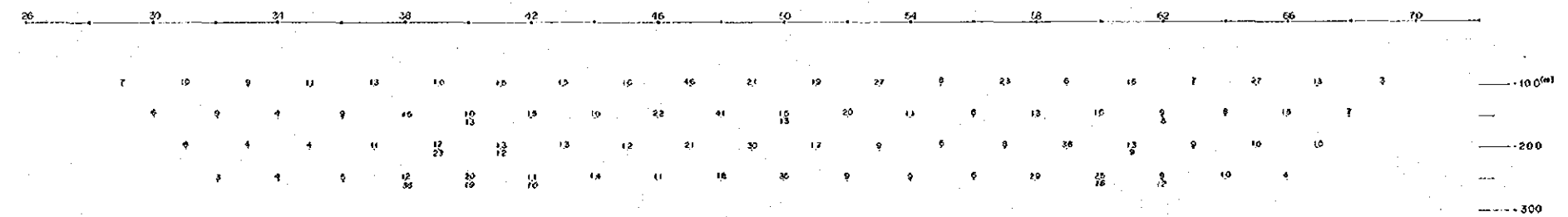
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in U/m

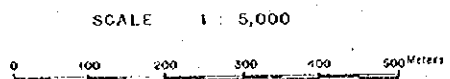


PL. II-3

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

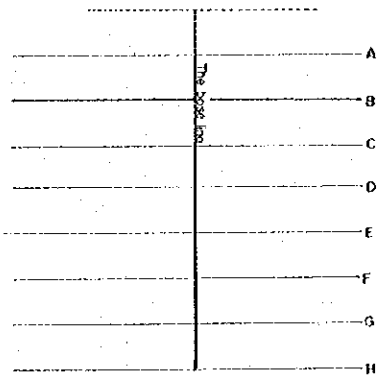
LINE - B



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

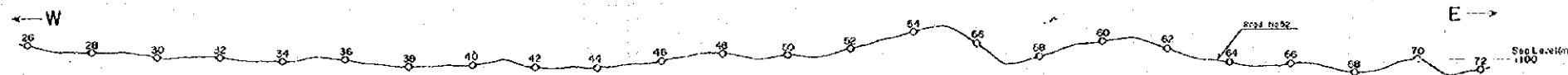
Prepared by Bishimetal Exploration Co., Ltd.

LOCATION OF LINE-B

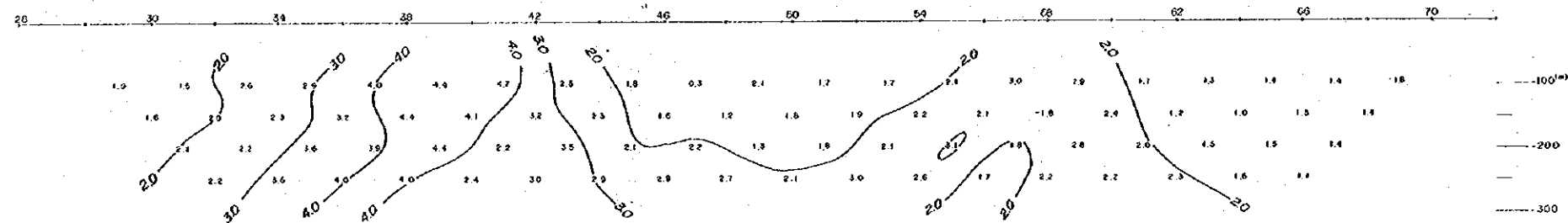


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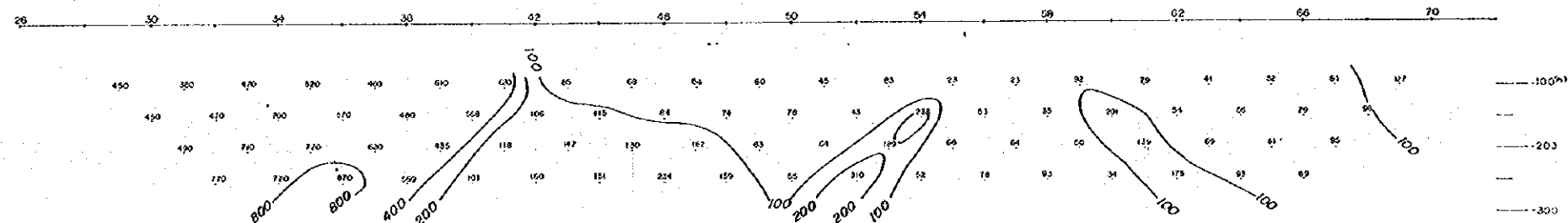
Topographic Profile



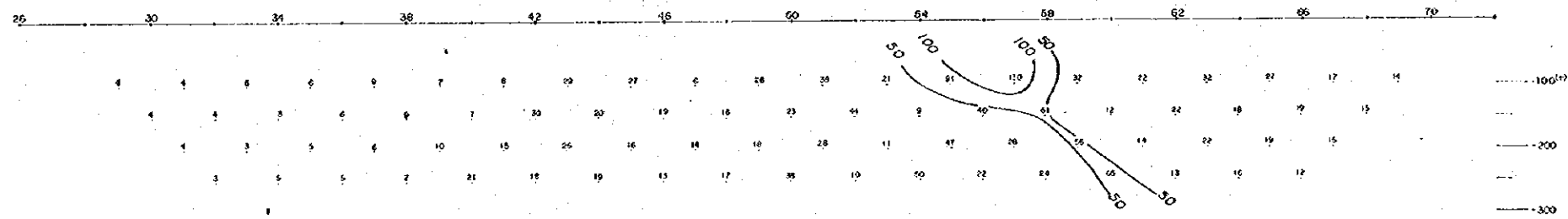
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in σ /m



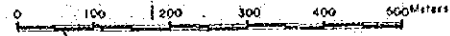
PL. II - 4

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - C

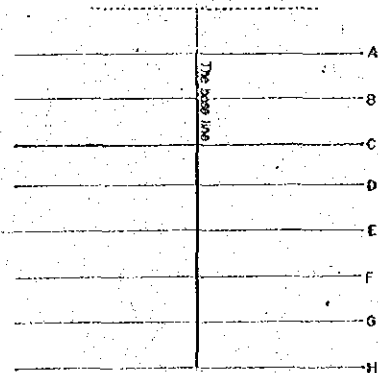
SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

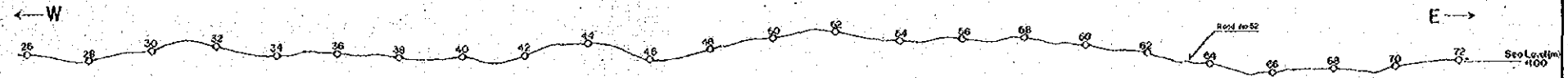
Prepared by Gishimetal Exploration Co., Ltd.

LOCATION OF LINE-C

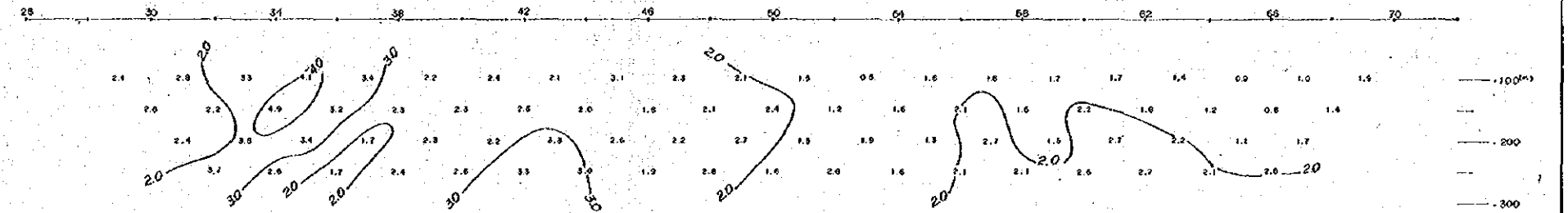


Scale 1 : 25,000

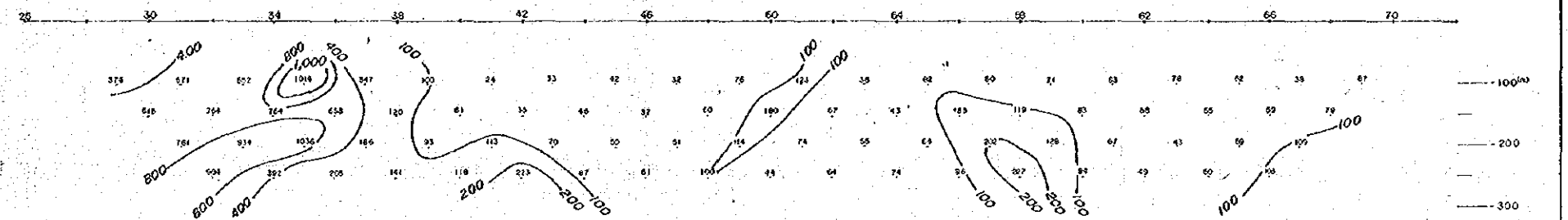
Topographic Profile



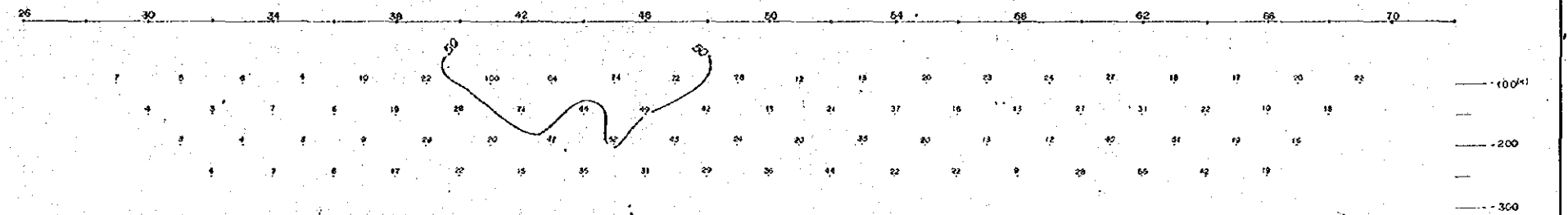
Frequency Effects in %



Apparent Resistivity in $\Omega - m$



Metal Conduction Factor in $\% / m$



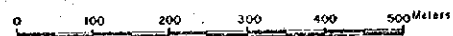
PL. II - 5

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - D

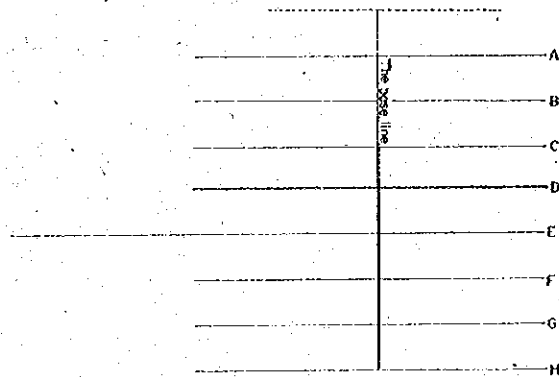
SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

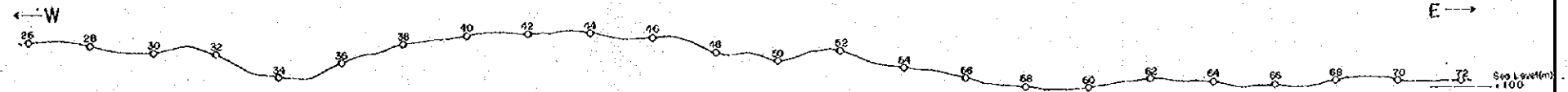
Prepared by Bishimetal Exploration Co., Ltd.

