

DRILLING LOG
BALZAPAMBA AREA

MJE - 4

Plate II - 1-9(2)

Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis														
						CL (cm)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)							
210			cp-py-bl-chl thin v in crack w: 2mm																	
211.50			weakly sericitized																	
215.00			bl-Q vlt zone w: 50cm																	
219.90			bl-Q vlt zone w: 50cm py-chl-Q v w: 3cm mo-py-chl thin v in crack w: 2mm			50	Tr	Tr	0.02	0.00	0.01	0.02	0.00							
224.50			py-chl-bl-Q w: 3cm cp-py-chl-Q w: 3cm																	
238.10						50	Tr	Tr	0.01	0.00	0.01	0.00	0.00							
242.90			cp-py-ep-chl-Q thin v w: 2cm																	
254.40			cp-py-ep-chl-Q irregular v w: 1cm																	
260.00			cp-py-ep-chl-Q thin v w: 5mm cp-py-ep-chl-Q thin v w: 1cm cp-py-ep-chl-Q thin v in crack			50	Tr	Tr	0.02	0.00	0.01	0.01	0.00							
263.90			sil, ser altered zone																	
283.10			cp-py-chl-Q thin v in crack			50	Tr	Tr	0.03	0.00	0.01	0.00	0.00							
287.00			bl-Q vlt zone w: 1.50cm white altered zone w: 40cm																	
291.00			cp-py-ep-bl-chl v w: 1cm																	

Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis														
						CL (cm)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)							
300.00			cp-py-ep-bl-Q w: 2cm			50	Tr	Tr	0.01	0.00	0.01	0.00	0.00							
305.30																				

LEGEND

- bl : biotite
- hb : hornblende
- chl : chlorite
- ser : sericite
- sl : silicification
- Q : quartz
- ep : epidote
- cp : chalcopyrite
- py : pyrite
- ml : molybdenite
- pt : pyrrhotite
- sh : scheelite
- grdr : granodiorite
- dr : diorite
- nlwk : network
- v : vein
- dis : dissemination
- org : argillization

DRILLING LOG BALZAPAMBA AREA

MJE - 5

Plate II-1-10(2)

Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis											
						Cl (%)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)				
20200	+	Δ ₃₂	bt-Q drusy v w: 1cm	chl	py cp												
20320	+	Δ ₃₂	Q drusy v in crack w: 1cm		ep												
20660	+	Δ ₃₂	py-mo-Q v w: 5cm	sl	mo												
20980	+	Δ ₃₂	py(muddy)-bt-Q v w: 2cm		bt												
21100	+	+	cp-py-chl film in crack		ep	50	Tr	Tr	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
21280	+	+	bt-Q netw v druse rich														
21850	+	Δ ₃₂	Q v w: 1cm														
220	+	Δ ₃₂	bt-Q vlt w: 5cm														
22130	+	+															
	+		py-mo-chl film in crack														
230	+				ep	1	Tr	Tr	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240	+																
250	+																
25220	+	Δ ₃₂	py(muddy)-bt-Q v w: 5cm			50	Tr	Tr	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	+	Δ ₃₂	cp-py-chl-bt-Q v w: 1cm														
260	+				ep												
	+				ser												
270	+					50	Tr	Tr	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	+				mo												
	+				ep												
280	+																
	+																
290	+		cp-py-chl film in crack			50	Tr	Tr	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
295.05	+	Δ ₃₂	mo-Q v w: 2cm														
299.95	+	Δ ₃₂	Q v w: 2cm		ep												
300	+																

Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis											
						Cl (%)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)				
300	+		bt-ho grds, co very weakly chloritized partly cp-py film in crack		py cp												
	+		Q v w: 1cm		sl	50	Tr	Tr	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	+		30520m														
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	

LEGEND

- bt : biotite
- hb : hornblende
- chl : chlorite
- ser : sericite
- sl : silicification
- Q : quartz
- ep : epidote
- cp : chalcopyrite
- py : pyrite
- ml : molybdenite
- pl : pyrrhotite
- sh : scheelite
- grd : granodiorite
- dr : diorite
- nlw : network
- v : vein
- diss : dissemination
- org : argillization

DRILLING LOG
BALZAPAMBA AREA

MJE - 6

Plate II-1-11(2)

Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis												
						CL (cm)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)					
20050			melano. bi-ho grdo, medium bi-ho grdo, coarse py weakly diss															
20930			py-chl-bt-ser-Q v w: 4cm py-chl-bt-ser-Q v w: 5cm															
210			melano. bi-ho grdo, medium weakly chloritized py diss cp-py lens w: 2mm Q v w: 2cm															
220			py lens L: 3cm cp-py-chl-thin v in crack cp-py-chl-bt-Q thin v w: 5mm															
230			cp-mo-py-lcp-Q v w: 7cm															
23120			bi-ho grdo, coarse py diss, weakly chloritized															
23220			sericitized cp-py-chl-bt-Q v w: 1cm															
240			cp-py-chl-Q thin v w: 2mm															
250			cp-py-chl-bt-Q v w: 5mm cp-py-chl-bt-Q v w: 1cm cp-py-chl-bt-Q irregular v w: 2cm															
260																		
270			py(lcp) diss gradually many															
27310			py-ser-Q v w: 10cm py-Q v w: 1cm py-chl-ser-Q v w: 5cm cp-py-chl-bt-Q irregular v w: 1cm															
28910			lcp-ser-chl-Q drusy v zone w: 100cm cp-py-chl-bt-Q thin v w: 1cm															
28820			cp-py-chl-ep-Q thin v in crack w: 3mm															
290			cp-py-chl-bt-ser-Q v w: 10cm py-ser-Q v cp-py-chl-bt-Q v w: 1cm															
29750			cp-py-chl-bt-Q v w: 3cm py-ser-Q v w: 10cm															
300																		

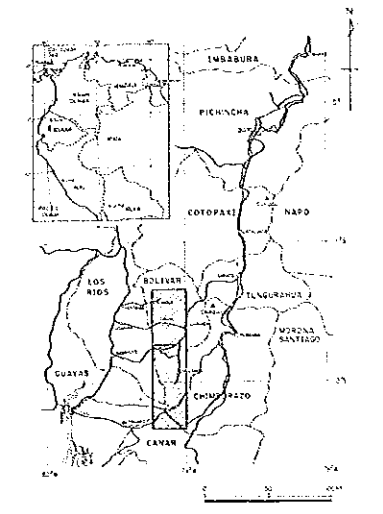
Depth (m)	Col	Str	Description	Alt min	Ore min	Analysis												
						CL (cm)	Au (%)	Ag (%)	Cu (%)	Pb (%)	Zn (%)	Mo (%)	W (%)					
300			bi-ho grdo, co. cp-py diss py-chl-bt-Q v w: 1cm py-chl-bt-Q v															
30700			lcp-py-ser-Q v w: 5cm cp-py-chl-bt-ep-Q v w: 1cm sericitized															
310			cp-py-chl-ep-Q thin v w: 1cm 31160 cp-py-mo-chl-ep-Q v w: 2cm 31290 bt-Q v in sheared zone w: 1cm															
31530			py(muddy)-bt-Q vit in sheared zone w: 50cm 31590 cp-py-chl-bt-ser-Q v w: 2cm															
31990			py-chl-bt-ser-Q v w: 3cm															
320			cp-py(muddy)-chl-bt-Q vit in sheared zone w: 1m															
33350			py-Q-ser v w: 10cm															
32700			cp-py-chl-ep-bt-Q irregular v w: 20cm															
330			cp-py-chl-ep-Q v w: 3cm															
33880			diss of sulfide min poor															
340			lcp-py-chl-bt-ep-Q v w: 1cm															
34300			py-Q-ser v w: 3cm															
34790			chl-ep-Q v w: 3cm															
34900			py(muddy)-bt-Q drusy vit in sheared zone w: 40cm															
350			leached zone with py(muddy)-bt-Q drusy vit. w: 90cm															
353.00m																		
360																		
370																		
380																		
390																		
400																		

LEGEND

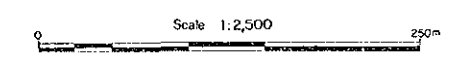
bt : biotite
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ml : molybdenite
pl : pyrrhotite
sh : scheelite
grdr : granodiorite
dr : diorite
ntwk : network
v : vein
diss : dissemination
ozg : ozonization

THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II

Geological Section of Drill Holes

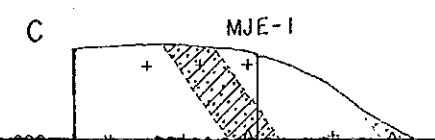
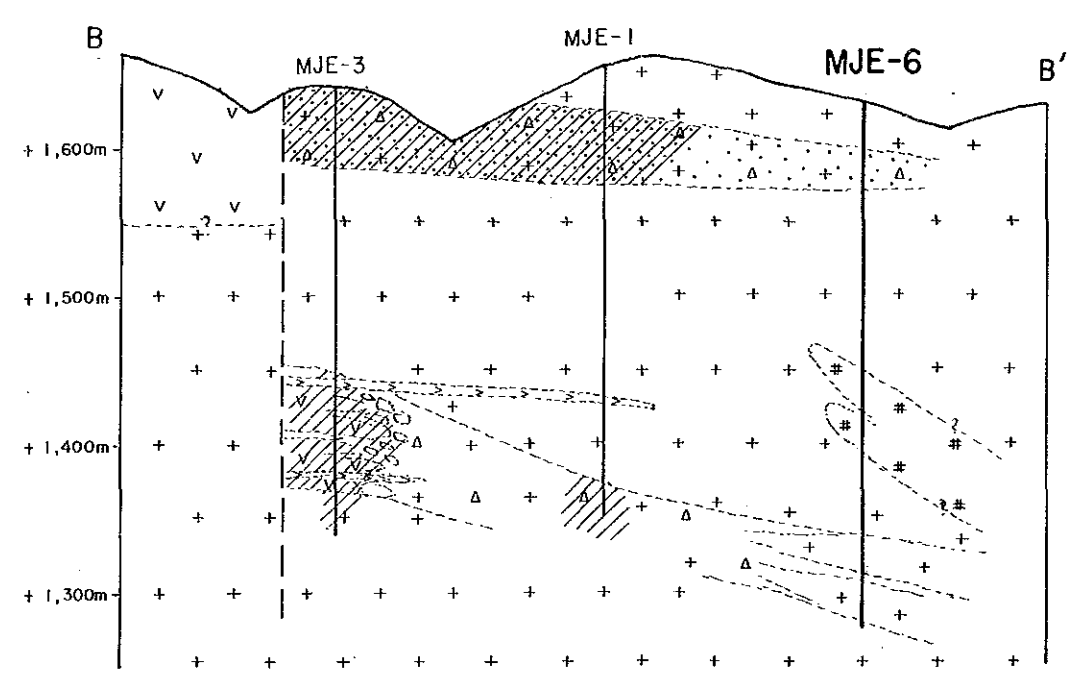
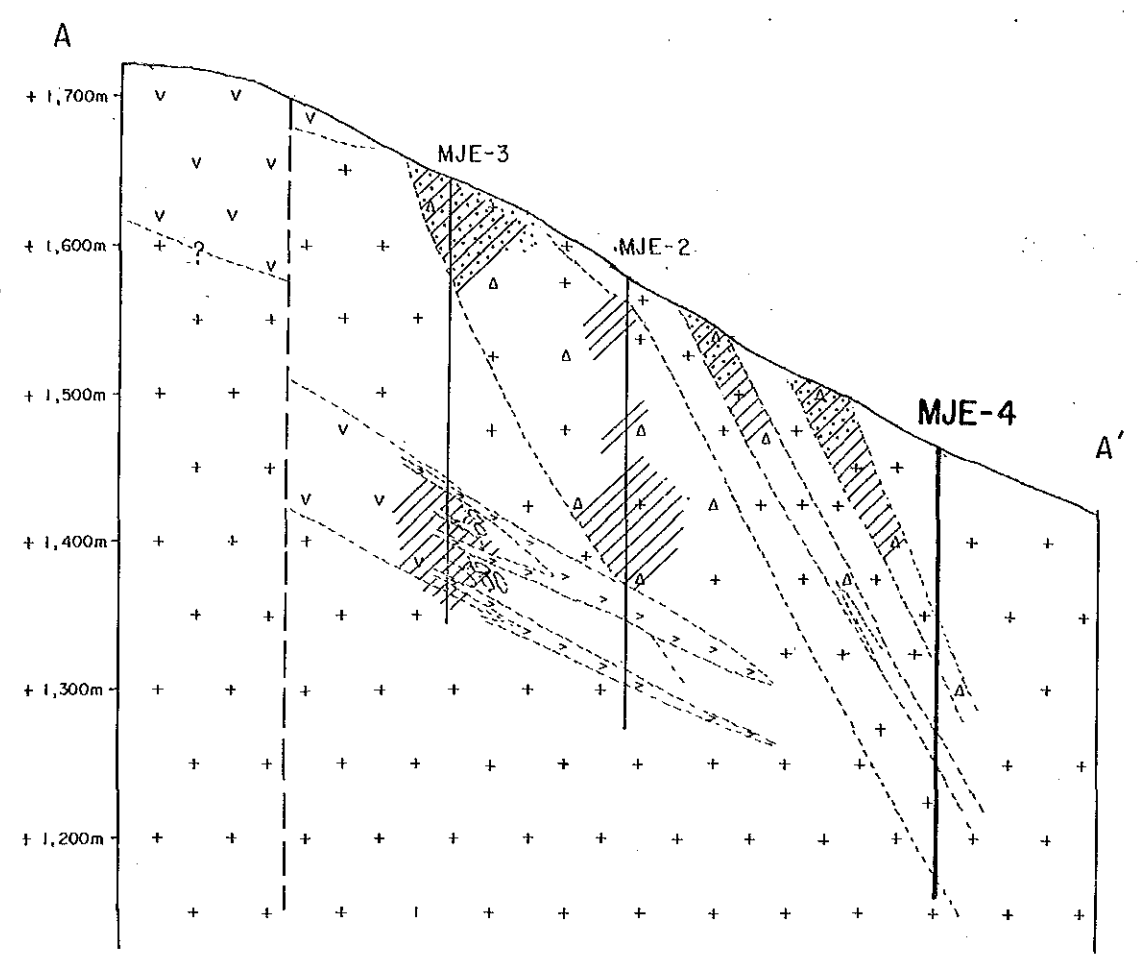


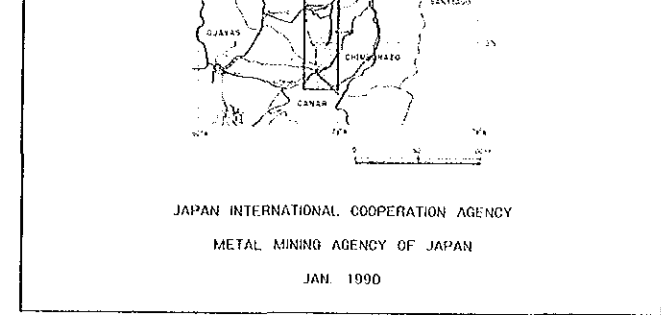
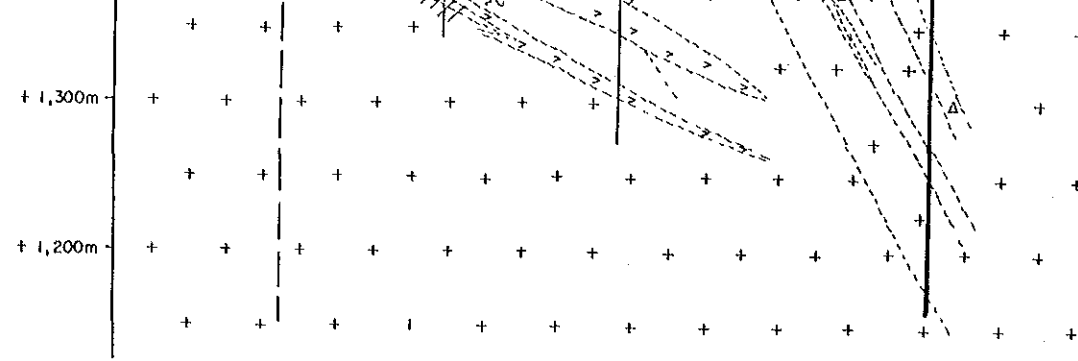
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METAL MINING AGENCY OF JAPAN
JAN. 1990



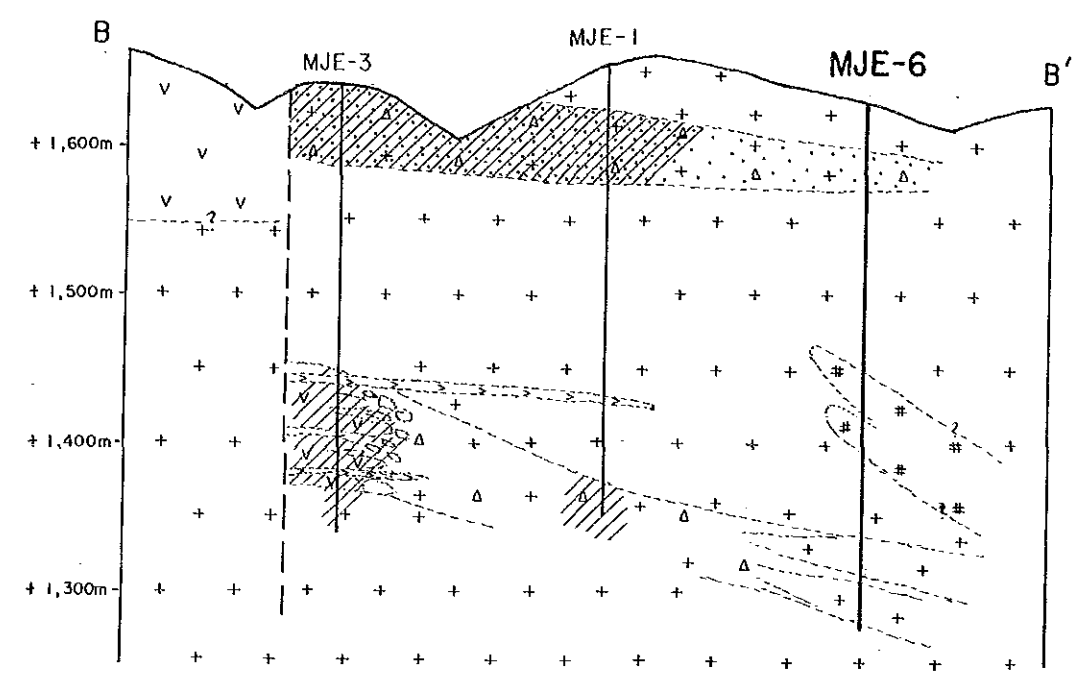
LEGEND

- Granodiorite
- Brecciated granodiorite
- Melanocratic diorite
- Trachyandesite
- Macuchi formation
- Fault
- Mineralized Zone
- Argillized Zone



