GSA Data Repository Item 2008146

To determine composition of the lithic manuport discussed in the article, XRD analyses were performed using a Rigaku D/Max II X-ray diffraction system. This was employed with a curved imaging plate and a molybdenum X-ray source with a 300 micron X-ray beam diameter and 5 minute sample run time. Results show the material is composed largely of dolomite with magnesium-rich calcite, with some iron and a minor amount of silica (Fig DR1). The lighter colored exterior surface is secondary material composed of kaolinite, montmorillonite, magnesium-rich variety of calcite, and halite (Fig DR2).

Figure DR1. Percussion and pressure flaking during the drilling operations resulted in fragmentation of the manuport in Nile delta core S-50. Sequence showing the retrofit of the pieces (photos 2-6) has identified this flake as being from the central portion of the manuport. Note the pressure flaking visible along one margin of the flake as a result of rotational forces and pressure exerted on the dolomite (photo 1; see also text Fig. 3, IV). Fragmentation was likely the result of flake-on-flake impacts during the drilling process and subsequent movement of the manuport inside the core barrel.

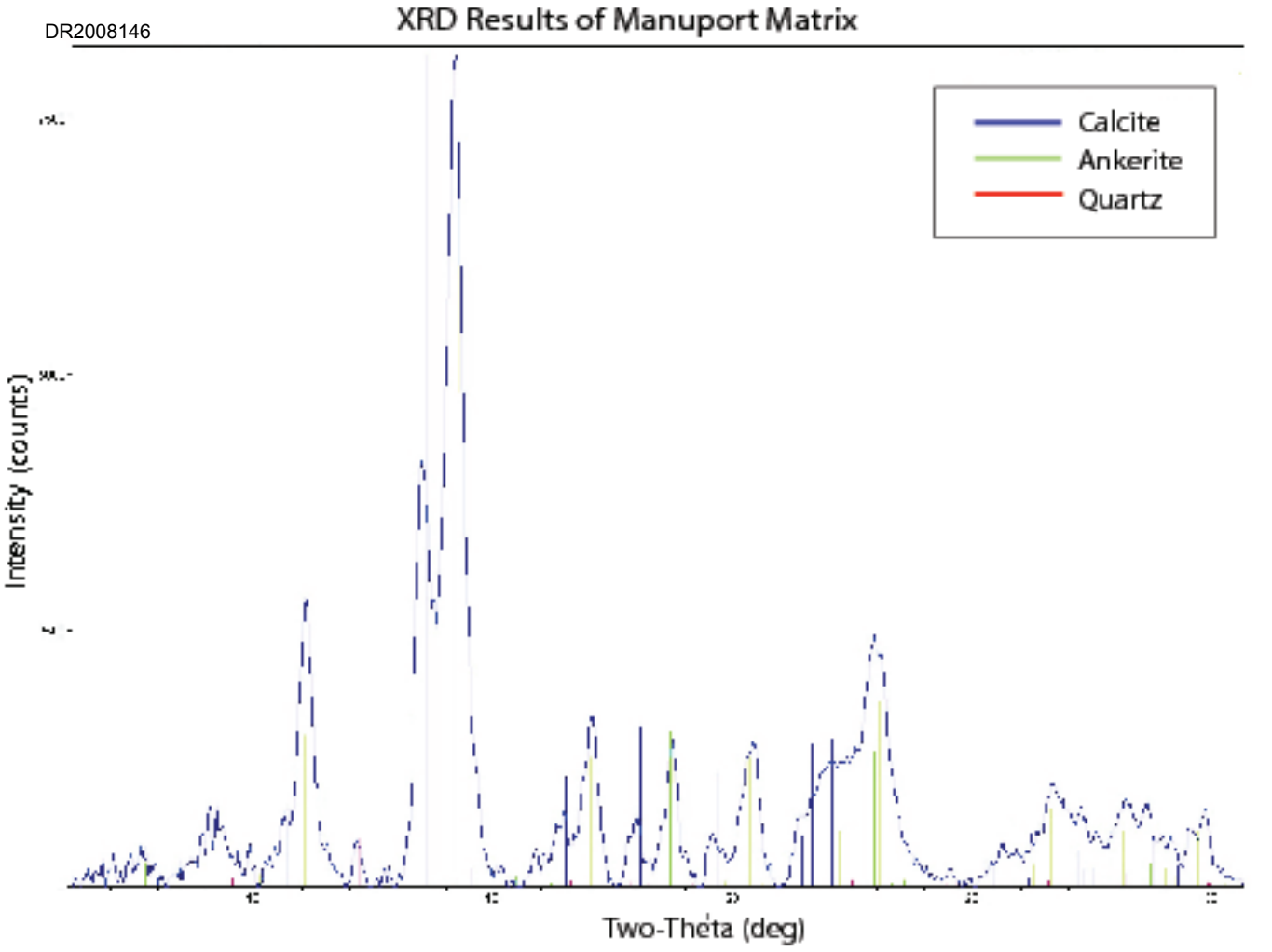

Figure DR2. XRD diagram showing the mineralogical composition of the manuport matrix. The object is composed of a version of dolomite termed ankerite (Ca,Mg,Fe,Mn (CO3)2) along with calcite (Mg,Ca (CO3) and quartz (SiO2).

