

Sample: TSC47081; Location: Pelican-5, Core 1; 2791.3 m

Rock Name:

Compact sandstone

Thin Section:

An optical estimate of the constituents gives the following:

	%
Quartz	75
Pores	7-10
Lithic fragments	5
Authigenic kaolinite	5
Carbonate	3
Feldspar	1
Mica	<1

In most mineralogical and textural features this sample is very similar to that from 2790.5 m. The rock shows authigenic carbonate and kaolinite which form widely dispersed small granules and isolated monomineralic patches, respectively. Zones of notably advanced pressure solution are present but they tend in this sample to be less well defined and possibly not continuous in a horizontal direction. The limited extent of these pressure solution zones in this sample means that the rock has a somewhat higher average grain size but, even in the zones which don't show pressure solution, the rocks are only moderately to moderately well sorted. In this sample there are many grains of the order of 0.3 to 0.6 mm in size. Some parts of the rock may have a bimodal grain size distribution.

Pores in this sample are probably essentially of secondary origin and tend to range in size commonly from about 0.1 mm to 0.5 mm. Where feldspar occurs it is fresh and it seems unlikely that either the large secondary pores (or for that matter aggregates of kaolinite) are derived from the alteration of feldspar. It seems likely that the pores represent a particular kind of lithic fragment which were susceptible to dissolution. In some cases the cavities remaining after this dissolution have been filled by authigenic kaolinite. As a result, there are well defined monomineralic patches of this mineral as much as 1 mm in size. There is some textural evidence to indicate that the deposition of the authigenic kaolinite preceded that of the fine-grained secondary carbonate mineral.