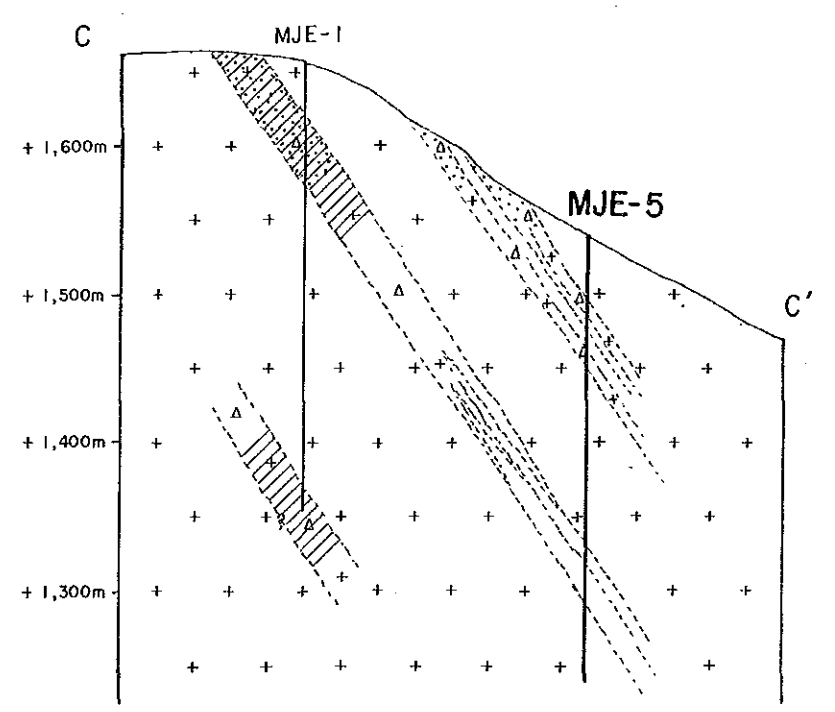


Scale 1:2,500
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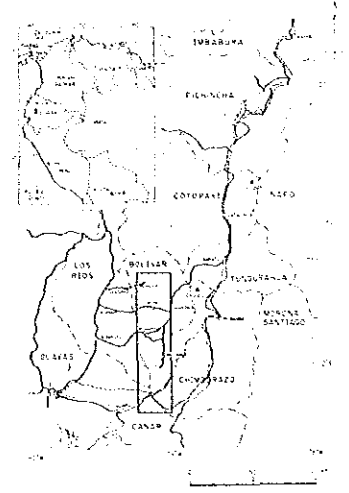


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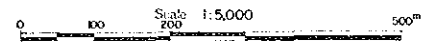
- Granodiorite
- Brecciated granodiorite
- Melanocratic diorite
- Trachyandesite
- Macuchi formation
- Fault
- Mineralized Zone
- Argillized Zone



THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Geological Map and Distribution of Mineral Showings
of the Osohuayco, Balzapamba Area

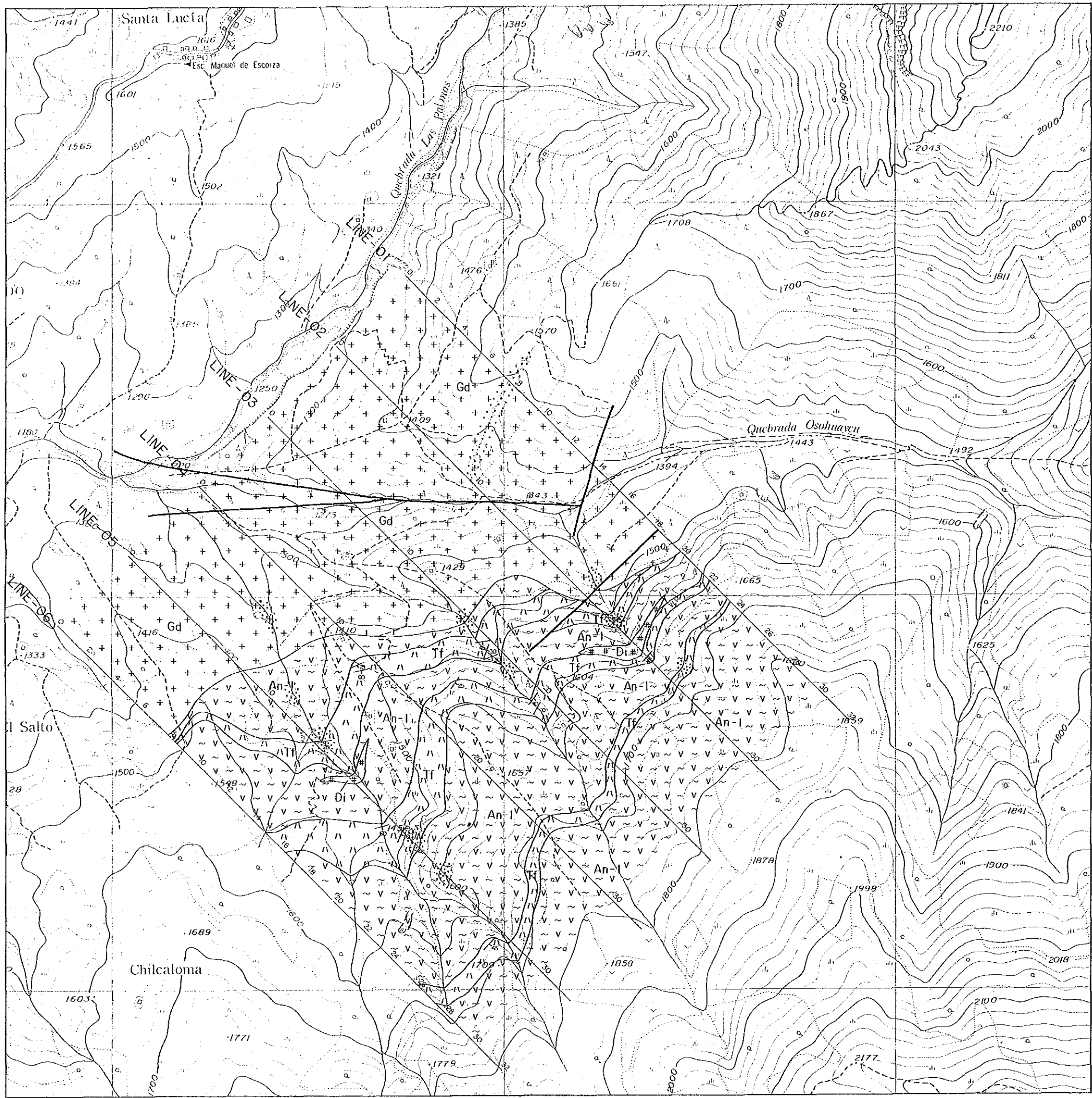


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JAN. 1990



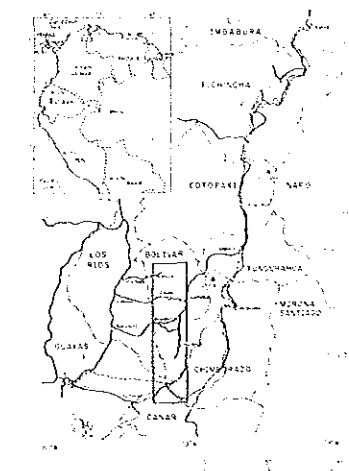
LEGEND

- Cretaceous Mocucho Formation
 - Tf Andesite to quartz-bg. andesitic pyroclastics (D Member)
 - An-I Andesite lava with its pyroclastics and sediment (Tf), and hornfels (A Member)
- Intrusive Rocks
 - Gd Granodiorite
 - Di Melanocratic diorite dyke
- Dip and strike of bedding plane
- Geological boundary
- Fault
- Mineralized zone (Presumed)
- Vein

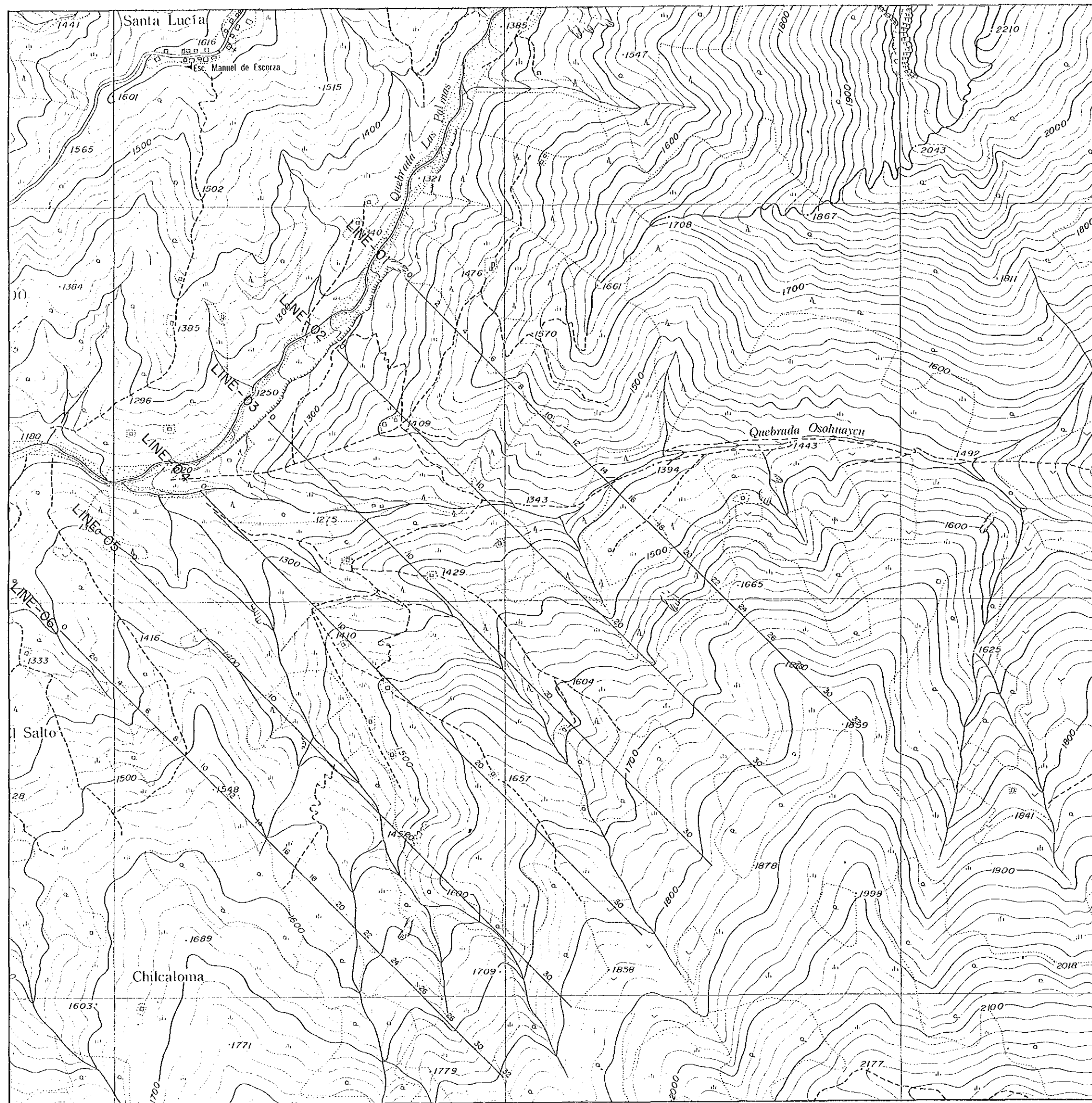
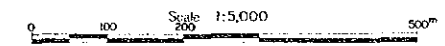


THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II

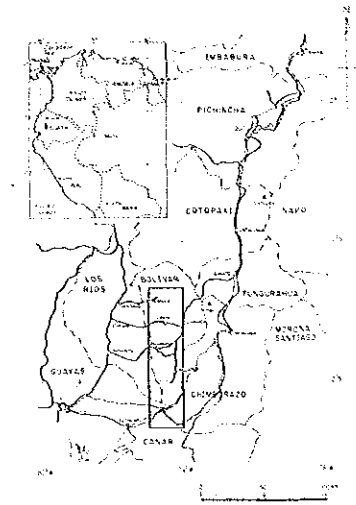
Location Map of IP Survey Lines
of the Osohuayco, Balzapamba Area



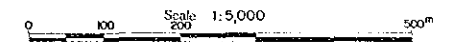
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JAN. 1990






THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Apparent Resistivity Plan Map (n=1)
of the Osohuayco, Balzapamba Area



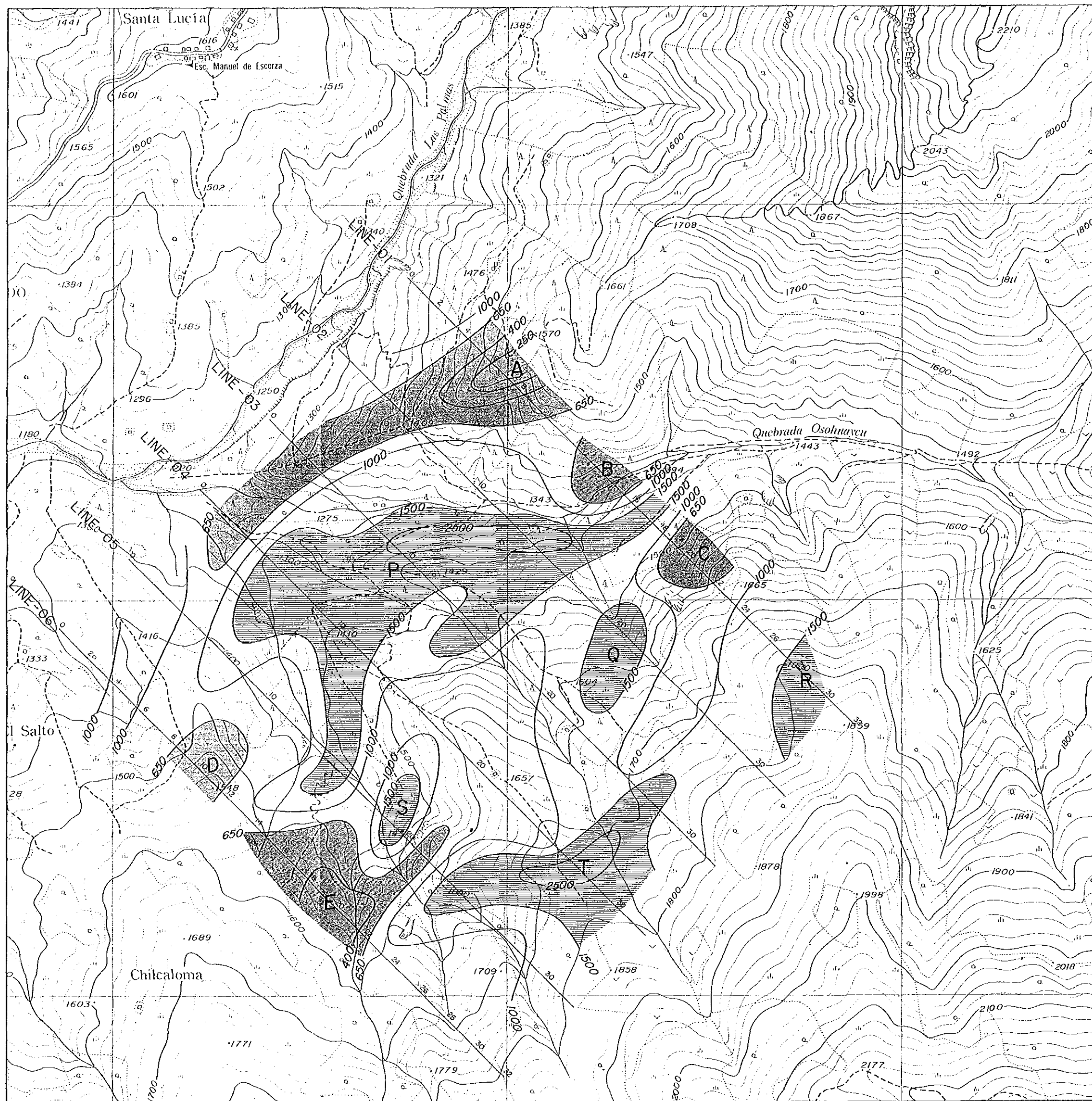
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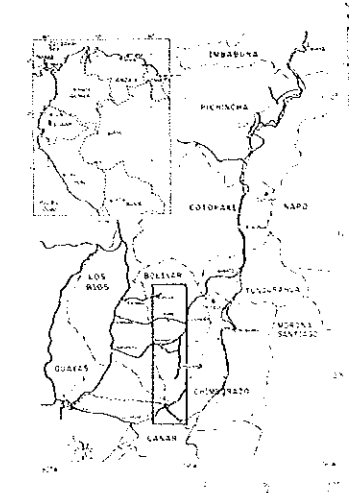
LEGEND

-  $p < 650 \Omega \cdot m$
-  $650 \Omega \cdot m \leq p < 1,500 \Omega \cdot m$
-  $1,500 \Omega \cdot m \leq p$

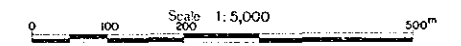
UNIT: $\Omega \cdot m$






THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Apparent Resistivity Plan Map (n=2)
of the Osohuayco, Balzapamba Area

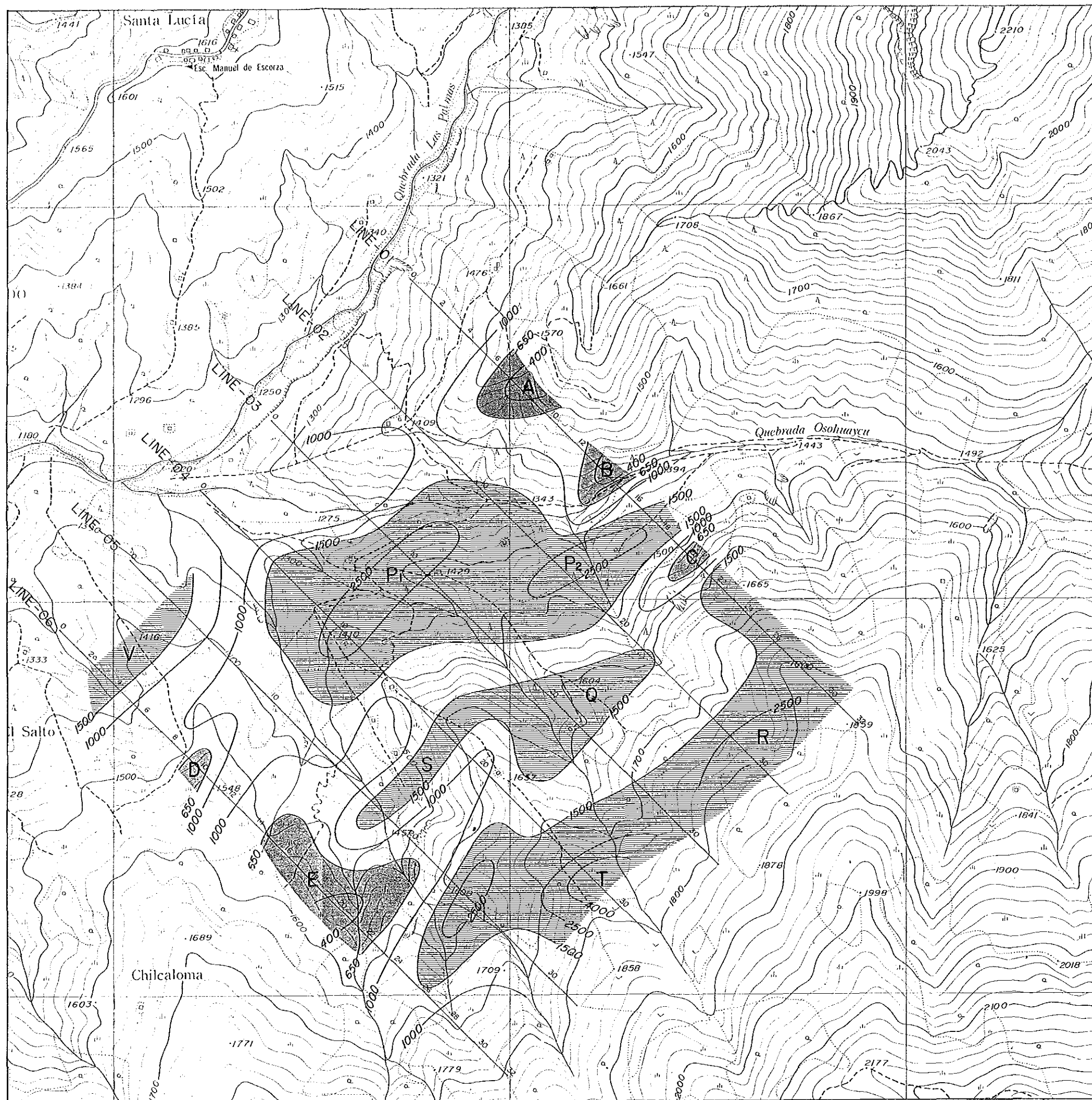


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JAN. 1990

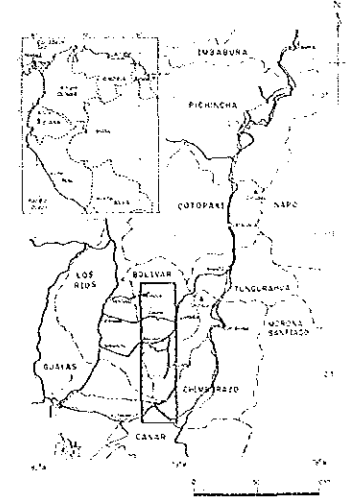


LEGEND

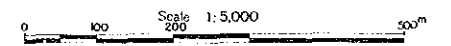
-  $\rho < 650 \Omega \cdot m$
 -  $650 \Omega \cdot m \leq \rho < 1,500 \Omega \cdot m$
 -  $1,500 \Omega \cdot m \leq \rho$
- UNIT: $\Omega \cdot m$






THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Apparent Resistivity Plan Map (n=3)
of the Osohuayco, Balzapamba Area

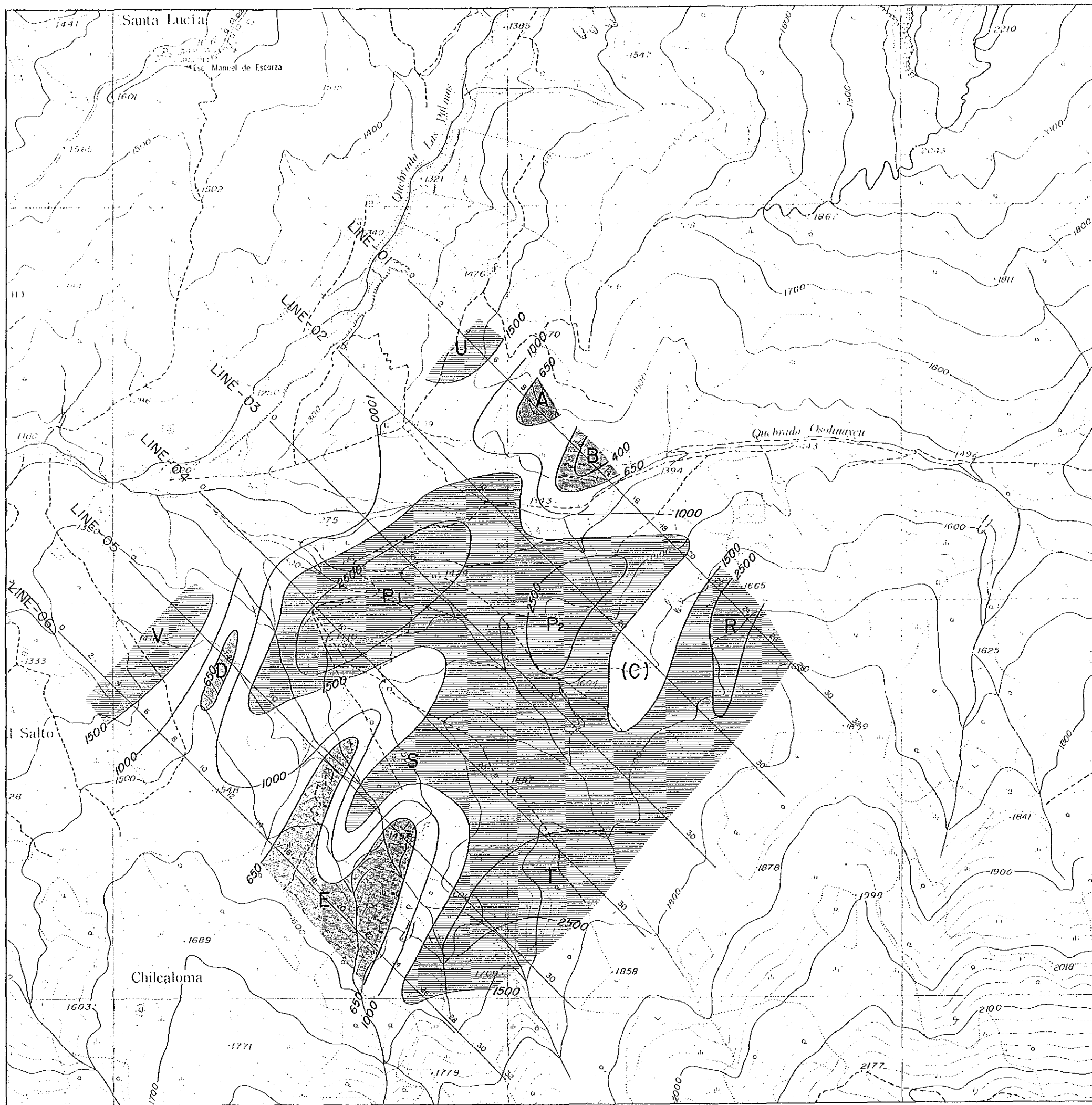


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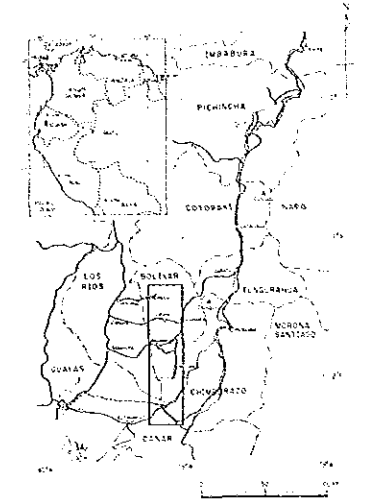


LEGEND

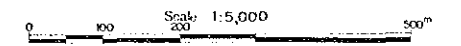
-  $\rho < 650 \Omega \cdot m$
 -  $650 \Omega \cdot m \leq \rho < 1,500 \Omega \cdot m$
 -  $1,500 \Omega \cdot m \leq \rho$
- UNIT : $\Omega \cdot m$






THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Apparent Resistivity Plan Map (n=4)
of the Osohuayco, Balzapamba Area

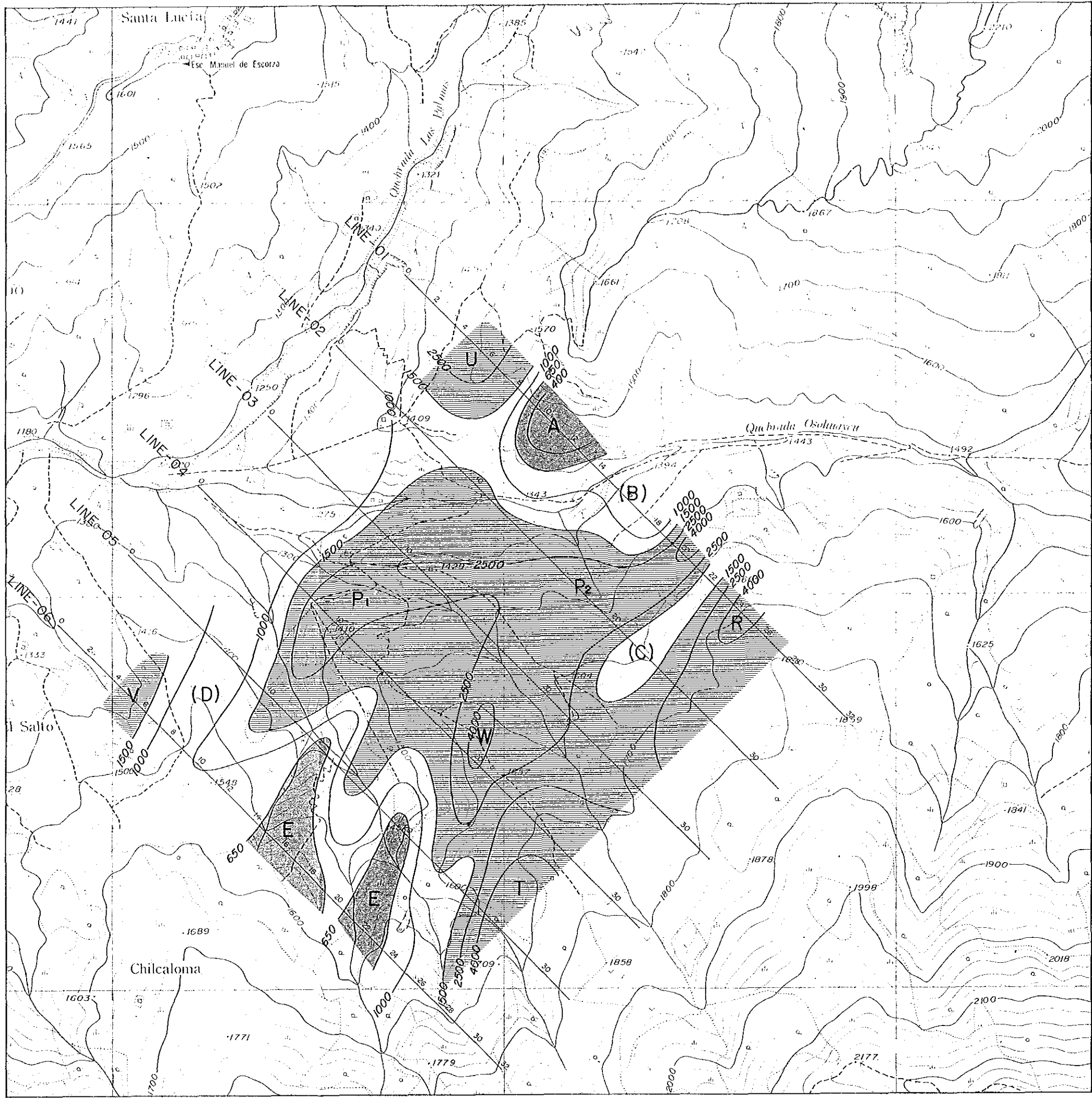


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METAL MINING AGENCY OF JAPAN
JAN. 1990