LOCATION OF LINE-D

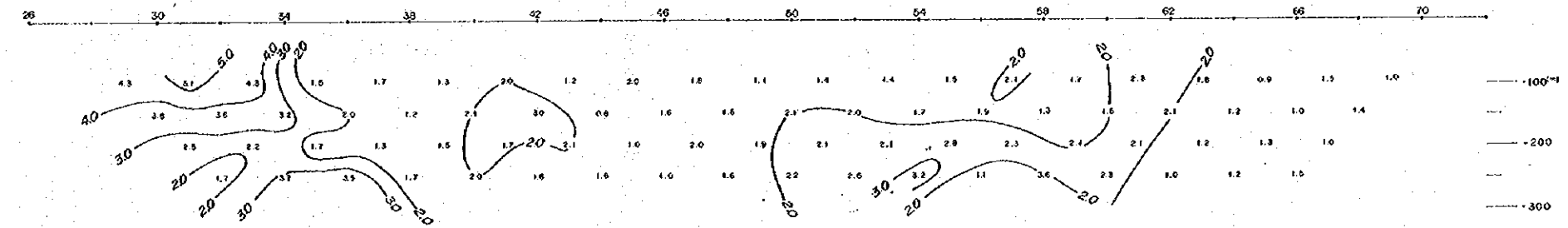


Scale 1:25,000

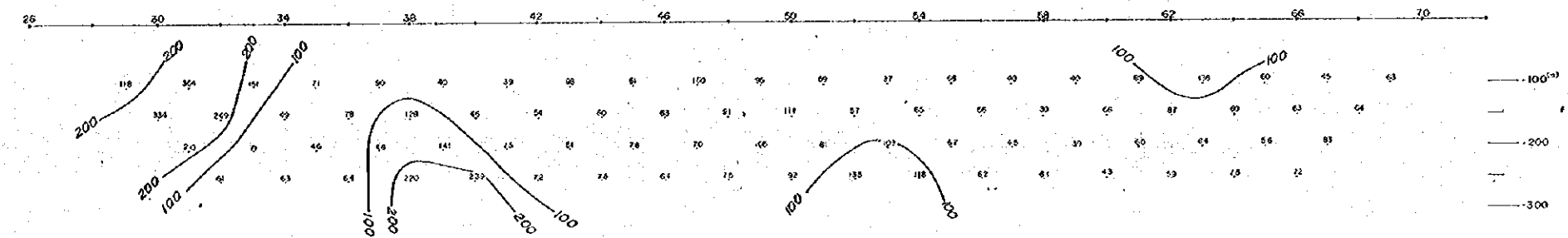
Topographic Profile



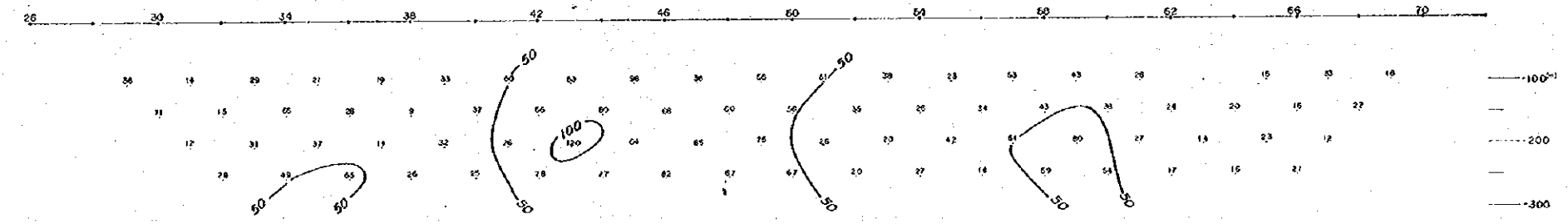
Frequency Effects in %



Apparent Resistivity in $\Omega\text{-m}$



Metal Conduction Factor in μ/m



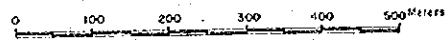
PL. II-6

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - E

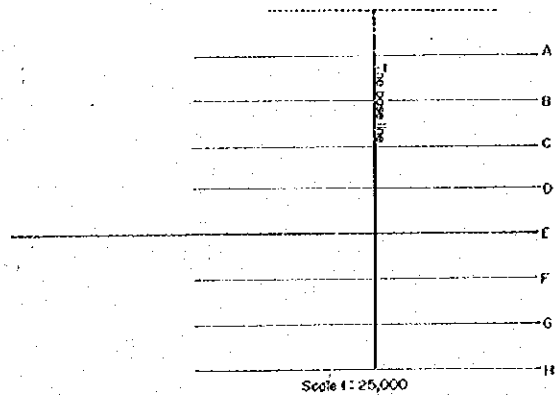
SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Dishmetal Exploration Co., Ltd.

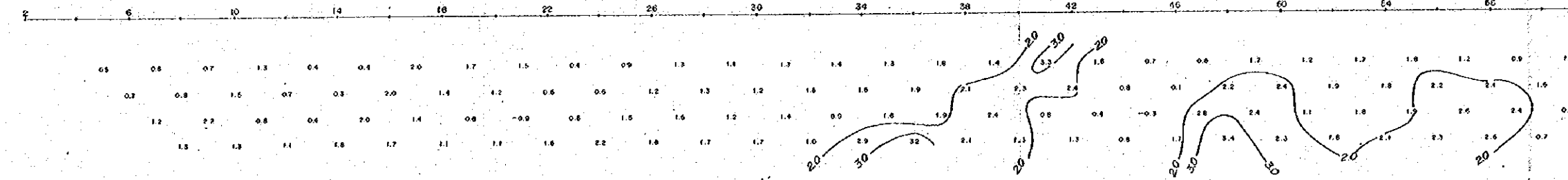
LOCATION OF LINE-E



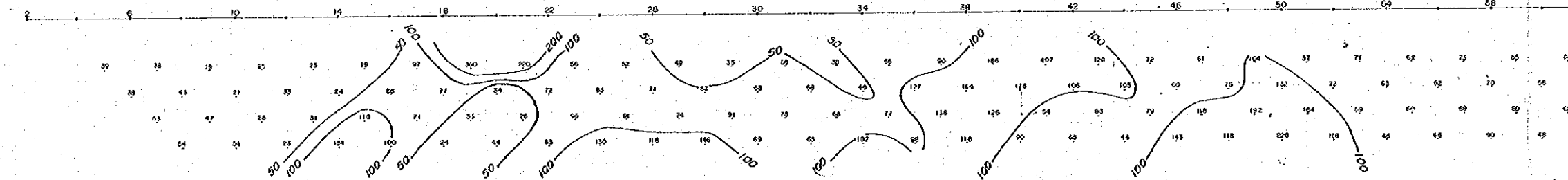
Topographic Profile



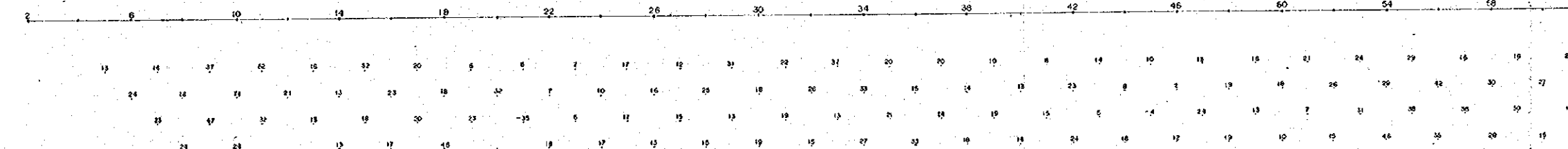
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in μ /m

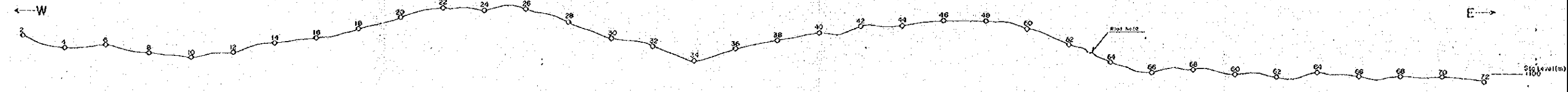


IL-6

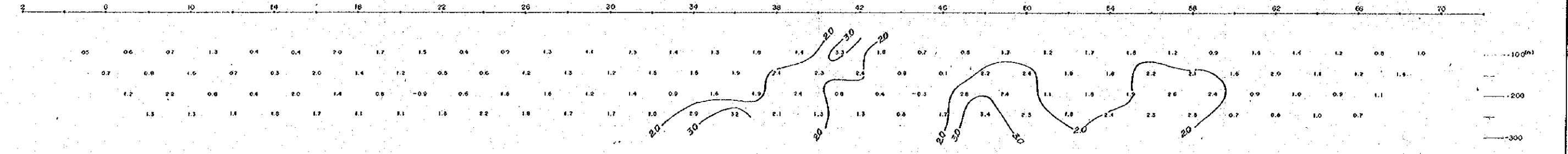
PLORATION

FILE
A

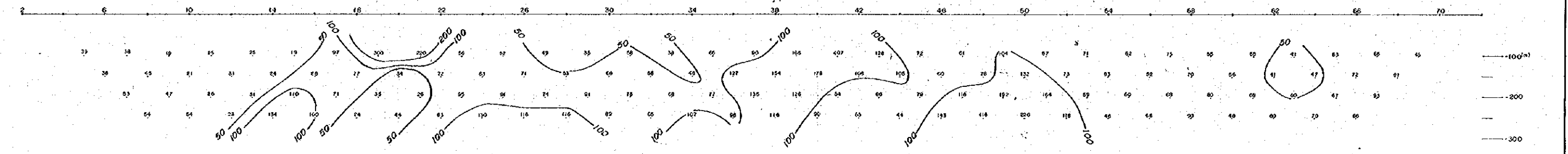
Topographic Profile



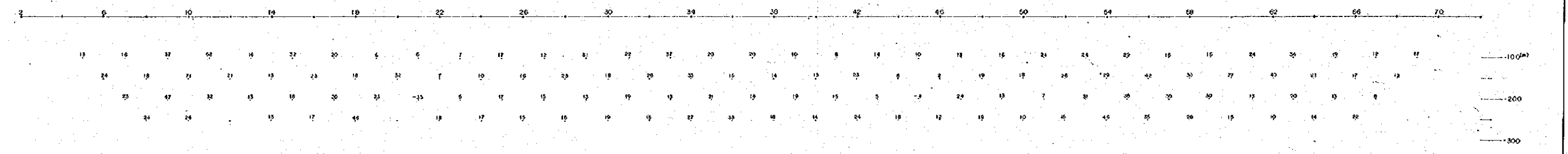
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in σ /m



A
B
C
D
E
F
G
H

PL. II - 7

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - F

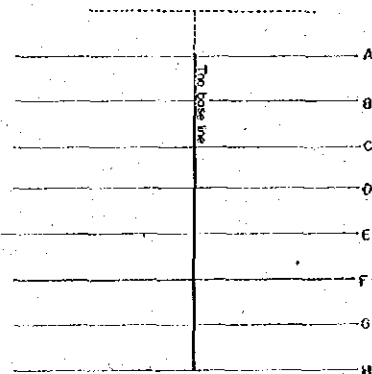
SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

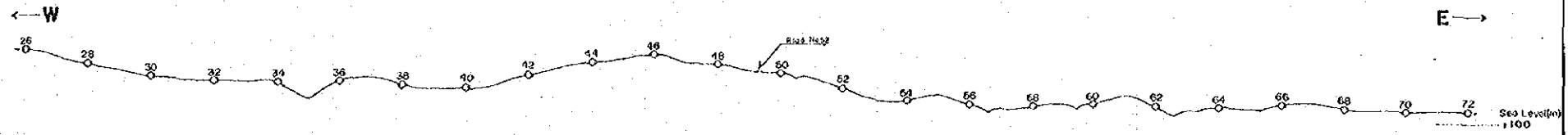
Prepared by Bishimetal Exploration Co., Ltd.

