Sample 1: BAR01

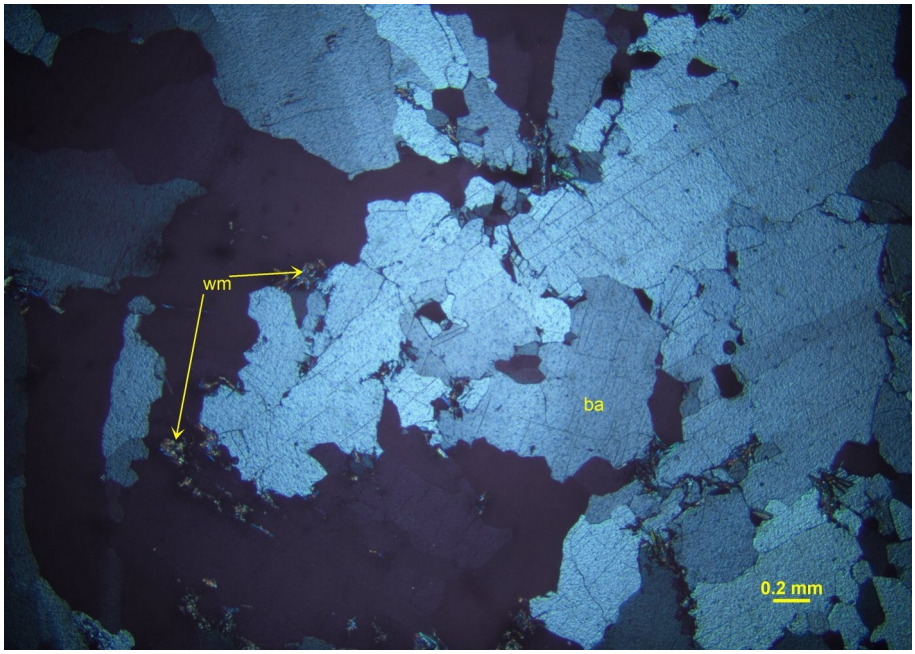
Barytite

This sample is dominantly comprised of chaotically oriented to crudely aligned baryte crystals ranging between 0.1 mm and 4.0 mm across, displaying characteristic 78° cleavage, a mottled appearance under plane and cross-polarized light and a maximum birefringence of first-order yellowish-grey. This sample has undergone significant strain and deformation as suggested by undulatory extinction, moderately well-defined subgrains and kink bands that transect the length of the slide. Tabular white mica up to 0.1 mm long and lesser iron oxide are subordinate to and occupy interstices between baryte. Iron oxide forms vibrant red to orange needle-like to amorphous aggregates that are intimately associated with and replacing white mica.

Mineral	*Alteration and Weathering Mineral*	*Modal %*	*Size Range (mm)*
baryte		94–96	0.1–4.0
white mica	iron oxide(?)	4–6	up to 0.4
iron oxide		tr	less than 0.001
quartz		tr	less than 0.001

Baryte is the dominant mineral phase in this sample. Baryte forms up to 4.0 mm long euhedral crystals identified by its three well-defined mutually orthogonal cleavage planes, maximum interference colour of first-order yellowish-grey, Moh's hardness of 3.5 and high relief. Growth of baryte appears to be limited by the presence of white mica and iron oxide; white mica-rich domains commonly contain pinning structures and feature mm-scale baryte crystals.

White mica most commonly forms interstitial, isolated, tabular to needle-like crystals up to 0.1 mm long, displaying second-order yellow interference colours. White mica less commonly forms very fine-grained aggregates hosted within intracrystalline fractures. Associated with and rarely partially replaced by iron oxide.



Photomicrograph 1a: Coarse-grained, idiomorphic baryte (ba) crystals with interstitial, needle-like white mica (wm) . Crossed polarizers transmitted light.