INTERPRETED PIMA-II SWIR MINERALOGY

PLATE No. 2495.2

Pierina Mine 4: alteration | Epithermal acid sulphate | South American Epithermals

Sample	Mineral1	Mineral2	Mineral3	Mineral4	Possible Mineral1	Possible Mineral2	Dominant Illite/muscovite composition
001r1	illite	kaolinite					
001r2	illite						
002r	illite-smectite						tending to paragonitic (i.e. sodic and/or high octahedral Al)
004r	illite-smectite						muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
005r	pyrophyllite	kaolinite			+/-illite		
006r	smectite-illite	kaolinite					muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
007r	illite				+/-kaolinite		
008r	illite				+/-carbonate		
009v	noise						
010r	illite				+/-carbonate		
011r	illite	carbonate					
012l1	illite	carbonate	kaolinite				
012l2	illite						
013r	K-alunite	kaolinite/halloysite	dickite				
014r	K-alunite	kaolinite	gibbsite				
015r	K-alunite						
016r1	smectite-illite				+/-kaolinite		paragonitic (i.e. sodic and/or high octahedral Al)
016r2	smectite-illite				+/-kaolinite		paragonitic (i.e. sodic and/or high octahedral Al)
017r	smectite-illite				+/-kaolinite		paragonitic (i.e. sodic and/or high octahedral Al)
018r	smectite-illite	kaolinite	carbonate	chlorite			muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)

Samples on Lithotheque plates number left to right, commencing at top left. Samples are numbered 001-020. The letter after the number refers to the type pf measurement made: r = representative; v = vein; vs = vein selvage; m = matrix; c = clast; l = layer; p = phenocryst (if large). Not all plates contain 20 samples; not all samples have been measured; some samples have multiple measurements. THIS PAGE IS DESIGNED TO BE PRINTED.

Summary of Pierina Lithotheque Plates 2494.1, 2494.2, 2495.1, 2495.2, 2496.1

The alteration at Pierina is characterised by alunite (K-alunite), pyrophyllite, dickite (+/or kaolinite) and illite/muscovite. Chlorite, carbonate and smectite are identified in the regionally propylitised samples. As often observed in epithermal systems, the illite appears to be mostly Al-rich (which is often due to a paragonitic, Na-rich, composition) although more than two phases of illite are observed in many samples (one of paragonitic composition and another of more muscovitic compositions). The illite also displays variations in crystallinity, and appears to be more smectitic in the outer alteration zones. Baryte associated with the late hypogene oxidation displays a spectrum characterised by deep water absorptions, which are largely non-diagnostic. However, the main water absorption feature near 1900 nm has a minimum near 1930 nm, which is unusual for most minerals and may be characteristic of the baryte phase at Pierina.

Please note that the summary is based on a relatively small number of samples which are not spatially attributed. Conclusions drawn are, therefore, indicative rather than definitive of the spectral and mineralogical characteristics of this deposits.

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