LOCATION OF LINE-F

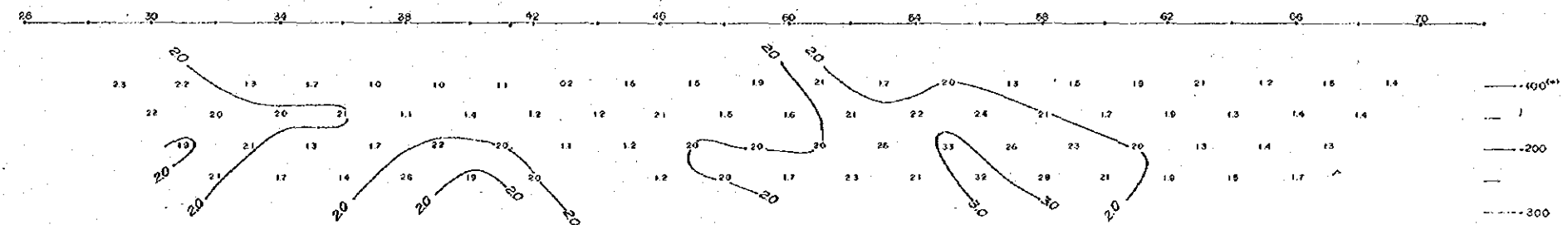


Scale 1 : 25,000

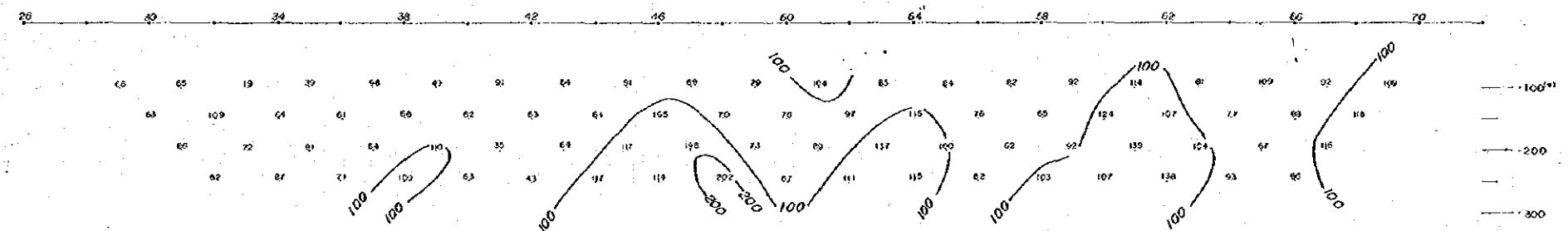
Topographic Profile



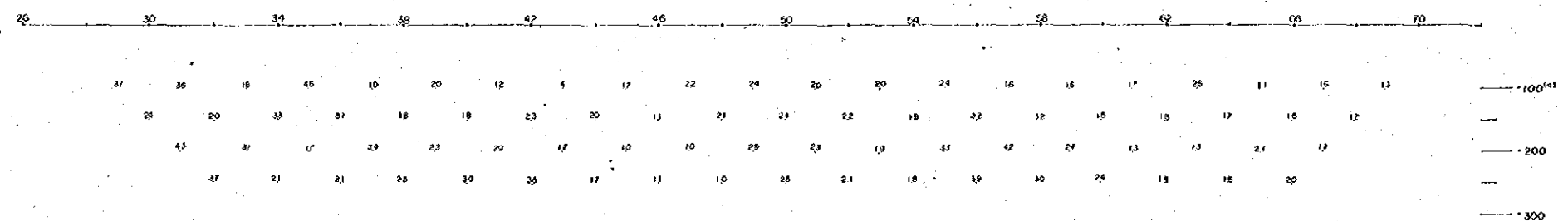
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in μ /m



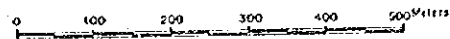
PL. II - 8

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

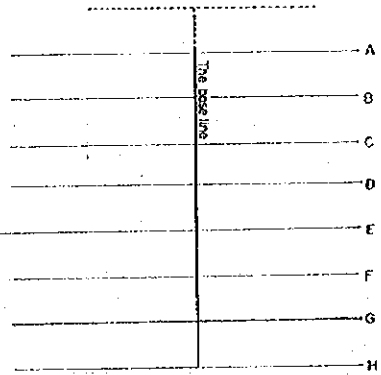
LINE - G

SCALE 1 : 5,000



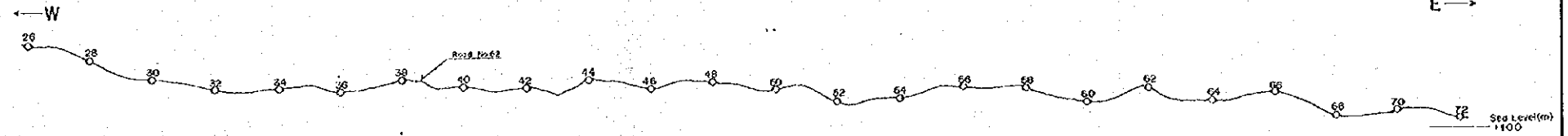
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
Prepared by Bishimetal Exploration Co., Ltd.

LOCATION OF LINE-G

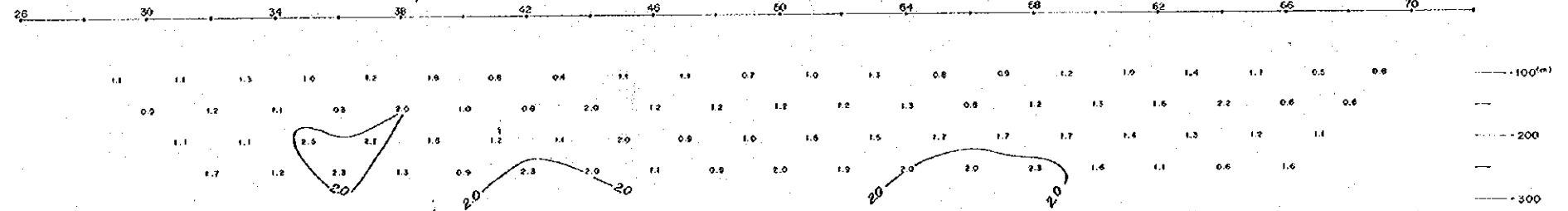


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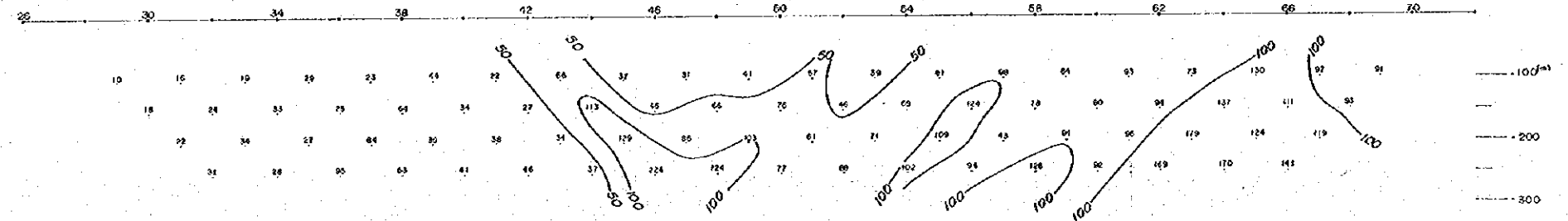
Topographic Profile



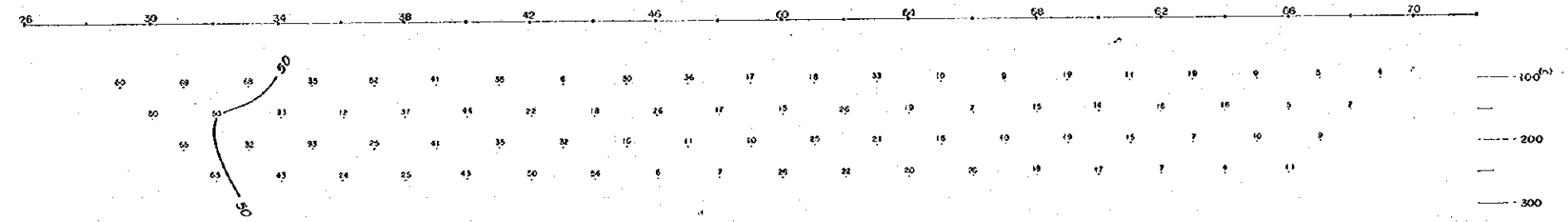
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in μ /m



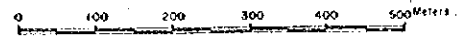
PL. II-9

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

LINE - H

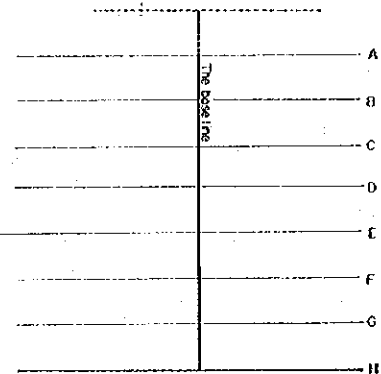
SCALE 1 : 5,000



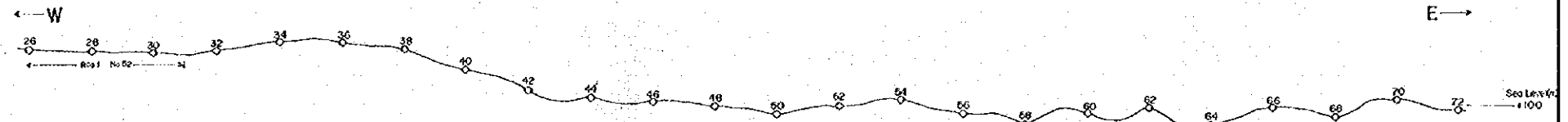
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimetal Exploration Co., Ltd.

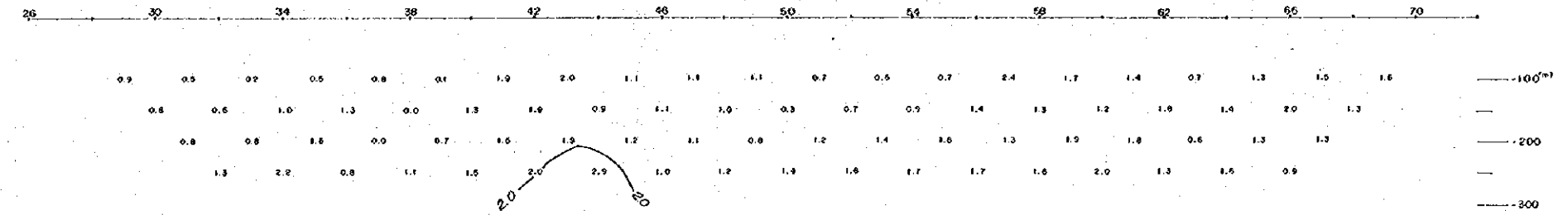
LOCATION OF LINE-H



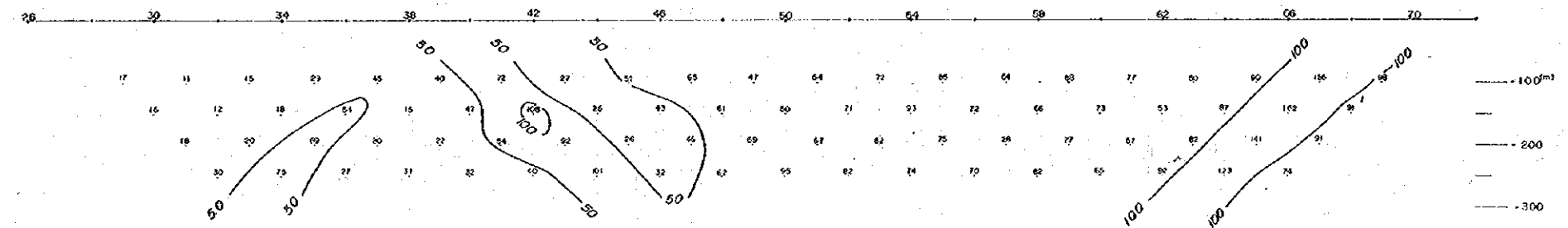
Topographic Profile



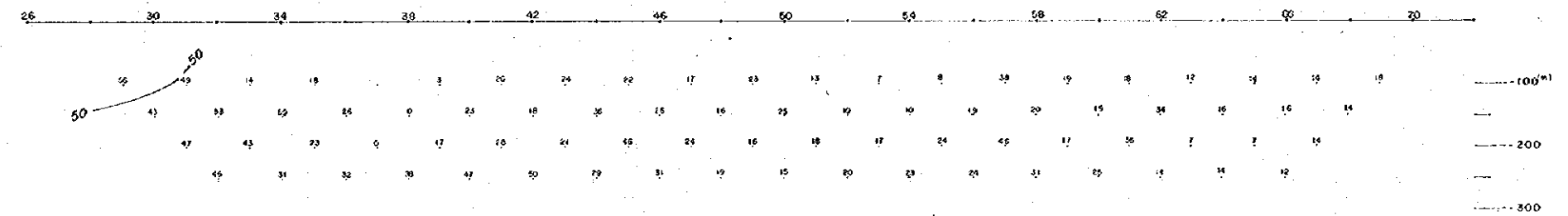
Frequency Effects in %



Apparent Resistivity in $\Omega\text{-m}$



Metal Conduction Factor in U/m



PL. II-10

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

INDUCED POLARIZATION PROFILE
MAP OF THE BISLIG AREA

BASE - LINE

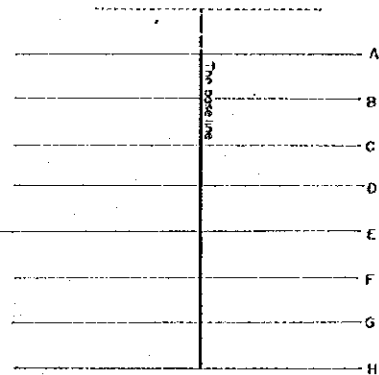
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METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

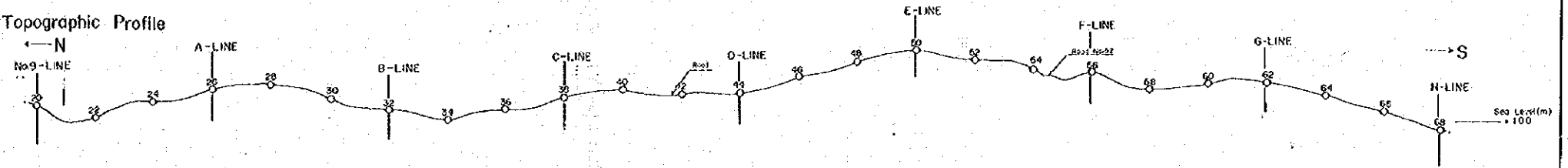
Prepared by Bishimetal Exploration Co., Ltd.

