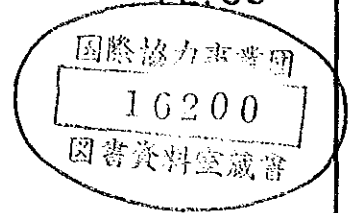


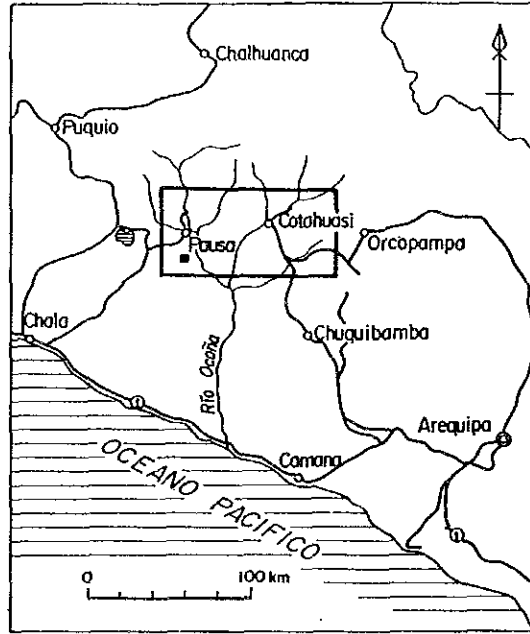
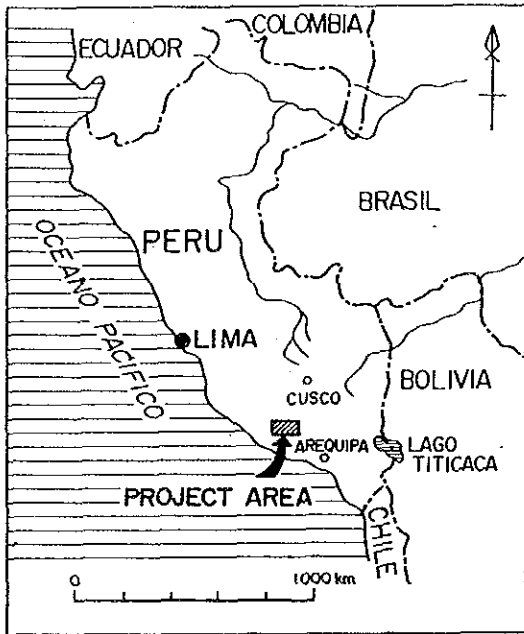
MINERAL EXPLORATION
IN
COTAHUASI AREA
(PHASE II)



GEOLOGICAL LOG OF DIAMOND
DRILLING HOLE (MJP-1~MJP-10)
IN THE PIRCA EASTERN AREA

Scale 1 : 200

LOCATION INDEX






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February 1987

Drill Hole No.	Length (m)	Angle (°)	Location of Drill Hole		Elevation (m)
			Longitude	Latitude	
MJP-1	100.80	90	N8'294,638.2	E677,006.7	3,441.1
MJP-2	100.00	90	N8'295,108.1	E677,352.5	3,309.0
MJP-3	100.00	90	N8'294,686.8	E676,456.1	3,512.5
MJP-4	100.00	90	N8'295,133.7	E676,988.3	3,416.0
MJP-5	100.10	90	N8'295,191.2	E676,479.9	3,480.4
MJP-6	100.80	90	N8'295,480.0	E677,892.0	3,452.0
MJP-7	100.00	90	N8'294,901.1	E676,151.7	3,598.5
MJP-8	100.20	90	N8'294,865.9	E675,655.6	3,673.4
MJP-9	100.00	90	N8'294,132.0	E675,986.5	3,491.3
MJP-10	100.00	90	N8'294,354.5	E676,013.2	3,572.0