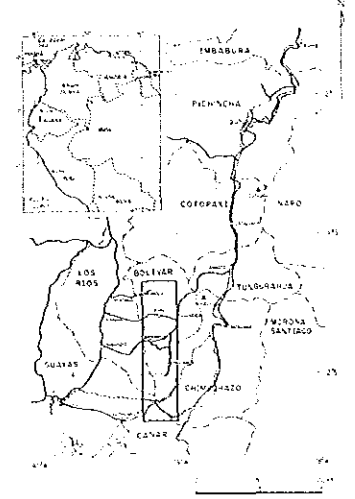


LEGEND

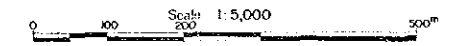
-  $\rho < 650 \Omega \cdot m$
 -  $650 \Omega \cdot m \leq \rho < 1,500 \Omega \cdot m$
 -  $1,500 \Omega \cdot m \leq \rho$
- UNIT : $\Omega \cdot m$






THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Apparent Resistivity Plan Map (n=5)
of the Osohuayco, Balzapamba Area

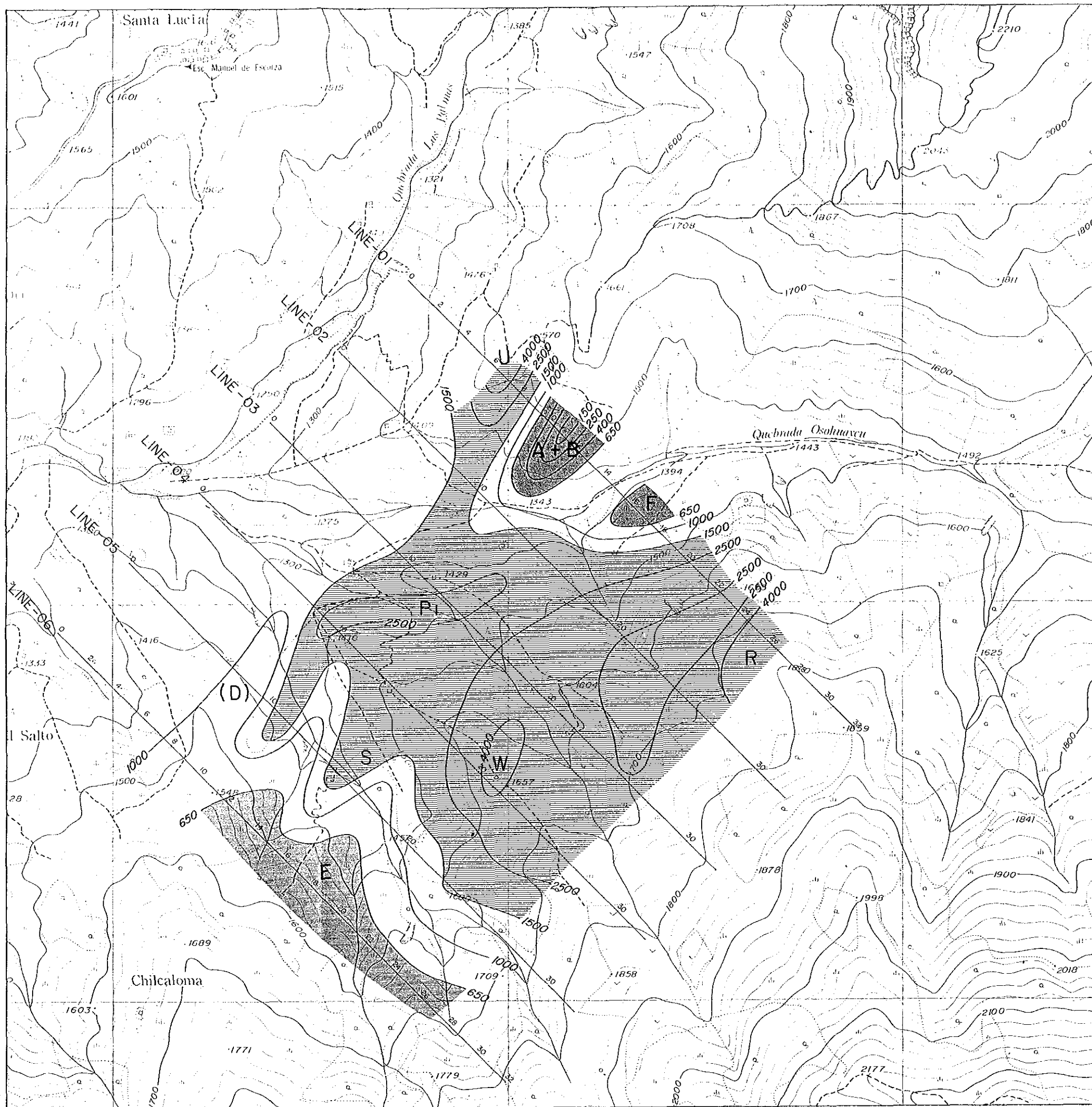


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METAL MINING AGENCY OF JAPAN
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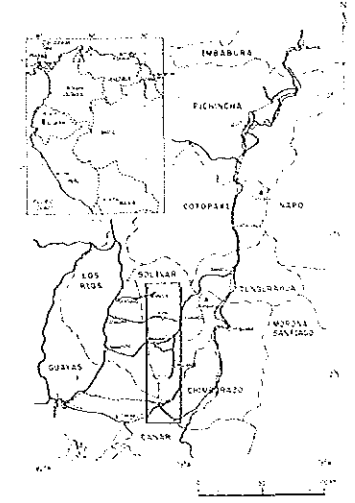


LEGEND

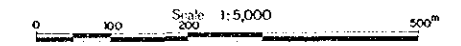
-  $\rho < 650 \Omega \cdot m$
 -  $650 \Omega \cdot m \leq \rho < 1,500 \Omega \cdot m$
 -  $1,500 \Omega \cdot m \leq \rho$
- UNIT: $\Omega \cdot m$







THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
PFE Plan Map (n=1)
of the Osohuayco, Balzapamba Area



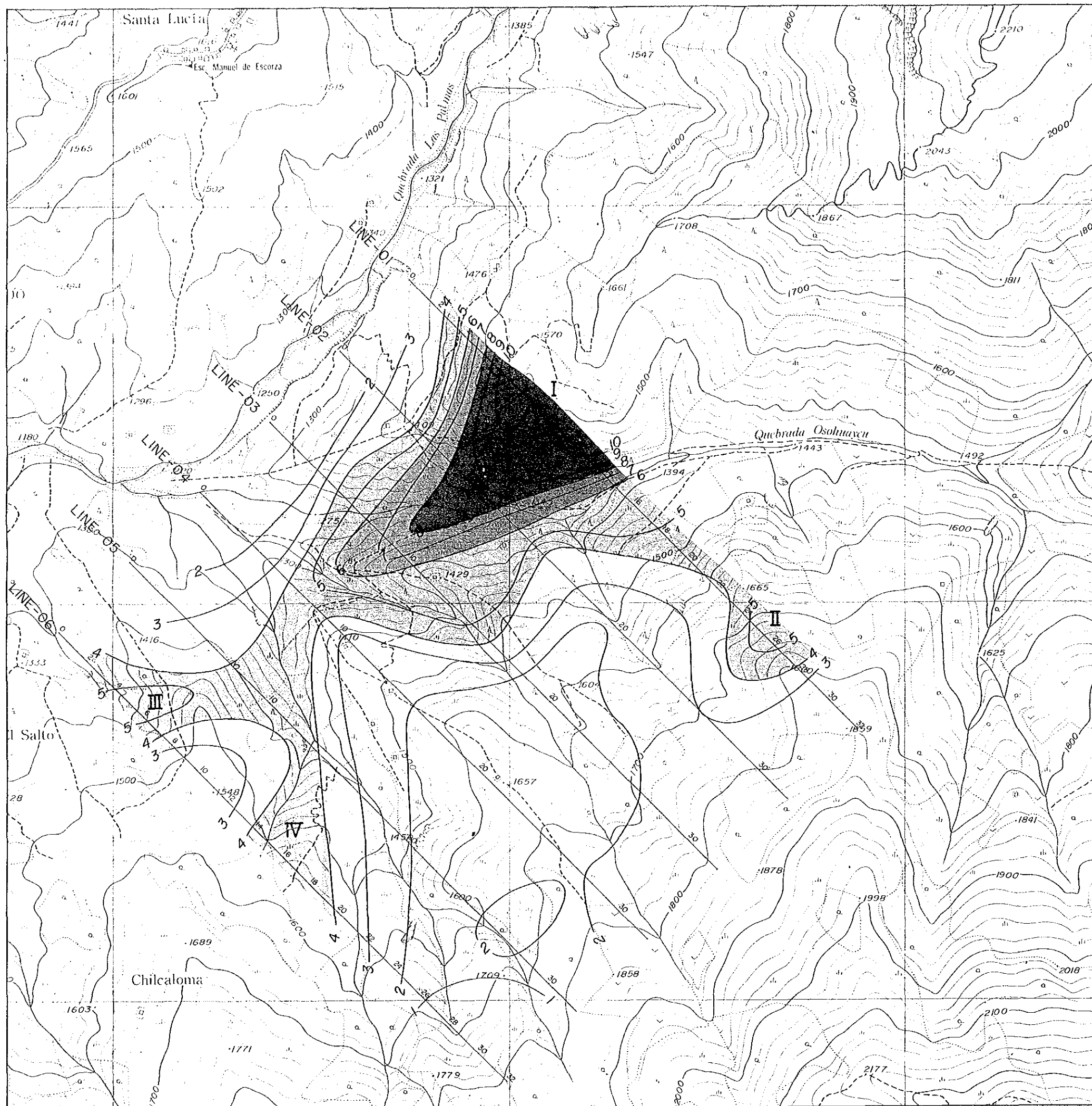
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METAL MINING AGENCY OF JAPAN
JAN. 1990