LOCATION OF BASE-LINE

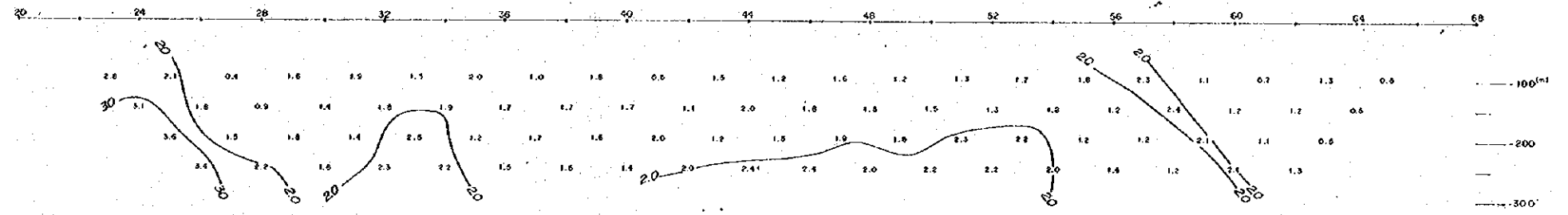


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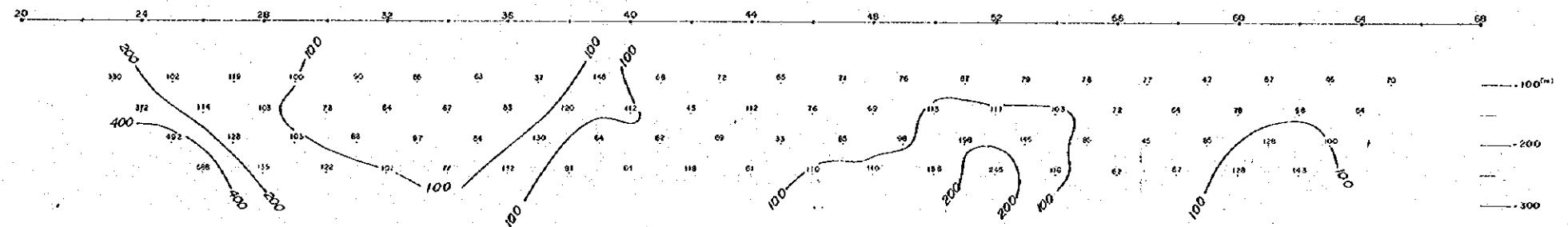
Topographic Profile



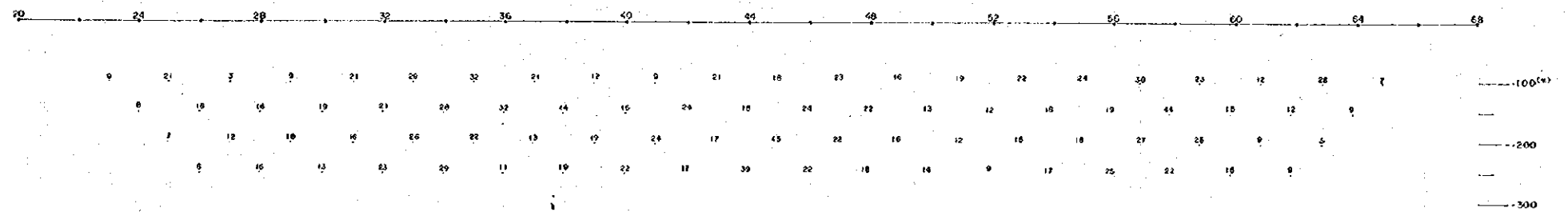
Frequency Effects in %



Apparent Resistivity in Ω -m



Metal Conduction Factor in μ /m



GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

EQUI-FREQUENCY EFFECT MAP
OF THE BISLIG AREA
(-100m)

SCALE 1 : 5,000

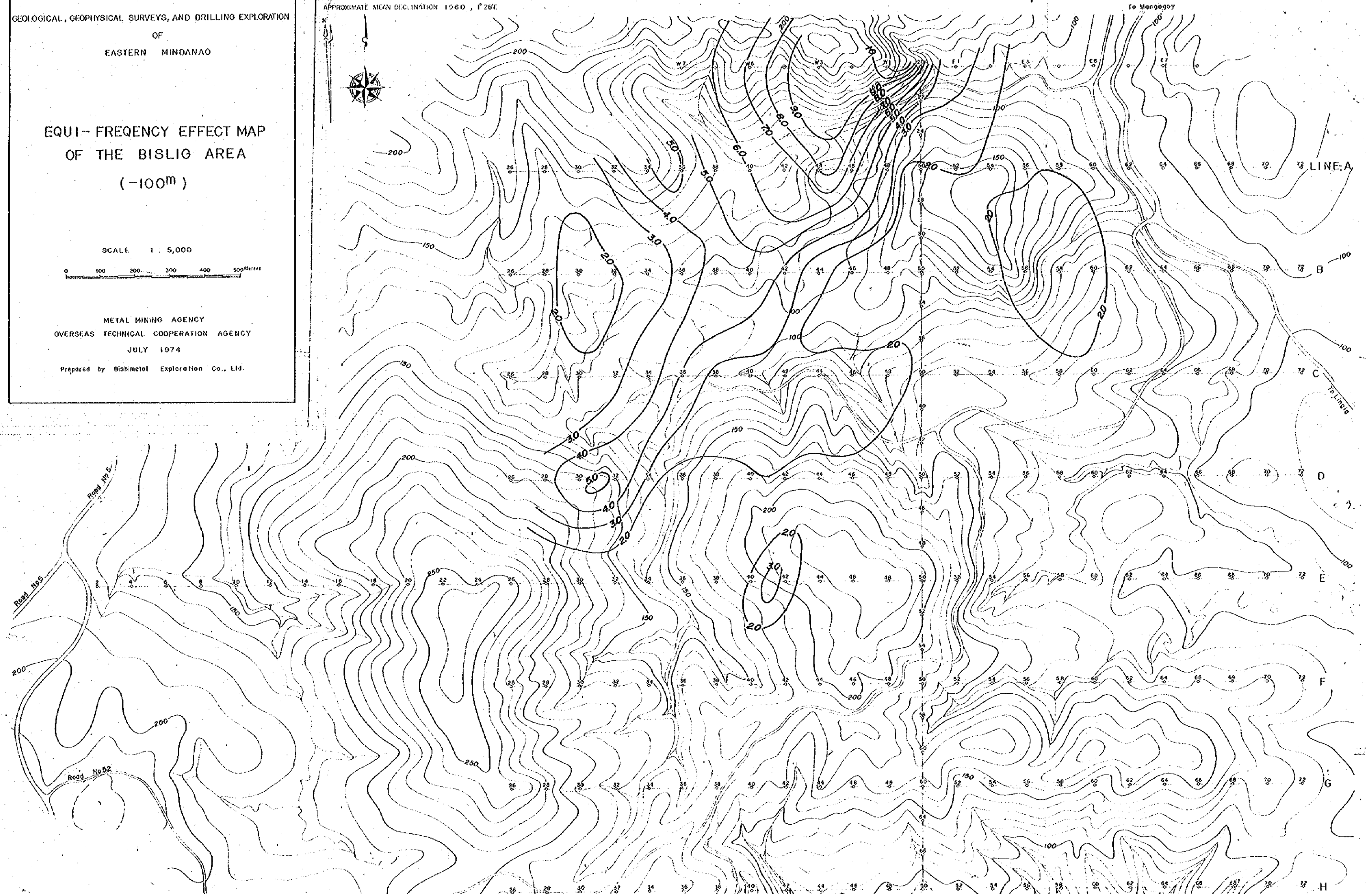
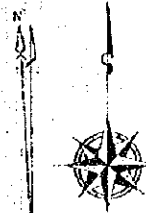


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

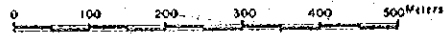
Prepared by Bishimetal Exploration Co., Ltd.

APPROXIMATE MEAN DECLINATION 1960, 1°28' E



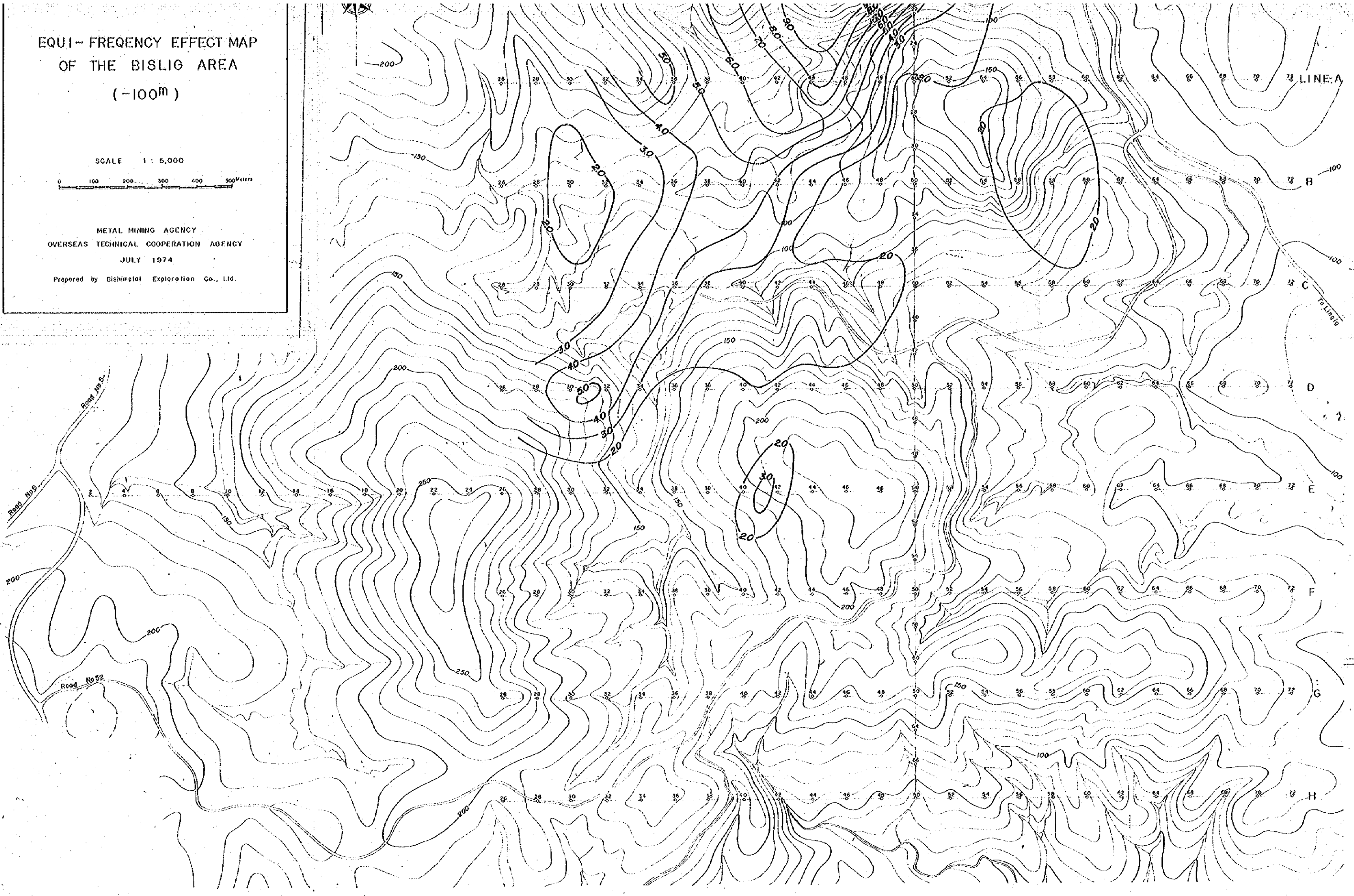
EQUI-FREQUENCY EFFECT MAP
OF THE BISLIG AREA
(-100m)

SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimelot Exploration Co., Ltd.