ABBREVIATIONS

(C) : crack
(Qv): quartz vein
(Fl): flow structure
(Py): crack with pyrite




SYMBOL

 quartz vein
 silicified zone
 sheared zone

EXAMINED SAMPLE

T : thin section
P : polished section
M : chemical analysis

ALTERATION AND MINERALIZATION GRADE

 strong
 moderate
 weak

SCALE (m)	GEOLOGIC COLUMN	DEPTH AND CORE ANGLE (m) (°)	DESCRIPTION	POSITION OF EXAMINED CORE SAMPLES	ALTERATION AND MINERALIZATION	ASSAY RESULTS								CORE RECOVERY	SCALE (m)		
						Sample No	Depth (m)	Width (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)			As (%)	
0		0.00	Gravels and sand (talus) gravel: pebbles, cobbles and boulders of andesite (grey porphyritic andesite)														
		3.05															
		5.10	sand: tuffaceous sand														
		7.05															
10		9.05	Grey porphyritic andesite lava (fresh) phenocryst: plagioclase 0.5-0.2cm, hornblende 0.1-2mm														
		11.25	groundmass: fine grained plagioclase and glass partly porous														
			*9.05-11.35m: sheared														
			*9.05-12.95m: light brown colored														
20		23.60															
		23.65	Light purplish grey andesitic volcanic breccia														
			breccia: angular breccia (mainly 0.1cm-1) of grey porphyritic andesite (the same composition as the above andesite lava)														
			matrix: light purplish grey to grey andesitic ash (unconsolidated to a little consolidated) partly of matrix is likely coarse sand														
			*25.05-95.85m: seems to be gravel and sand														
30																	
40																	
50																	
60		62.60	*62.60-65.05m: grey porphyritic andesite breccia														
		65.05	*65.05-66.55m: sandy ash														
		66.55															
70			Light purplish grey andesitic volcanic breccia														
			*66.55-95.85m: this interval seems to be gravels and sand														
80																	
90																	
		95.85	Andesitic volcanic conglomerate														
		96.55	Brown ~ purplish brown, altered, brecciated andesite														
		97.65	*96.35-97.65: networks of veinlet with black manganese oxides and brown iron oxides along cracks														
100		100.80															