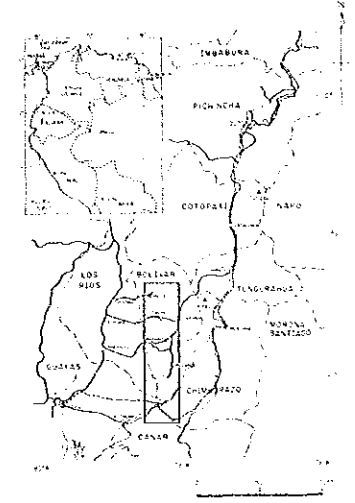
LEGEND

-  8.0% ≤ p
-  6.0% ≤ p < 8.0%
-  4.0% ≤ p < 6.0%
-  p < 4.0%

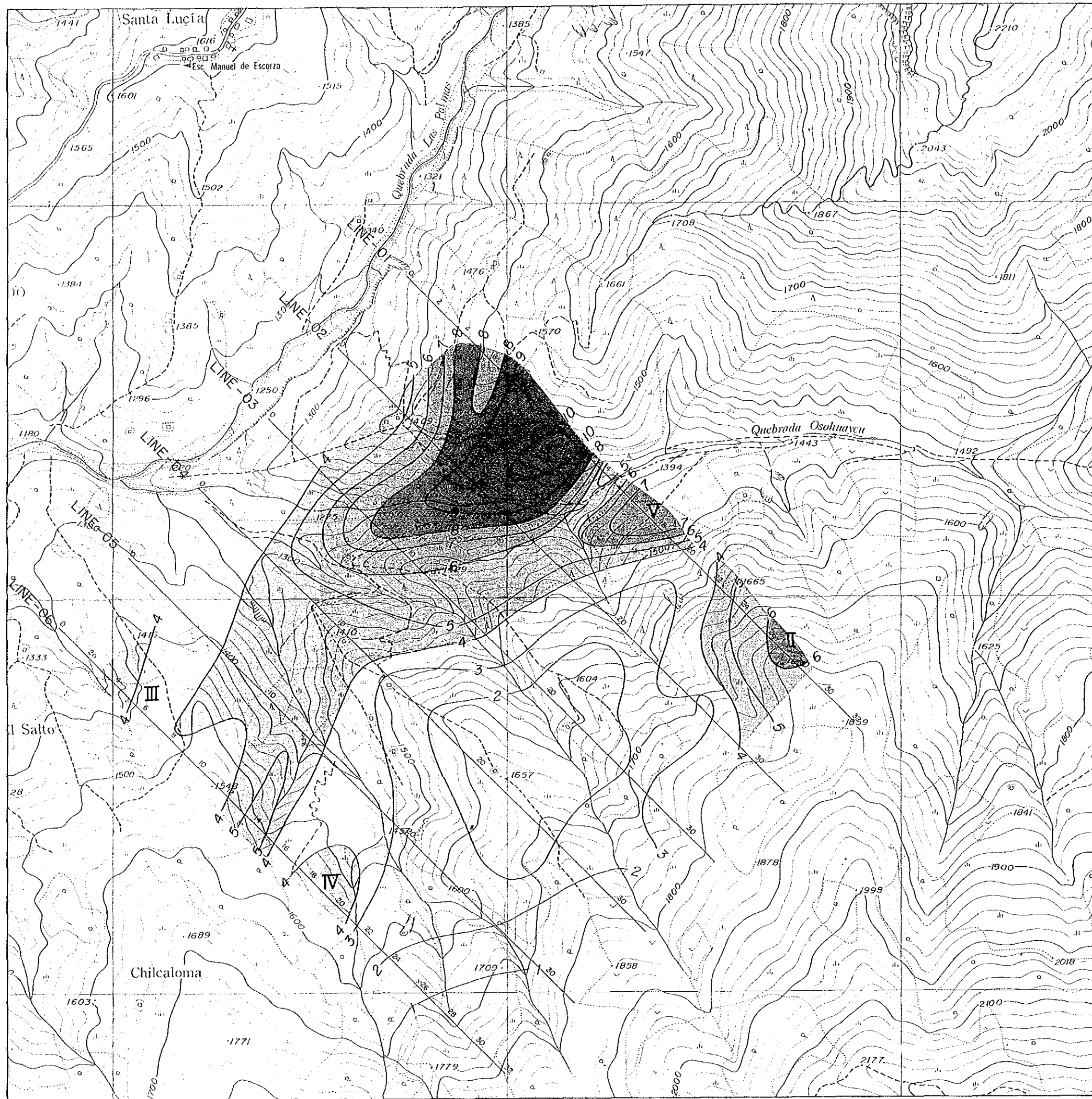
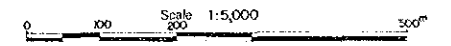
UNIT : %







THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
PFE Plan Map (n=2)
of the Osohuayco, Balzapamba Area



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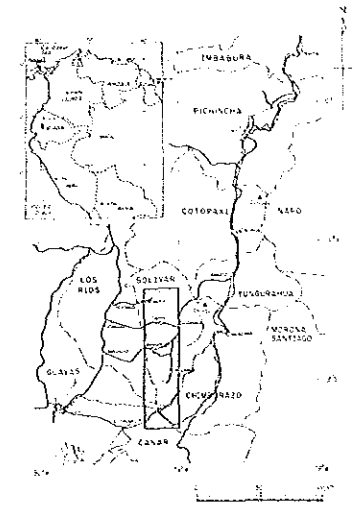


LEGEND

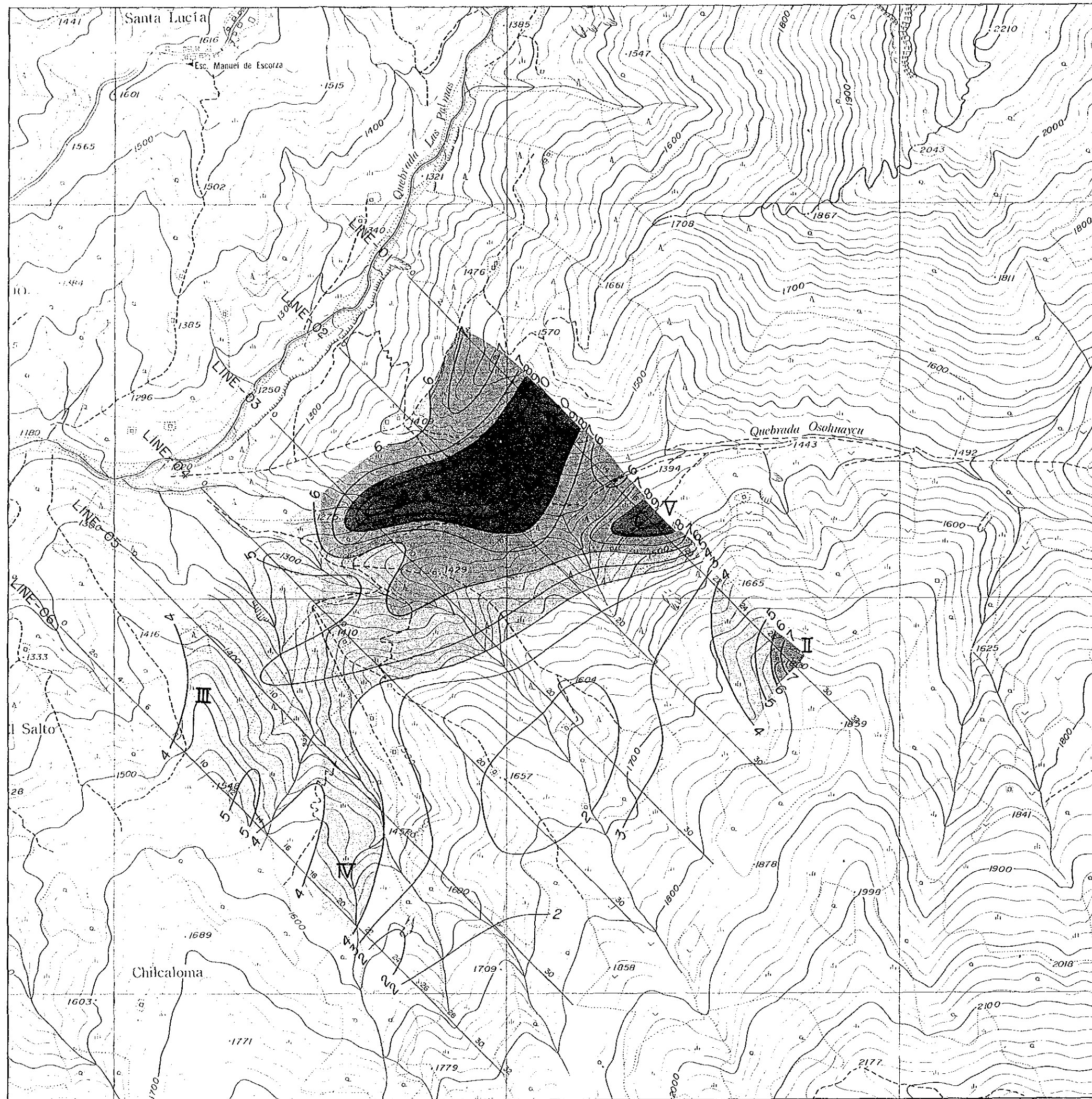
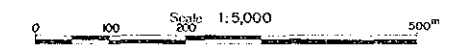
-  8.0% ≤ p
-  6.0% ≤ p < 8.0%
-  4.0% ≤ p < 6.0%
-  p < 4.0%

UNIT : %





THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
PFE Plan Map (n=3)
of the Osohuayco, Balzapamba Area



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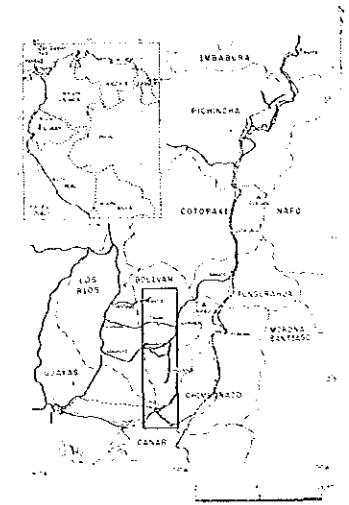


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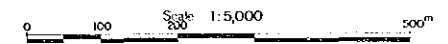
-  8.0 % \leq p
-  6.0 % \leq p < 8.0 %
-  4.0 % \leq p < 6.0 %
-  p < 4.0 %

UNIT : %





THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
P F E Plan Map (n=4)
of the Osohuayco, Balzapamba Area