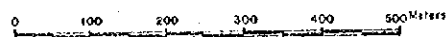
PL. II-12

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION

OF
EASTERN MINDANAO

EQUI-APPARENT RESISTIVITY MAP
OF THE BISLIG AREA
(-100m)

SCALE 1 : 5,000

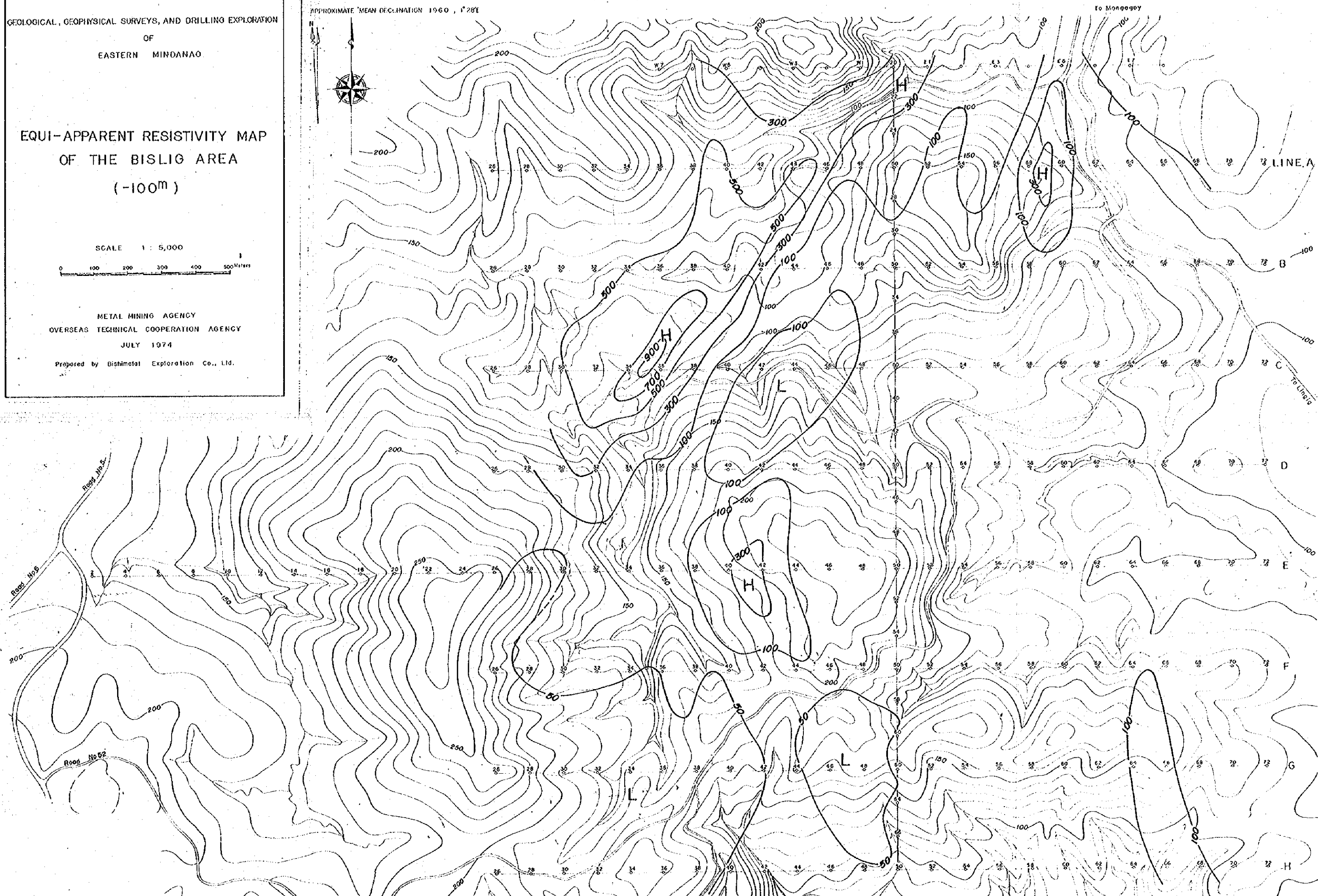
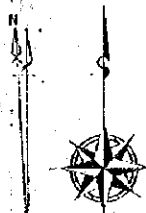


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

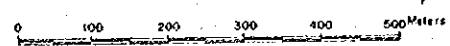
Prepared by Bishmetal Exploration Co., Ltd.

APPROXIMATE MEAN DECLINATION 1960, 1°28'E



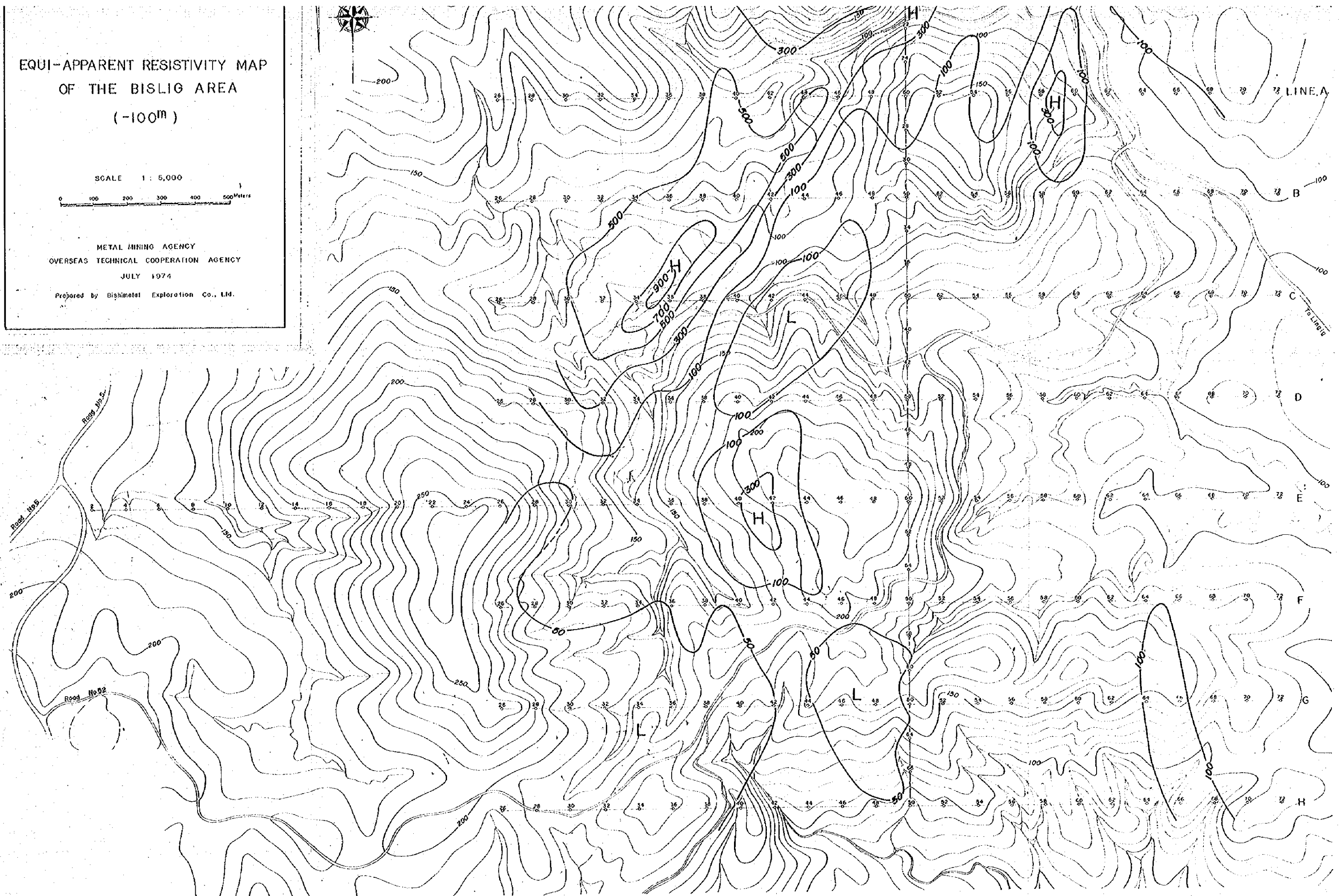
EQUI-APPARENT RESISTIVITY MAP
OF THE BISLIG AREA
(-100m)

SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishmetal Exploration Co., Ltd.



PL. II-13

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

GENERAL IP INTERPRETATION MAP

OF THE BISLIG AREA
(-100m)

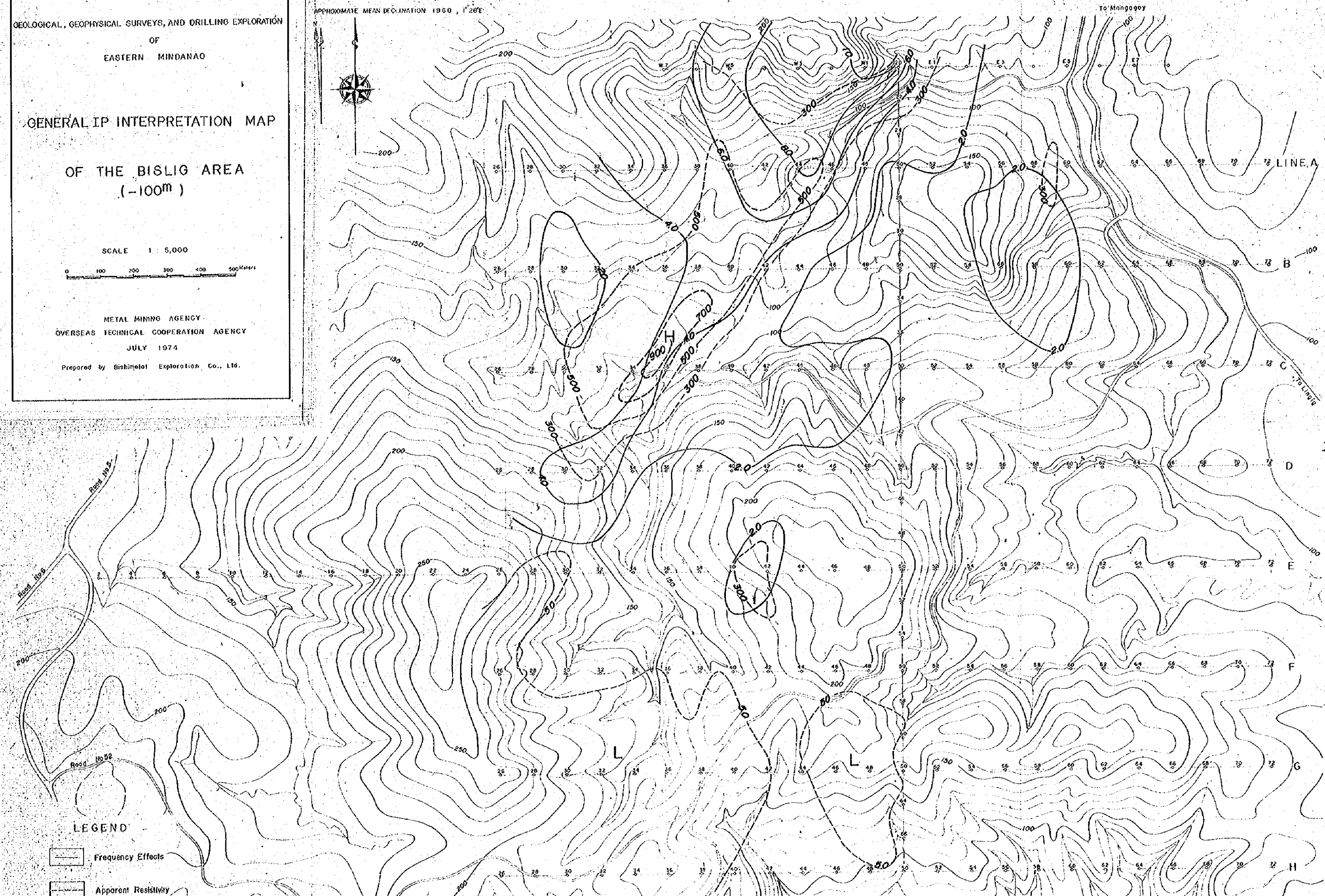
SCALE 1 : 5,000





METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimel Exploration Co., Ltd.