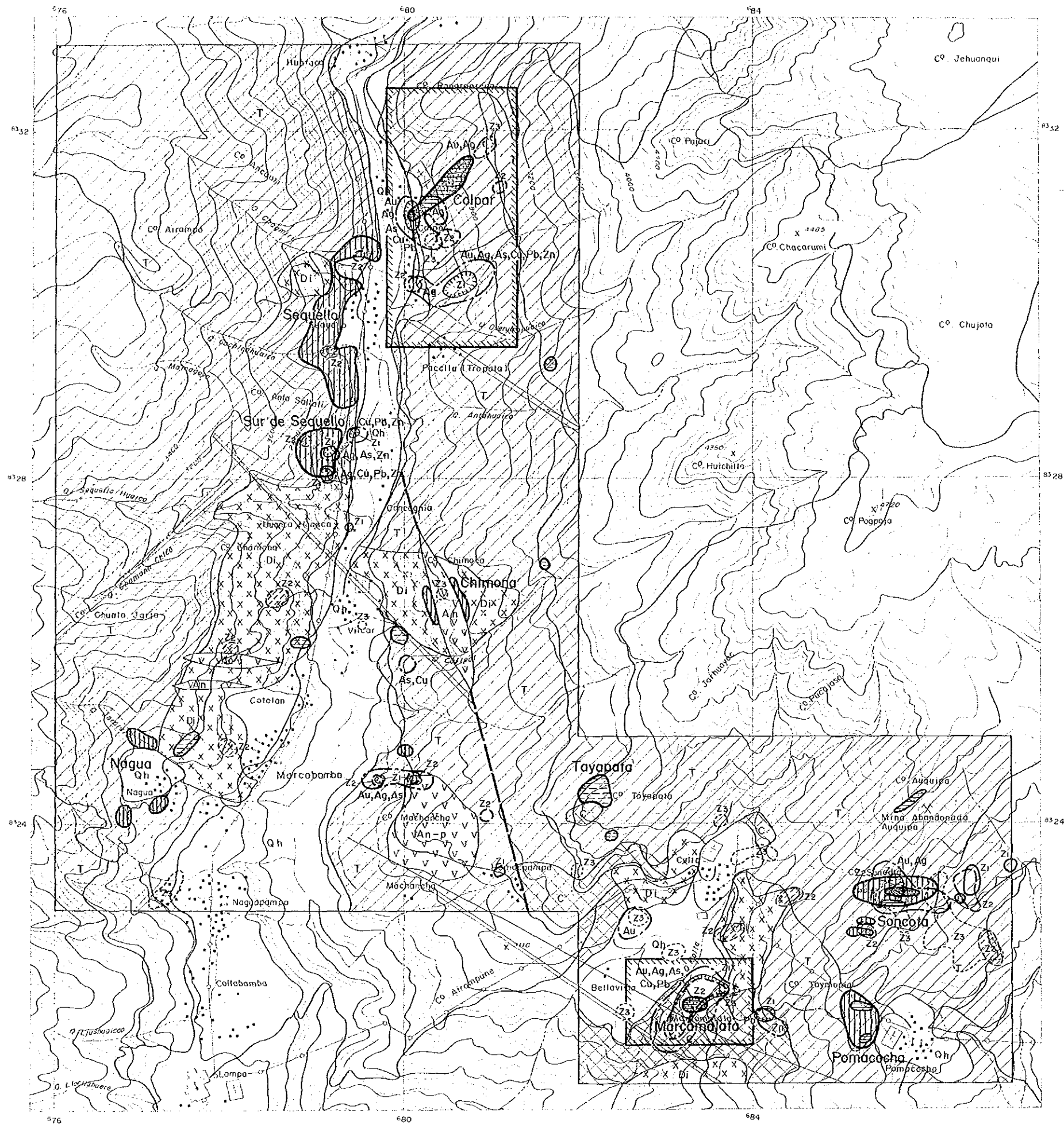
weak argillization
Mn-Fe oxides

88.10-60.15m
P&X-1

88.20-88.45m
P&X-2

96.20-96.95m
P&X-3

100.10-100.15
P&X-4



PL 34
16200

MINERAL EXPLORATION
IN
COTAHUASI AREA
(PHASE II)

