

Sample: TSC47112; Location: Sidewall Core 62, 3663.6 m

Rock Name:

Compact lithic sandstone

Thin Section:

This sample is a little different from the few described immediately above in that it is a little finer grained and there appears to be an opaque or semi-opaque authigenic phase which rims and outlines many of the quartz grains. The rock shows an equally compact texture in that there are concavo-convex and sutured margins between the grains but these are marked both by the authigenic mineral referred to above and by thin smears of clays derived from adjacent deformed lithic fragments.

The average grain size of the quartz and lithic fragments appears to be about 0.15 to 0.2 mm and the lithic material probably comprises fully 20 to 25% of the volume of the rock. There are some well rounded chert grains but most of the lithic fragments are fine-grained lithologies generally consisting of phyllosilicates with or without small amounts of fine-grained quartz. Most of these rocks are probably of metasedimentary origin. There is a little detrital muscovite but feldspar is very rare.

There appears to be little or no authigenic kaolinite but the rock contains widely dispersed authigenic dolomite and this may comprise possibly as much as 5% of the volume of the sample. The dark granular authigenic phase referred to above may be an iron oxide or hydroxide mineral derived from the alteration of original pyrite or it may represent tiny aggregates of dolomite or siderite (which are so small that they appear to be opaque).

The least disturbed parts of this thin section contain no visible porosity and permeability and this has resulted from the abundance of clay, modification of some quartz grains and the presence of incipient microstylolitic zones.