APPROXIMATE MEAN DECLINATION 1960, 1°28'E



LEGEND

-  Frequency Effects
-  Apparent Resistivity

GENERAL IP INTERPRETATION MAP

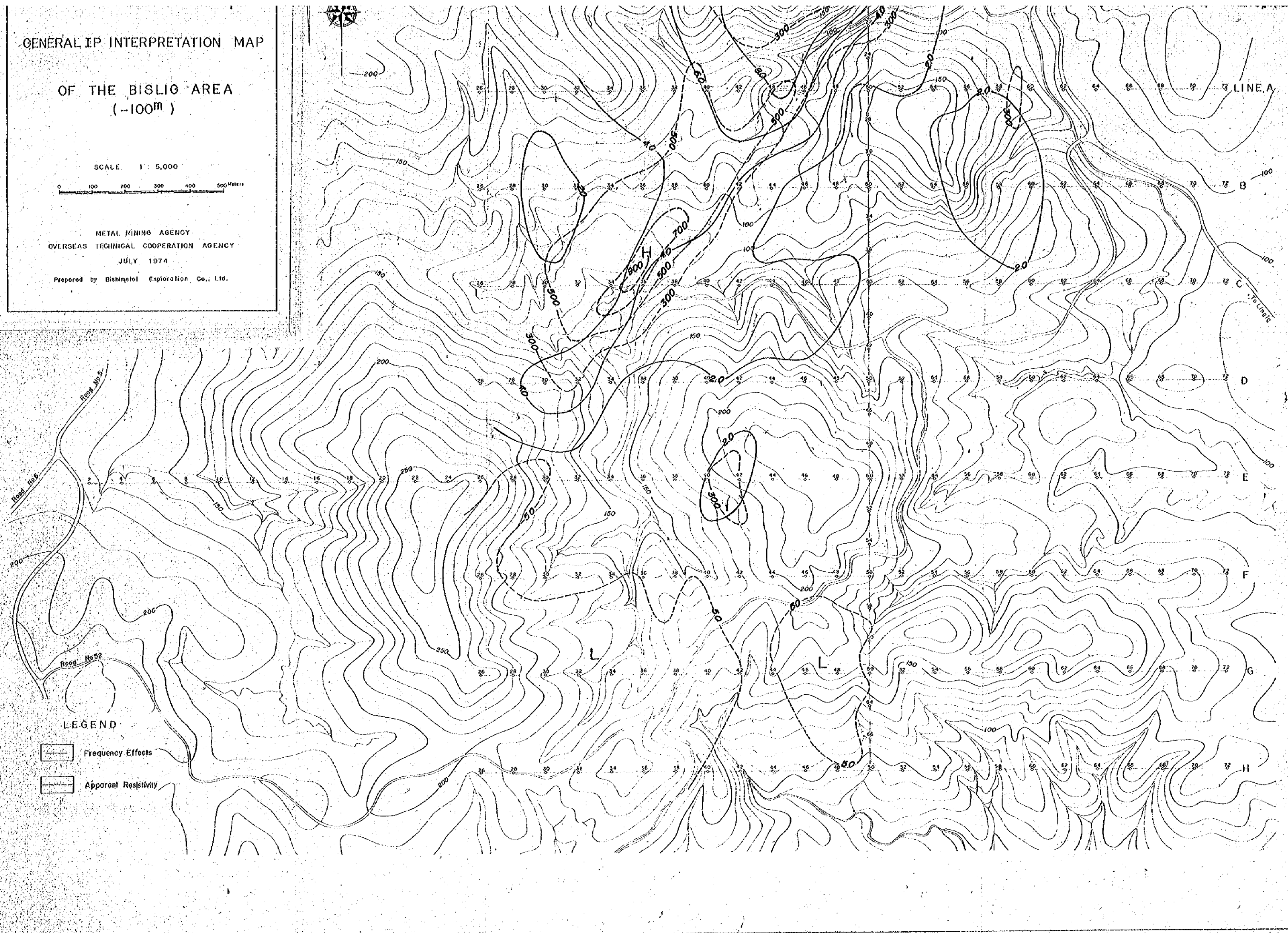
OF THE BISLIG AREA
(-100m)

SCALE 1 : 5,000



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimel Exploration Co., Ltd.



LEGEND

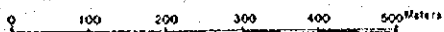
- Frequency Effects
- Apparent Resistivity

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

RESULTS OF SIMULATION
OF THE BISLIG AREA

LINE - A

SCALE 1 : 5,000

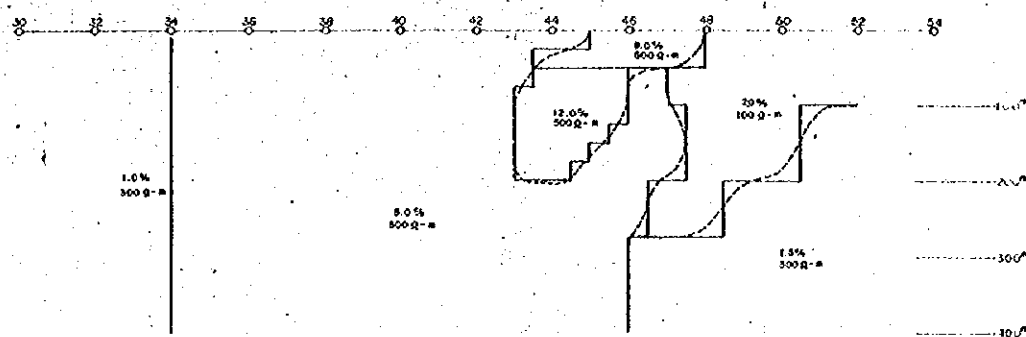


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

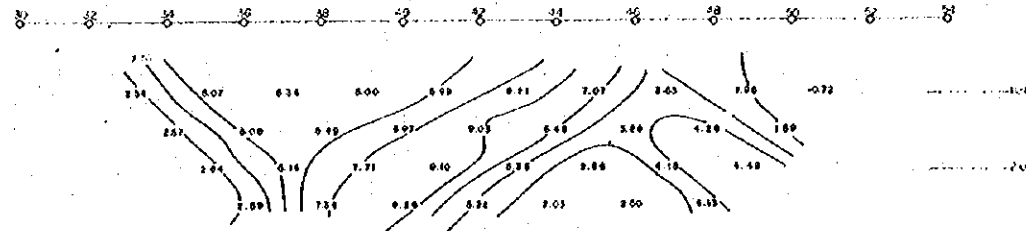
Prepared by Bishimetal Exploration Co., Ltd.

SUBSURFACE MODEL

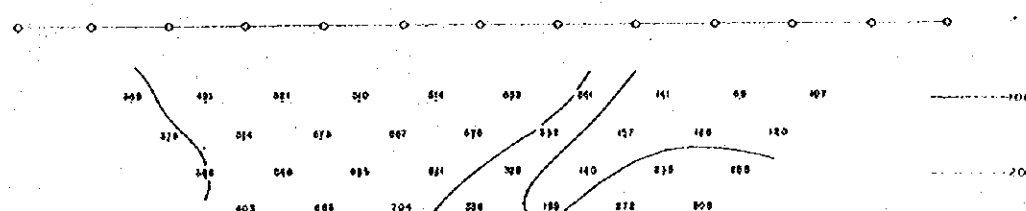


RESULTS OF SIMULATION

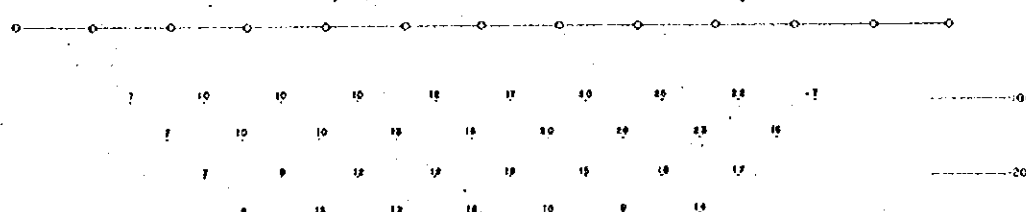
FREQUENCY EFFECTS in PERCENT



DPLDPL RESISTIVITY(A.C.) in OHM-METER

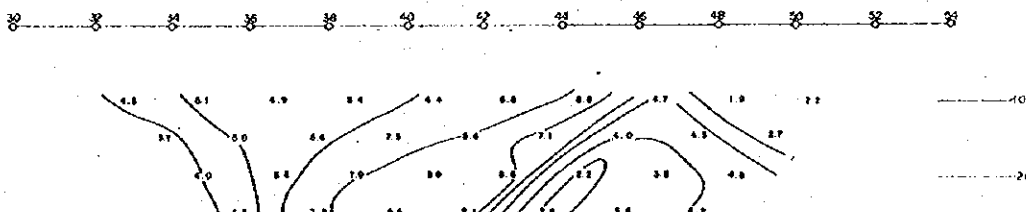


METAL CONDUCTION FACTOR in 1,000xPERCENT-PER-OHM-METER

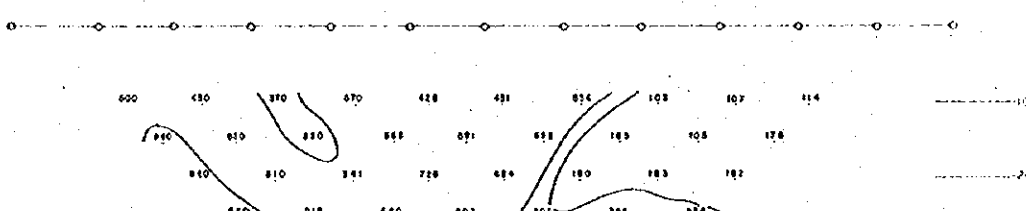


RESULTS OF OBSERVATION

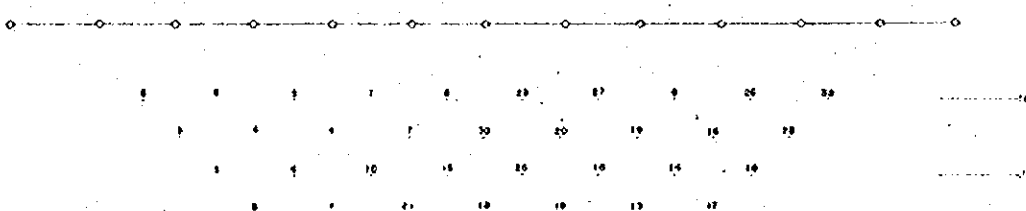
FREQUENCY EFFECT in PERCENT



DPLDPL RESISTIVITY(A.C.) in OHM-METER



METAL CONDUCTION FACTOR in 1,000xPERCENT-PER-OHM-METER

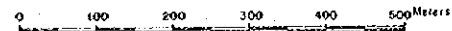


GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

RESULTS OF SIMULATION
OF THE BISLIG AREA

LINE - B

SCALE 1 : 5,000

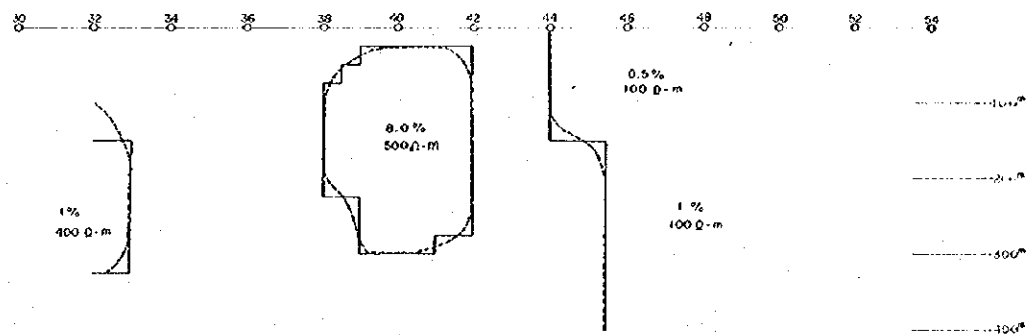


METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY

JULY 1974

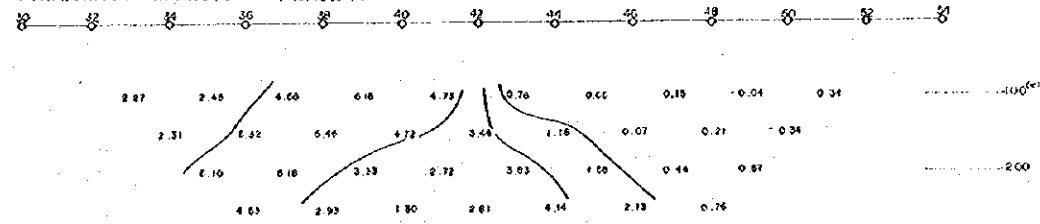
Prepared by Bishimetal Exploration Co., Ltd.