INTERPRETATION MAP OF THE MARCABAMBA AREA

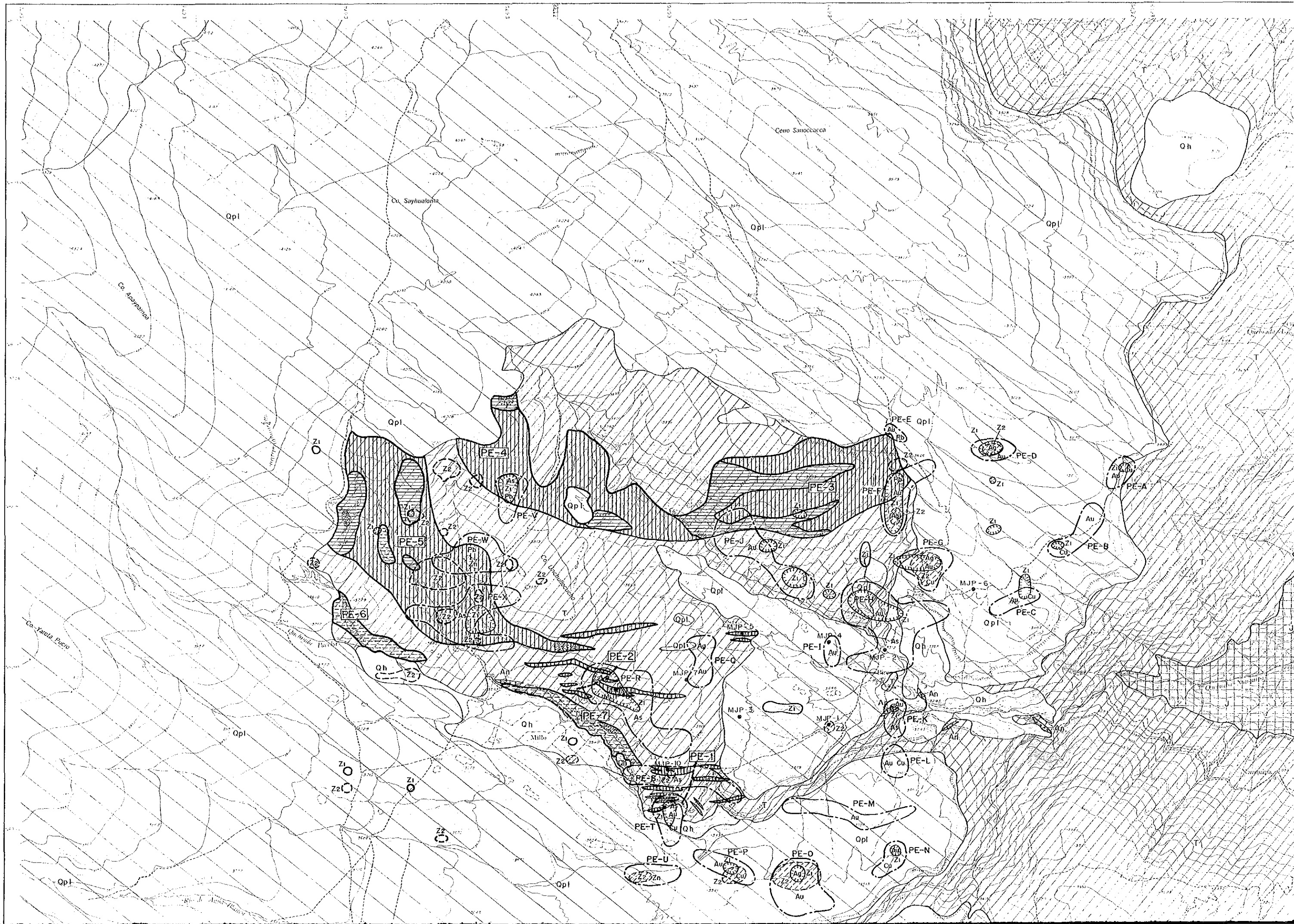
LOCATION INDEX

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Scale 1 : 25,000
0 1 2 km

LEGEND

- | | |
|---|---|
| <p>Geological System</p> <ul style="list-style-type: none"> Quaternary (Holocene) System Tertiary System Cretaceous System <p>Intrusive Rocks</p> <ul style="list-style-type: none"> Andesite Porphyritic andesite Diorite-quartz diorite <p>Other Features</p> <ul style="list-style-type: none"> Fault Lineament (Landsat) Lineament (Aerial photograph) <p>Alteration and Mineralization Zones</p> <ul style="list-style-type: none"> Mainly silicification Silicification and argillization Mainly argillization Mineralization | <p>Geochemical Anomaly (Univariate Analysis)</p> <ul style="list-style-type: none"> Anomaly zone and anomalous element (Au, Ag, As, Cu, Pb, Zn) <p>(Principal Components Analysis)</p> <p>• 1st Principal Component</p> <ul style="list-style-type: none"> + Anomaly (Z1) - Anomaly (Z1) <p>• 2nd Principal Component</p> <ul style="list-style-type: none"> + Anomaly (Z2) - Anomaly (Z2) <p>• 3rd Principal Component</p> <ul style="list-style-type: none"> + Anomaly (Z3) <p> Recommended Area</p> |
|---|---|

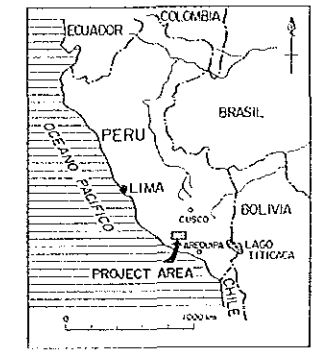


MINERAL EXPLORATION
IN
COTAHUASI AREA
(PHASE II)

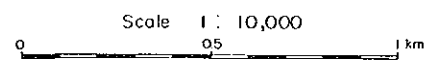
16200
16200
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INTERPRETATION MAP OF THE PIRCA EASTERN AREA