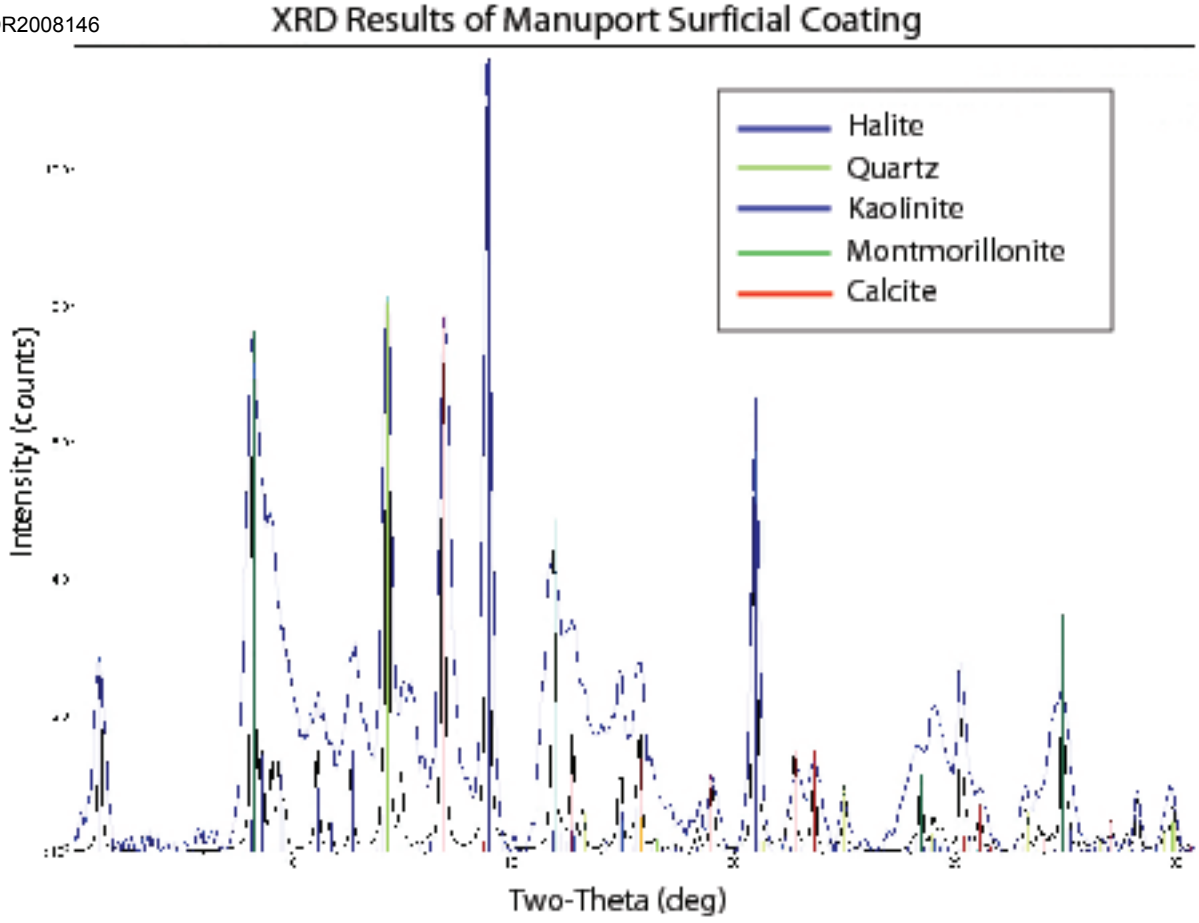

Figure DR3. XRD diagram showing the mineralogical components of the surficial coating on the manuport. This light gray to light brown material is made of kaolinite (Al2 Si2O5 (OH)4), montmorillonite (Na (Al,Mg)2 Si4O10 (OH)2 (H2O)8), calcite (Ca(CO3)), quartz (SiO2) and halite (NaCl).