SUBSURFACE MODEL

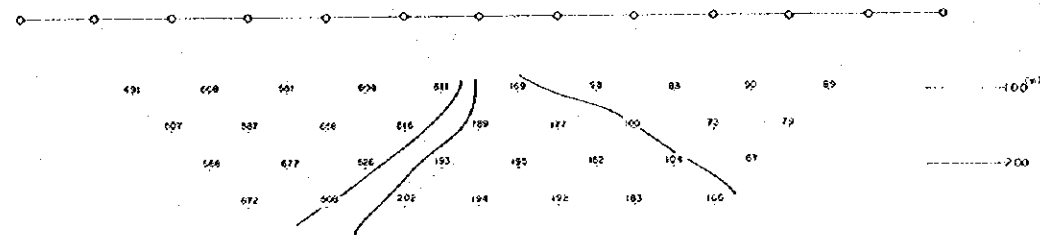


RESULTS OF SIMULATION

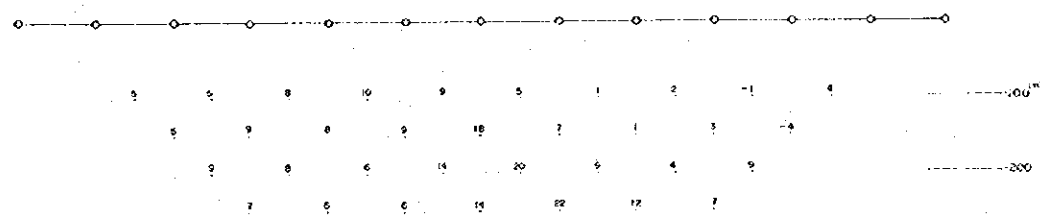
FREQUENCY EFFECTS in PERCENT



DPLDPL RESISTIVITY(A.C.) in OHM-METER

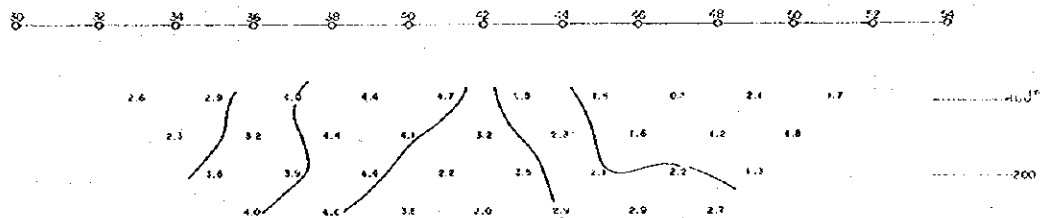


METAL CONDUCTION FACTOR in 1000XPERCENT-PER-OHM-METER

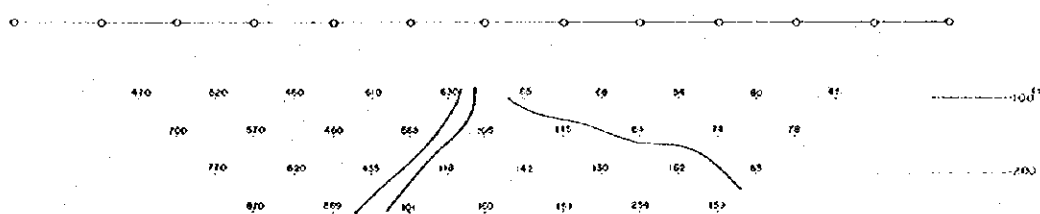


RESULTS OF OBSERVATION

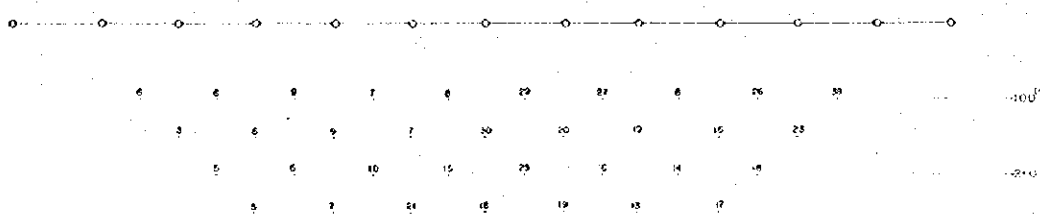
FREQUENCY EFFECT in PERCENT



DPLDPL RESISTIVITY(A.C.) in OHM-METER



METAL CONDUCTION FACTOR in 1000XPERCENT-PER-OHM-METER



PL. II-16

GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

GENERAL I.P. INTERPRETATION MAP
OF THE BISLIG AREA

SCALE 1 : 10,000





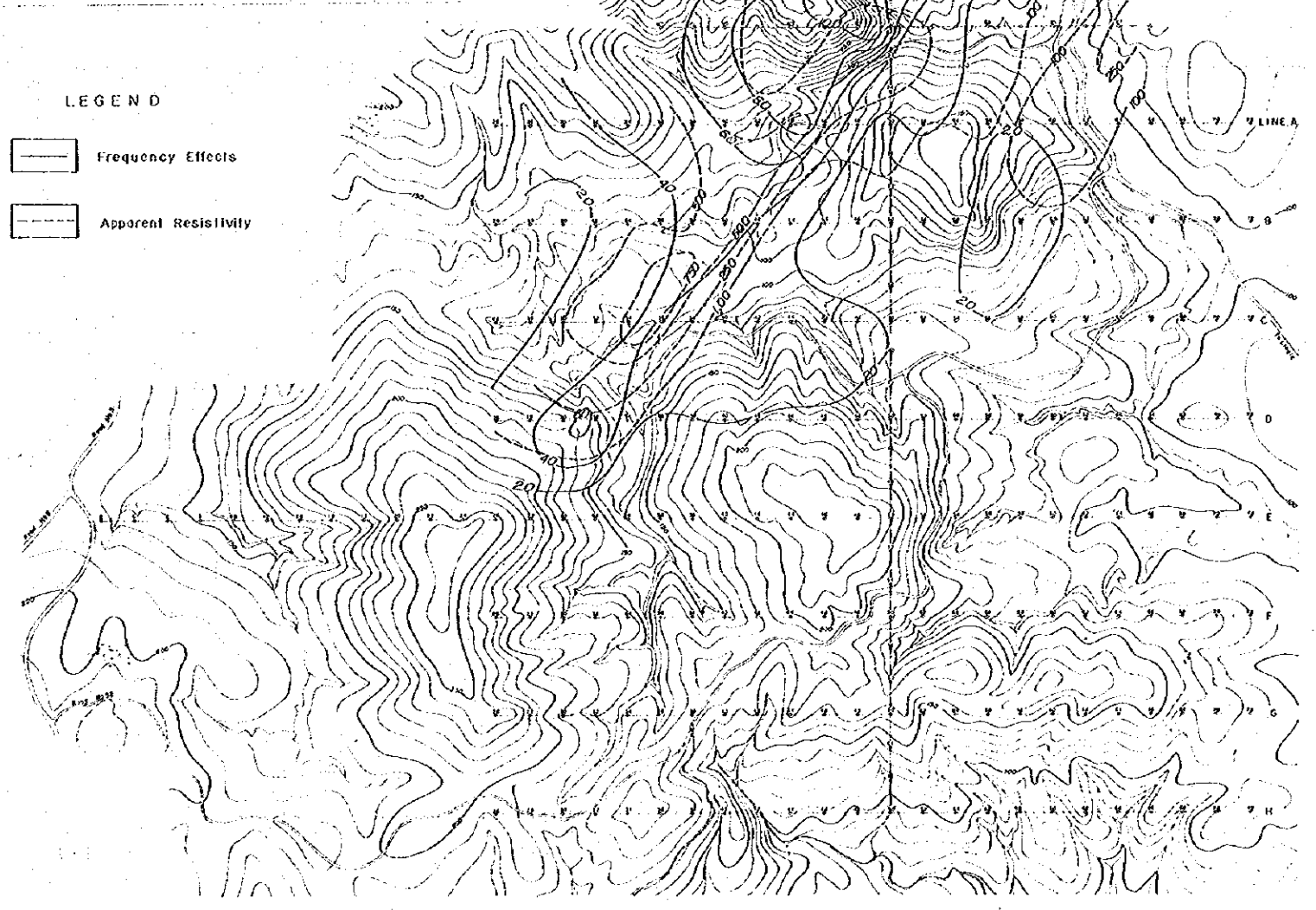
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Gishmetal Exploration Co., Ltd.

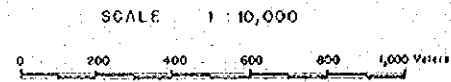


LEGEND

-  Frequency Effects
-  Apparent Resistivity

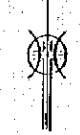
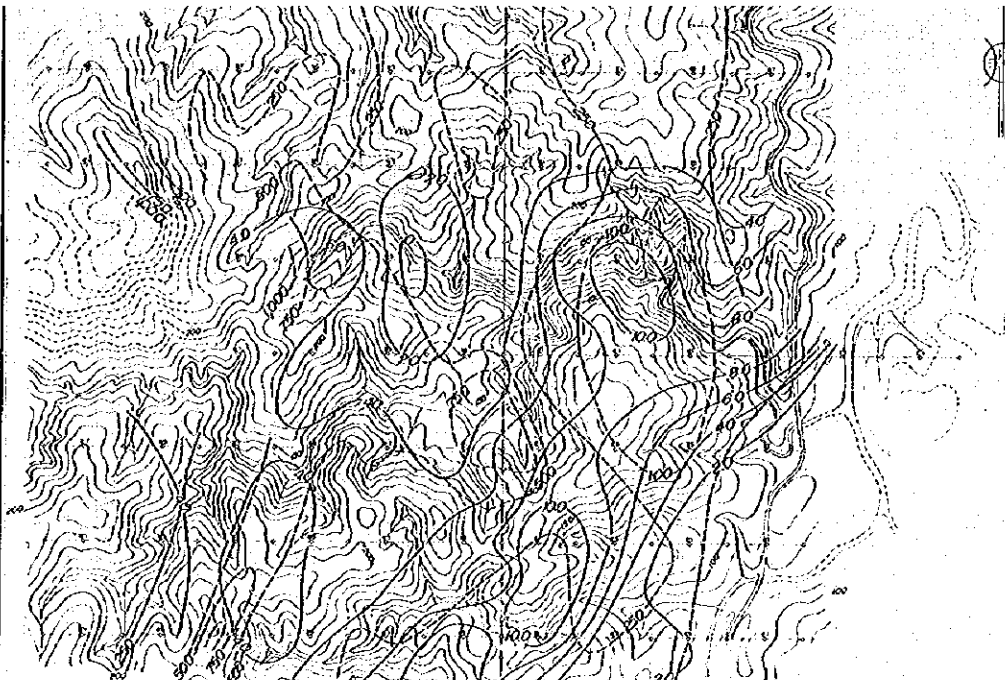


GENERAL I.P. INTERPRETATION MAP
OF THE BISLIG AREA





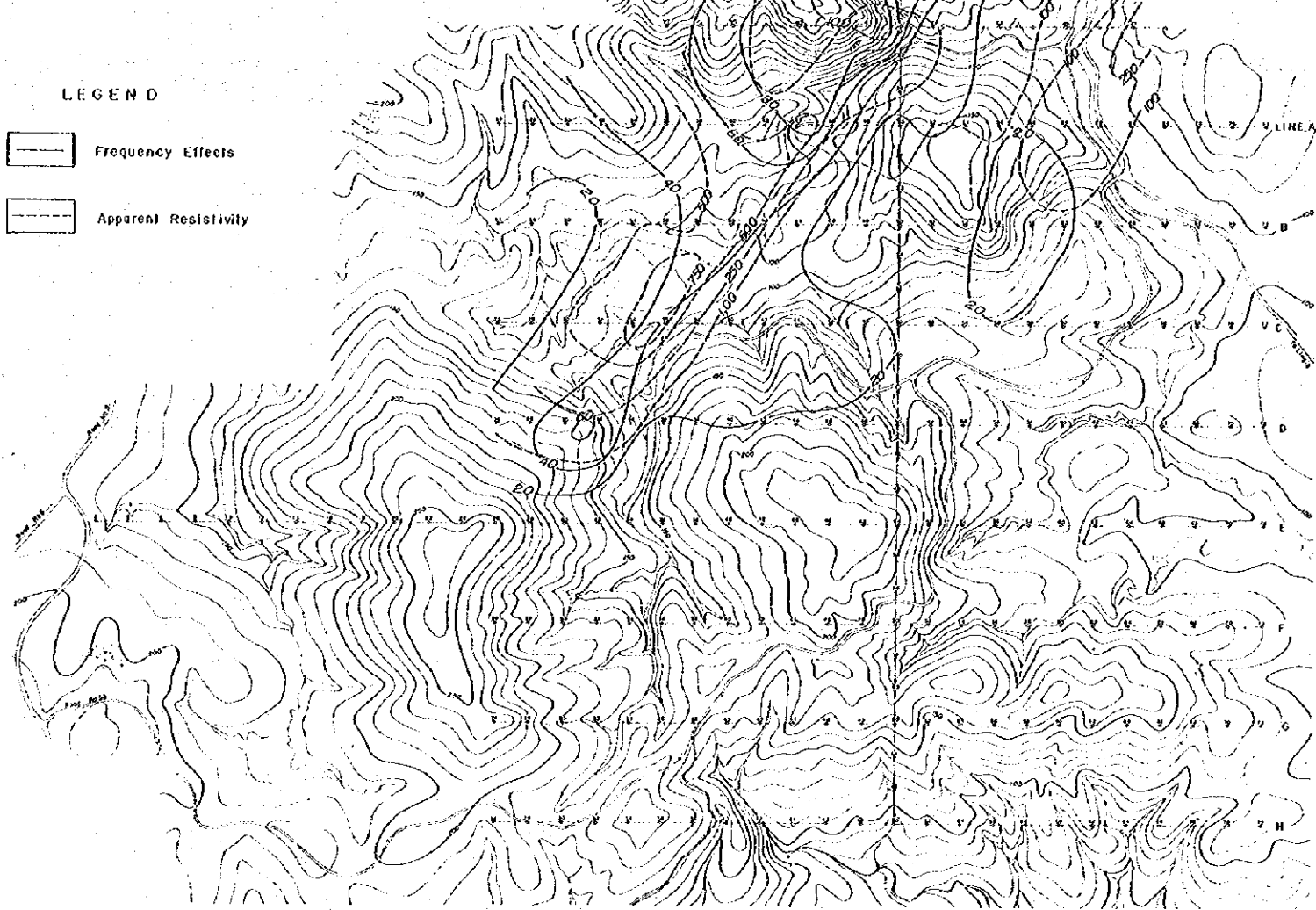
METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974

Prepared by Bishimetal Exploration Co., Ltd.