LOCATION INDEX

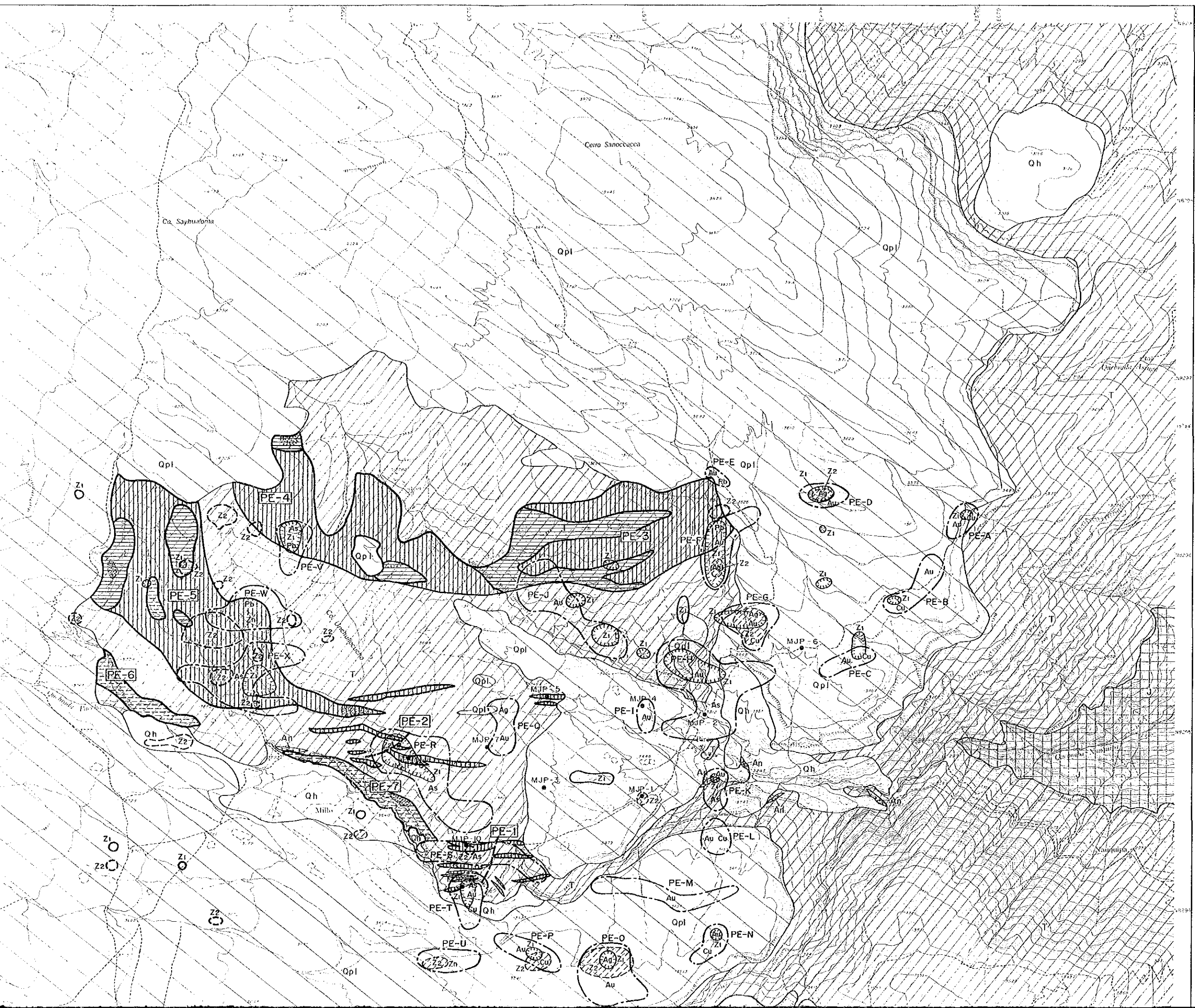


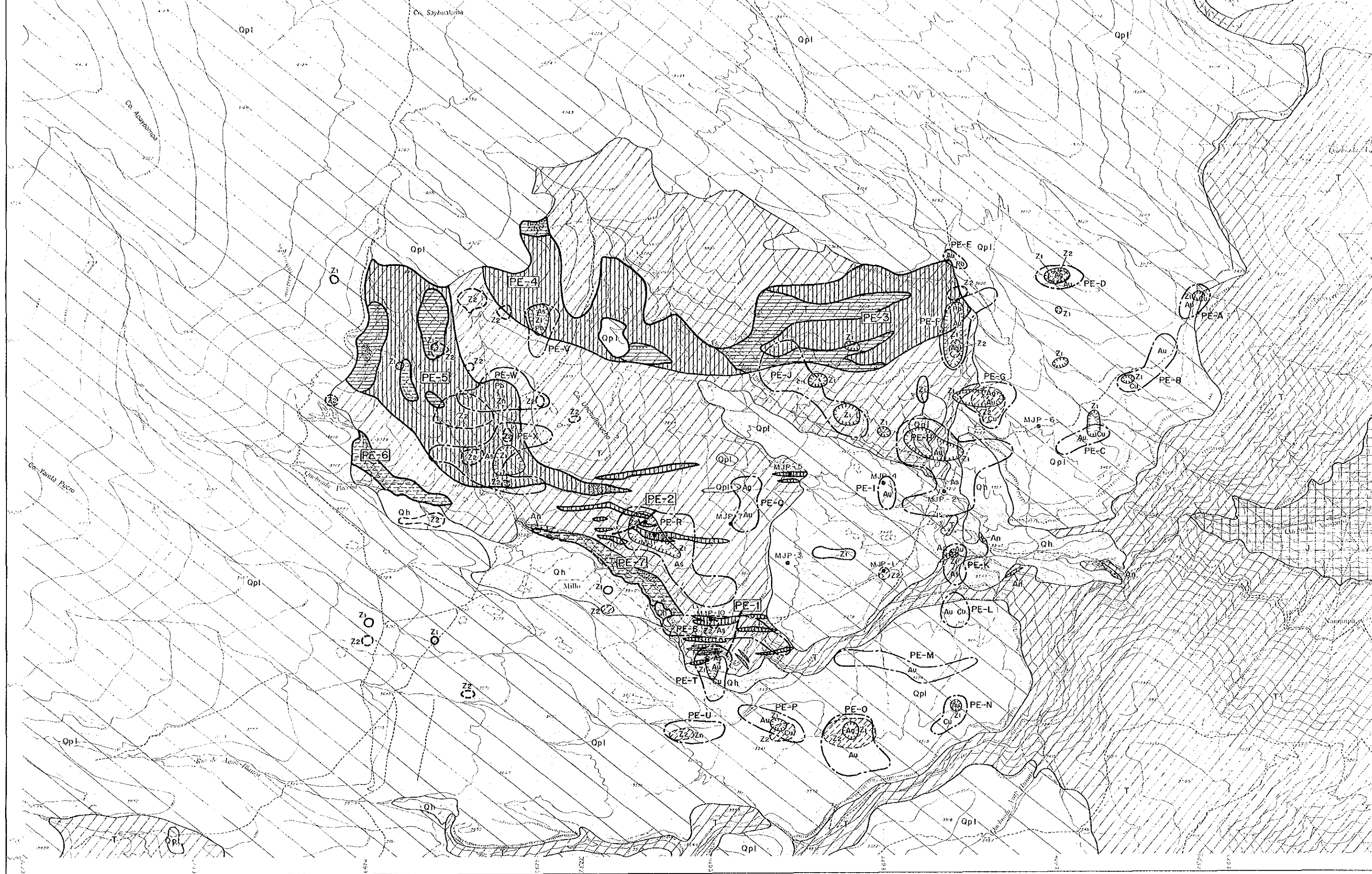
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February 1987