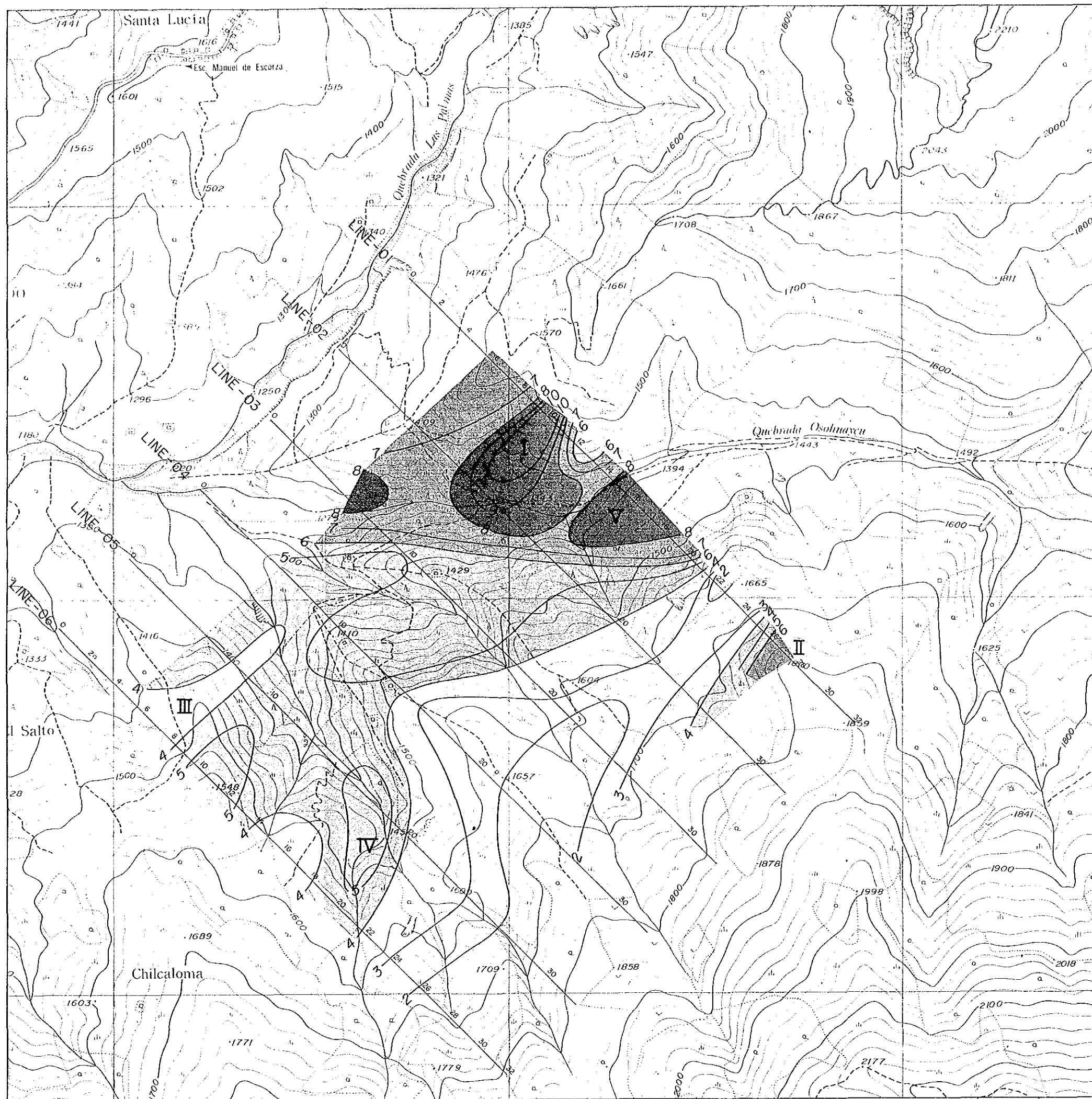
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JAN 1990



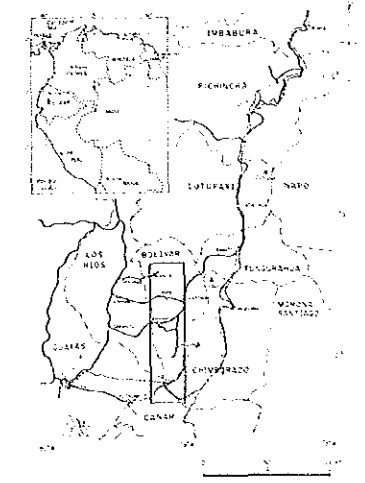
LEGEND

-  8.0% \leq ρ
-  6.0% \leq $\rho < 8.0\%$
-  4.0% \leq $\rho < 6.0\%$
-  $\rho < 4.0\%$

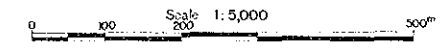
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
THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
PFE Plan Map (n=5)
of the Osohuayco, Balzapamba Area



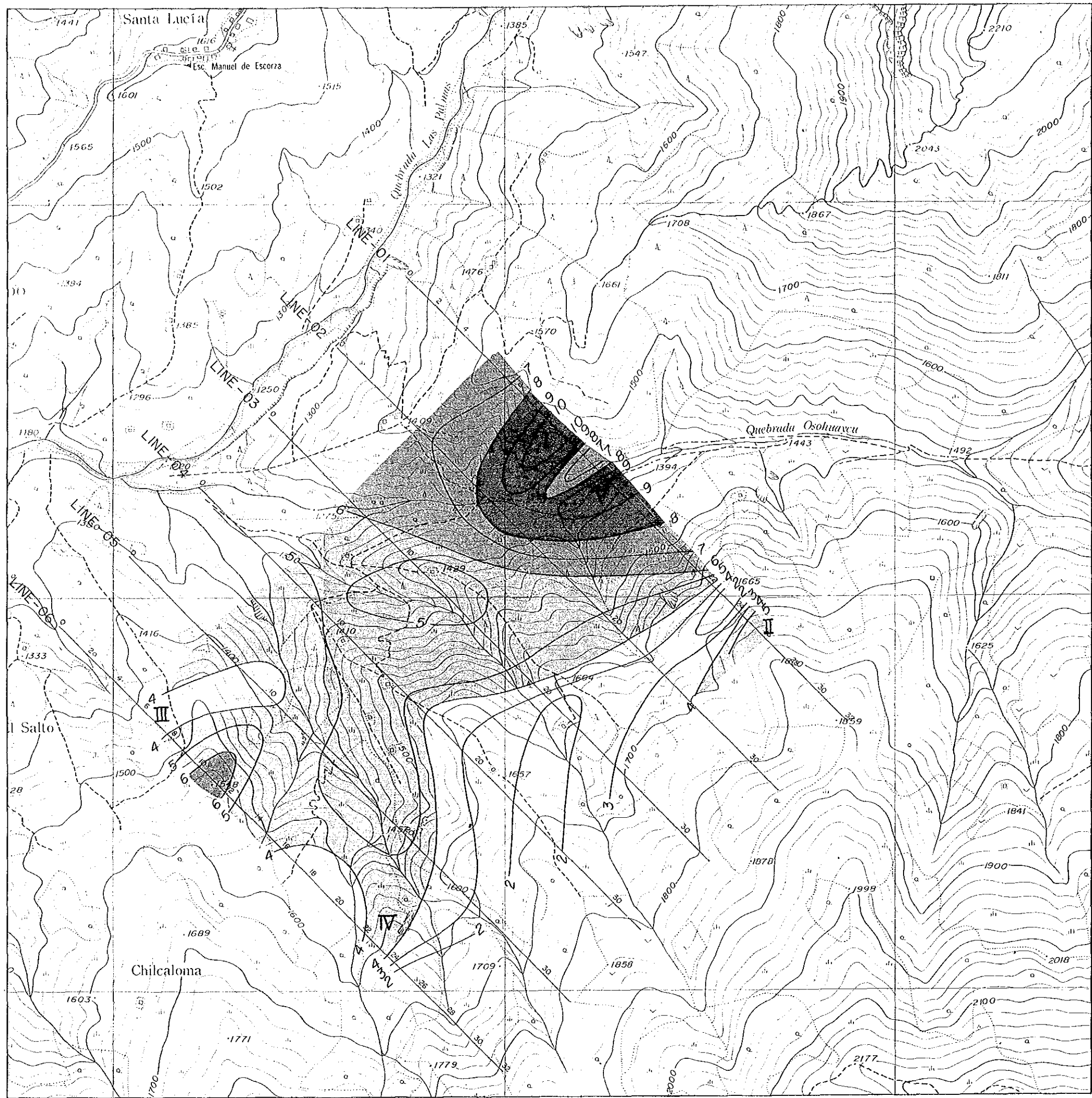
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JAN. 1990



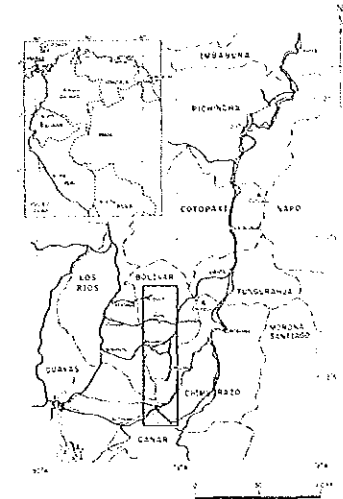
LEGEND

-  8.0% ≤ p
-  6.0% ≤ p < 8.0%
-  4.0% ≤ p < 6.0%
-  p < 4.0%

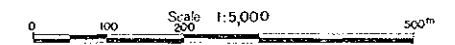
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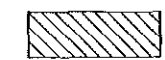

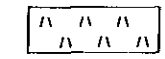
THE COOPERATIVE MINERAL EXPLORATION
IN
THE BOLIVAR AREA, ECUADOR
PHASE II
Interpretation Map
of the Osohuayco, Balzapamba Area



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METAL MINING AGENCY OF JAPAN
JAN. 1990



LEGEND

-  IP Anomaly Source (High Resistivity, High FE)
-  Mineralized Zone
-  Macuchi Tuff