LEGEND

-  Frequency Effects
-  Apparent Resistivity

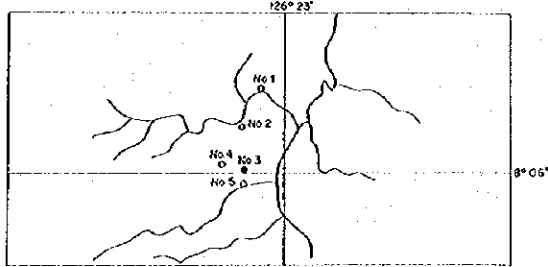


GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION
OF
EASTERN MINDANAO

CORE LOG and ASSAY

D.D.H. No. 3

Dip: - 90° Depth: 250^m 50
Oper. Period Dec 18 1973 ~ Jan 18 1974



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
Prepared by Bishimetal Exploration Co., Ltd.

LEGEND

- Soil Sand, Gravel
- Andesite
- Basalt
- Dolerite
- Diorite Porphyry
- Quartz Diorite
- Dissemination & stringer
- Chloritization
- Epidotization
- Silicification
- Argillization
- Sheared zone

cp chalcopyrite chl chlorite
mo molybdenite ep epidote
py pyrite qtz quartz

Depth (m)	Columnar Section	Description	Assay				Depth (m)	Columnar Section	Description	Assay				Depth (m)	Columnar Section	Description	Assay			
			% Cu	% Mo	% others	others				% Cu	% Mo	% others	others				% Cu	% Mo	% others	others
50		soil sand gravel					50		slightly chloritized	0.17				50		gabbro w. 40cm				
55							55		weakly chloritized	0.17	0.000			55		dark gray basalt				
60		py-cp stringer w: 1cm					60		py-cp stringer w: 1cm	0.15	0.000			60		py-chl stringer				
65		sheared	0.04	0.000			65		hemitudo diorite porphyry pydissemination	0.03				65		silicified				
70		py-cp stringer silicified	0.09	0.000			70		py stringer with little amount of cp	0.44	0.001			70		py-gtz stringer				
75		cp stringer w: 5cm	0.07				75		dark gray-black basalt	0.00				75		very poor mineralization				
80		dark grey: fresh basalt	0.19	0.000			80		py-cp stringer w: 5mm	0.18	0.000			80		sheared zone with py-gtz network				
85		sheared	0.06				85		py-cp stringer w: 1cm	0.06	0.000			85		very poor mineralization				
90		weakly epidotized	0.27	0.000			90		py-cp stringer w: 5mm	0.16	0.000			90		sheared zone argillized & py dissemination				
95		py stringer	0.02				95		py-cp stringer w: 1cm	0.07	0.000			95		py-cp stringer				
100		py-cp stringer	0.12	0.000			100		dark gray basalt	0.06	0.000			100		py-gtz stringer				
105		weakly chloritized & silicified	0.12	0.000			105		dark green basalt	0.04				105		fresh basalt				
110		py-cp stringer w: 1cm	0.31	0.000			110		py-cp stringer w: 5mm	0.04				110		barren gtz w: 1-3cm				
115		py-cp stringer w: 1cm	0.12	0.000			115		chloritized dark green basalt py-cp stringer w: 5mm	0.07	0.000			115		chloritized				
120		py-cp stringer w: 1cm	0.17				120		chloritized dark green basalt py-cp stringer w: 5mm	0.16	0.000			120		sheared zone				
125		py-cp stringer w: 1cm	0.13	0.000			125		dark gray, fresh dolerite stringer w: 5mm	0.09				125		dolerite dyke				
130		py-cp stringer w: 1cm	0.09				130		dark gray, fresh dolerite stringer w: 5mm	0.29	0.000			130		barren gtz w: 1-3cm				
135		py-cp stringer w: 1cm	0.25	0.000			135		arg & chl	0.22	0.000			135		chloritized & gtz py disseminated				
140		py-cp stringer w: 1cm	0.36	0.000			140		sheared	0.03	0.000			140		sheared zone				
145		py-cp stringer w: 1cm	0.03	0.000			145		sheared	0.03	0.000			145		black, fresh basalt				
150		py-cp stringer w: 1cm	0.03	0.000			150		sheared	0.03	0.000			150		chl				
155		py-cp stringer w: 1cm	0.03	0.000			155		sheared	0.03	0.000			155		py-cp stringer				
160		py-cp stringer w: 1cm	0.03	0.000			160		sheared	0.03	0.000			160		black, fresh basalt				
165		py-cp stringer w: 1cm	0.03	0.000			165		sheared	0.03	0.000			165		py-cp stringer				
170		py-cp stringer w: 1cm	0.03	0.000			170		sheared	0.03	0.000			170		py-cp stringer				
175		py-cp stringer w: 1cm	0.03	0.000			175		sheared	0.03	0.000			175		py-cp stringer				
180		py-cp stringer w: 1cm	0.03	0.000			180		sheared	0.03	0.000			180		py-cp stringer				
185		py-cp stringer w: 1cm	0.03	0.000			185		sheared	0.03	0.000			185		py-cp stringer				
190		py-cp stringer w: 1cm	0.03	0.000			190		sheared	0.03	0.000			190		py-cp stringer				
195		py-cp stringer w: 1cm	0.03	0.000			195		sheared	0.03	0.000			195		py-cp stringer				
200		py-cp stringer w: 1cm	0.03	0.000			200		sheared	0.03	0.000			200		py-cp stringer				

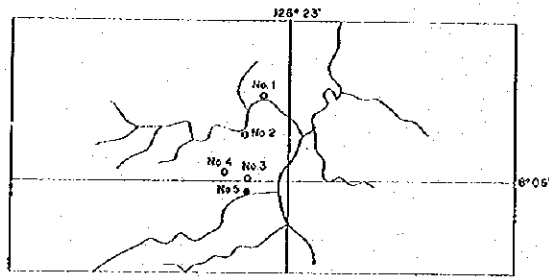
GEOLOGICAL, GEOPHYSICAL SURVEYS, AND DRILLING EXPLORATION

OF
EASTERN MINDANAO

CORE LOG and ASSAY

D.D.H. No. 5

Dip : - 90° Depth : 250' 00"
Oper. Period Dec. 1 1973 ~ Dec. 28 1973



METAL MINING AGENCY
OVERSEAS TECHNICAL COOPERATION AGENCY
JULY 1974
Prepared by Bishimetal Exploration Co., Ltd.

LEGEND

- Soil Sand, Gravel
- Andesite
- Basalt
- Dolerite
- Diorite Porphyry
- Quartz Diorite
- Dissemination & stringer
- Chloritization
- Epidotization
- Silicification
- Argillization
- Sheared zone

cp chalcopyrite chl chlorite
mo molybdenite ep epidote
py pyrite qtz quartz

Depth (m)	Columnar Section	Description	Assay				Depth (m)	Columnar Section	Description	Assay				Depth (m)	Columnar Section	Description	Assay				
			% Cu	% Mo	% others	% others				% Cu	% Mo	% others	% others				% Cu	% Mo	% others	% others	
0		Soil, sand gravel					0		alteration py. dissemination	0.6	100			0							
5							5		partitic very few py & ep qtz	1.3	85	0.05	0.000	5		leucocratic, medium grained C.I. 30 massive minerals - chl and replaced by py & ep.	0.02			0.02	0.000
10							10		fresh partitic diorite	6.2	100	0.21		10		strongly chloritized	0.01			0.01	0.000
15							15		py. network	10	333			15		dark grey, fine grained	0.02			0.02	0.000
20							20		weakly chloritized	0.02				20		py. m. film	0.01			0.01	0.000
25							25		dark grey dolerite	0.07	0.001			25		shear zone	0.01			0.01	0.000
30							30		pegmatitic qtz vein w: 5cm	7.0	100	0.07		30		leucocratic	0.00			0.00	0.000
35							35		weak py. chl & ep dissemination	0.7	21	0.2	0.00	35		partitic	0.00			0.00	0.000
40							40		strongly chloritized	0.8	7	0.03	0.000	40		strongly chloritized	0.00			0.00	0.000
45							45		py stringer w: 2.5cm ext. stringer	0.8	7	0.03	0.000	45		very weak mineralization	0.03			0.03	0.000
50							50		fresh, fine grained diorite C.I. 25	0.9	100	0.01		50		dark grey	0.01			0.01	0.000
55							55		silty py. chl weakly chloritized	0.97		0.00		55		few chl stringer	0.03			0.03	0.000
60							60		fractured dark grey dolerite	0.98	0.000			60		melanocratic, fine grained	0.02			0.02	0.000
65							65		weak py. chl	0.23	0.001			65		chl with py stringer	0.00			0.00	0.000
70							70		leucocratic medium grained ep. chl. py	0.04				70		leucocratic, fine grained	0.02			0.02	0.000
75							75		pegmatitic qtz vein w: 10cm	0.23	0.000			75		strongly chloritized	0.01			0.01	0.000
80							80		melanocratic, fine grained weakly chloritized py dissemination	0.08		0.00		80		leucocratic, fine grained	0.03			0.03	0.000
85							85		leucocratic, medium grained C.I. 20-25 pegmatitic qtz vein py stringer	0.19	0.000			85		strongly chloritized	0.00			0.00	0.000
90							90		coarse grained pl. ph. 5 x 10mm	0.02				90		leucocratic, fine grained	0.02			0.02	0.000
95							95		pegmatitic qtz vein	0.06				95		leucocratic, medium grained C.I. 30	0.01			0.01	0.000
100							100		fine grained pl. ph. 5 x 5mm	0.02				100		sheared medium grained C.I. 30 pegmatitic qtz	3.6	30		3.6	30
105							105		weakly chloritized	0.20				105		chloritized	1.1	45		1.1	45
110							110		strongly chloritized	0.18	0.001			110		dark green	0.01			0.01	0.000
115							115		py. cp. stringer	0.01				115		leucocratic, medium grained C.I. 20	0.00			0.00	0.000
120							120		fresh grey strongly chloritized	0.19	0.001			120		CP. py stringer w: 1cm	0.01			0.01	0.000
125							125			0.01				125		weakly chloritized	0.01			0.01	0.000
130							130			0.00				130			0.03			0.03	0.000
135							135			0.00				135			0.01			0.01	0.000
140							140			0.00				140			0.00			0.00	0.000
145							145			0.01				145			0.00			0.00	0.000
150							150			0.01				150			0.00			0.00	0.000
155							155			0.01				155			0.00			0.00	0.000
160							160			0.01				160			0.00			0.00	0.000
165							165			0.01				165			0.00			0.00	0.000
170							170			0.01				170			0.00			0.00	0.000
175							175			0.01				175			0.00			0.00	0.000
180							180			0.01				180			0.00			0.00	0.000
185							185			0.01				185			0.00			0.00	0.000
190							190			0.01				190			0.00			0.00	0.000
195							195			0.01				195			0.00			0.00	0.000
200							200			0.01				200			0.00			0.00	0.000
205							205			0.01				205			0.00			0.00	0.000
210							210			0.01				210			0.00			0.00	0.000
215							215			0.01				215			0.00			0.00	0.000
220							220			0.01				220			0.00			0.00	0.000
225							225			0.01				225			0.00			0.00	0.000
230							230			0.01				230			0.00			0.00	0.000
235							235			0.01				235			0.00			0.00	0.000
240							240			0.01				240			0.00			0.00	0.000
245							245			0.01				245			0.00			0.00	0.000
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