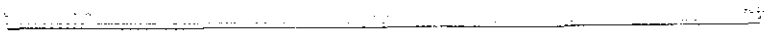
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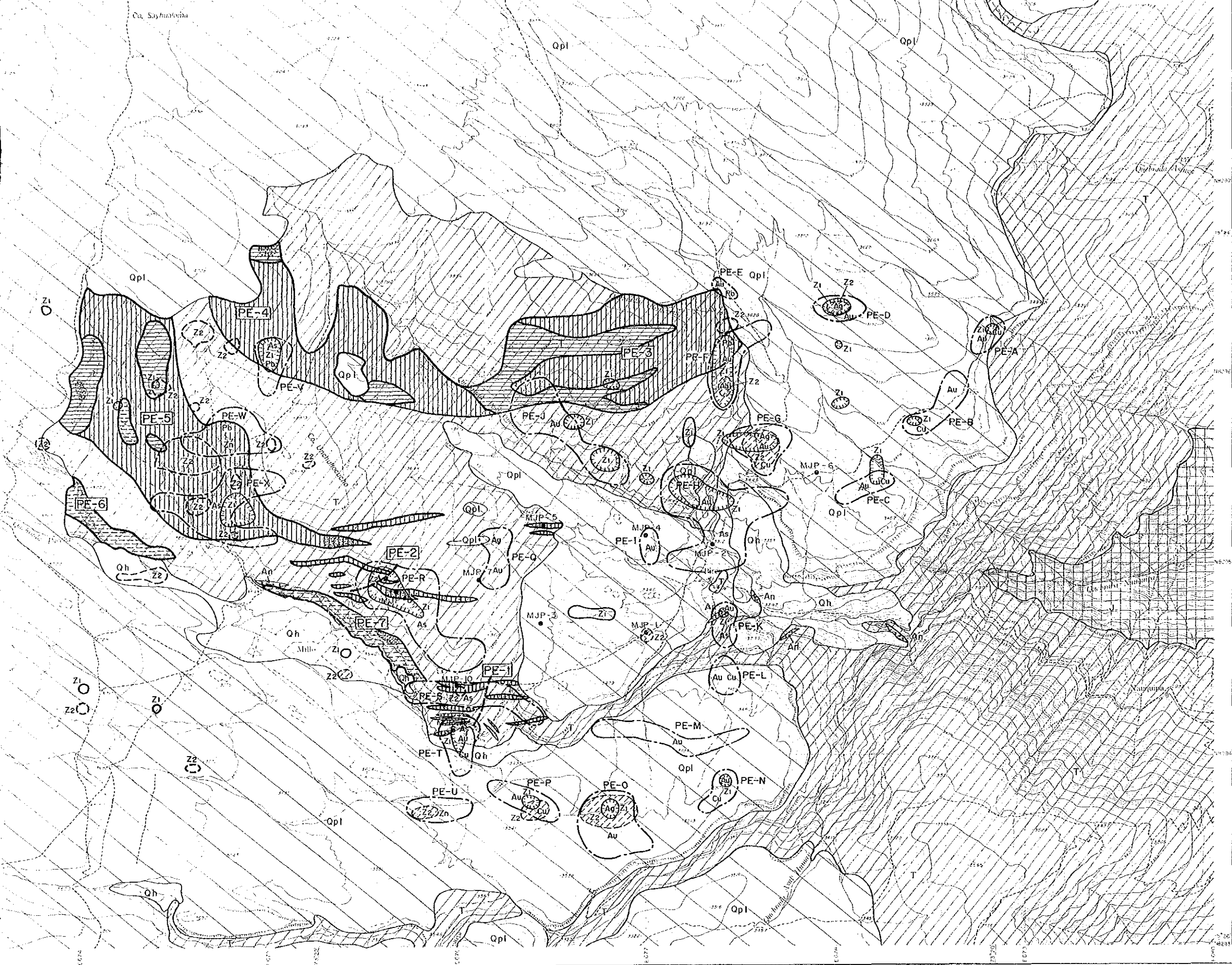
- | | |
|--|--|
| Geological System | Geochemical Anomaly |
| qh Quaternary (Holocene) System | (Univariate Analysis) |
| Qpl Quaternary (Pleistocene) System | (Au, Ag) Anomaly zone and anomalous elements |
| Tertiary System | (Cu, Pb, Zn) |
| Jurassic System | (Principal Components Analysis) |
| Intrusive Rock | + Anomaly |
| Hornblende andesite | - Anomaly |
| Fault | + 2nd Principal Component |
| Alteration and Mineralization Zones | + Anomaly |
| Mainly silicification | - Anomaly |
| Silicification and argillization | + Anomaly |
| Mainly argillization | - Anomaly |
| Mineralization | |



