

Fabric in the Boston Blue Clay

Ruarri Day-Stirrat

ABSTRACT

This study represents an incremental advance in our understanding of the physical properties of mudstones as they pertain to anisotropy of permeability and velocity. We find that the addition of silt to Boston Blue Clay (BBC), following a consistent resedimentation protocol, causes the preferred orientation of clay minerals to systematically decrease at one vertical effective stress state and pore throat size to increase. Increasing vertical effective stress at one clay content has a significantly lower effect on clay mineral preferred orientation.

**CLICK ON IMAGE FOR
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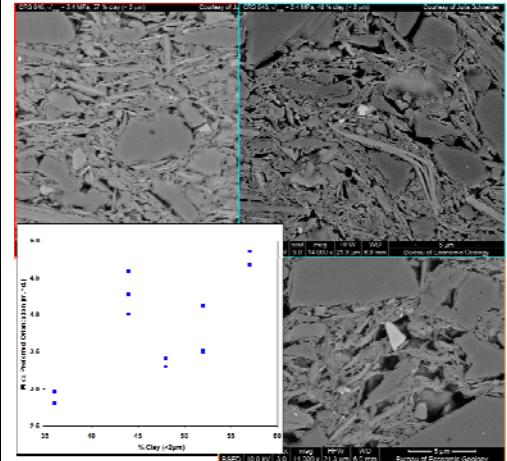


Fig. 1: Backscattered Electron Images on an Argon-ion milled surface made on a sample Boston Blue Clay (BBC) and silt. Images and quantifications show that preferred orientation decreases with increasing silt.

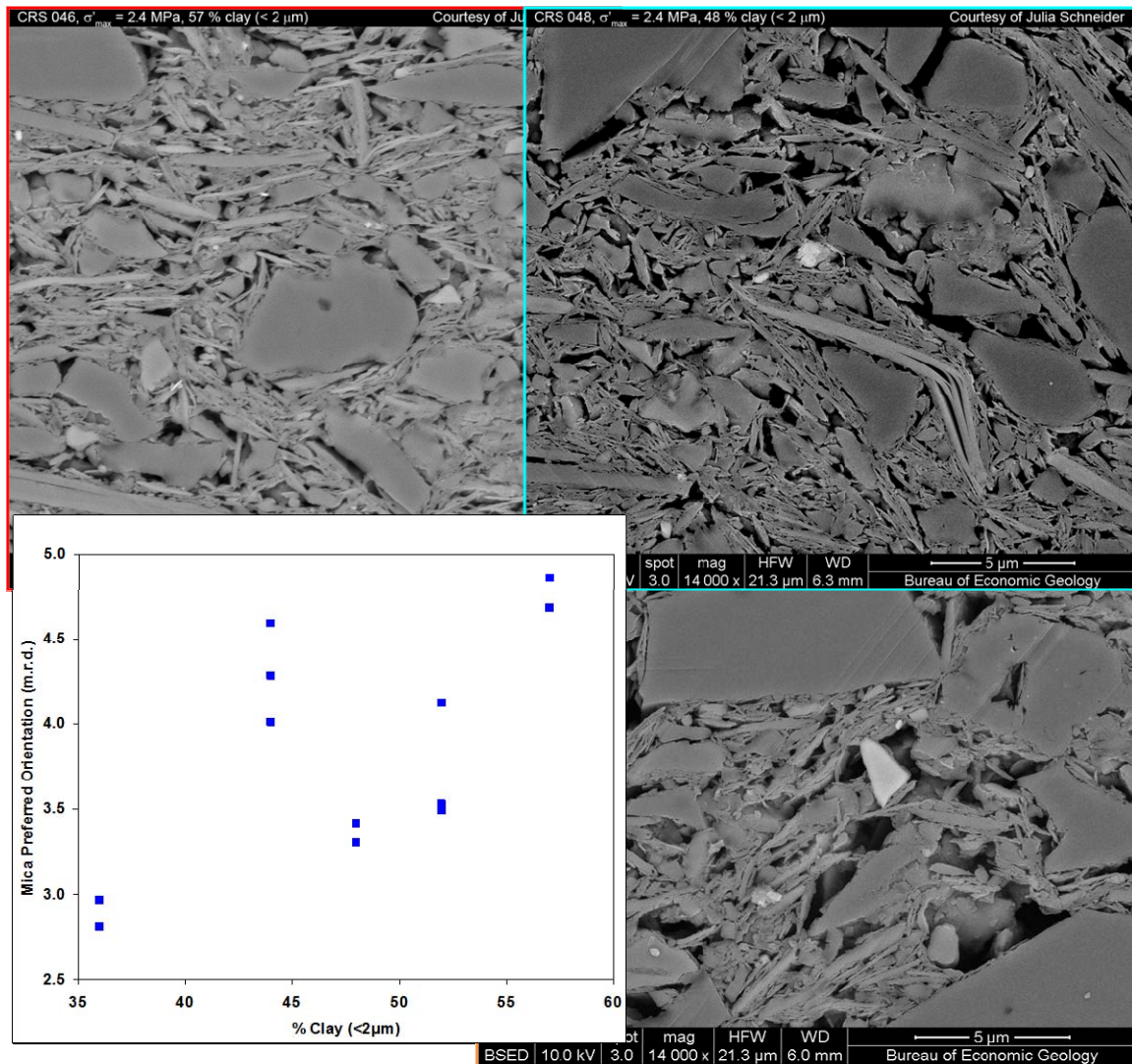


Fig. 1: Backscattered Electron Image on an Argon-ion milled surface made on a sample of pure Boston Blue Clay (BBC). Upper inset box shows mica preferred orientation decreasing with increasing admixed silt content (top). Lower inset box shows an increase in void ratio of the clay fraction (e_{cl}) with increasing silt content and decreasing mica preferred orientation (bottom).

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