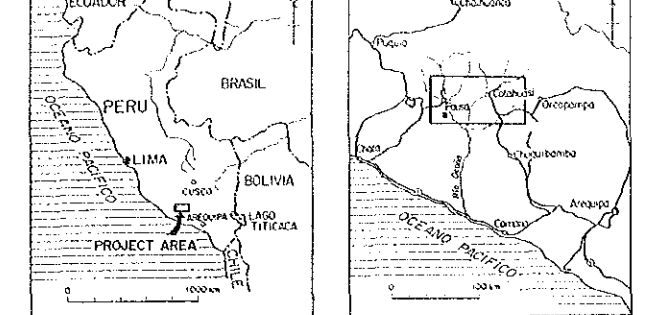


1:10,000





1:10,000

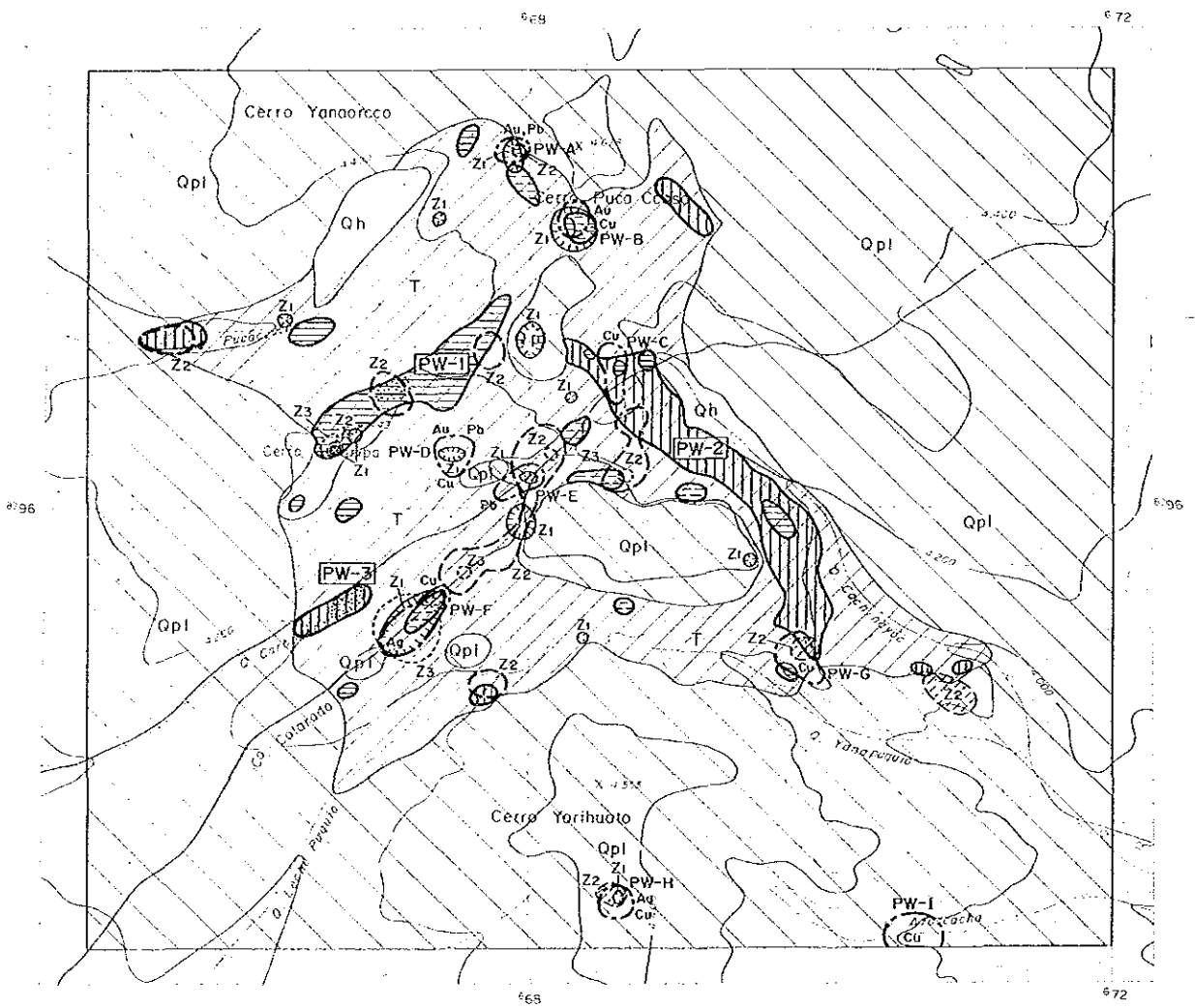


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Scale 1:10,000
 0 05 1 km

LEGEND

Geological System	Geochemical Anomaly
Quaternary (Holocene) System	(Univariate Analysis)
Quaternary (Pleistocene) System	Anomaly zone and anomalous elements
Tertiary System	(Principal Components Analysis)
Jurassic System	• 1st Principal Component
Intrusive Rock	+ Anomaly
Hornblende andesite	- Anomaly
Fault	• 2nd Principal Component
Alteration and Mineralization Zones	+ Anomaly
Mainly silicification	- Anomaly
Silicification and argillization	
Mainly argillization	
Mineralization	



- ### LEGEND
- Geological System**
- Quaternary (Holocene) System
 - Quaternary (Pleistocene) System
 - Tertiary System
- Alteration and Mineralization Zones**
- Mainly silicification
 - Silicification and argillization
 - Mainly argillization
 - Mineralization
- Geochemical Anomaly**
- < Univariate Analysis >**
- Anomaly zone and anomalous elements
Au, Ag, As, Cu, Pb, Zn
- < Principal Components Analysis >**
- *1st Principal Component**
 - + Anomaly
 - Anomaly
 - *2nd Principal Component**
 - + Anomaly
 - Anomaly
 - *3rd Principal Component**
 - + Anomaly
 - Anomaly

