

THE PETROGRAPHY OF TWO SPECIMENS FROM PELICAN NO. 3

Sample: No 1: TS 29202:

Rock Name:

Argillaceous sandstone

Location:

Pelican No. 3, 9354'

Hand Specimen:

A rather pale, medium- to fine-grained sandstone. The rock is quite massive (rather than bedded).

Thin Section:

An optical estimate of the constituents gives the following:

	%
Quartz	75
Plagioclase	1
Muscovite	<1
Argillaceous lithic fragments	15-20
Authigenic kaolinite	1-2
Voids	5
Opaques	Trace
Tourmaline	Rare

This is a sample of an argillaceous sandstone. The rock is well-compacted and 'matrix' material now consists of deformed lithic material and a little authigenic kaolinite.

The most abundant type of grain is single quartz crystals; they are generally plain-extinguishing and inclusion free 'plutonic' quartz. Some crystals contain needles of rutile which are indicative of a high-grade metamorphic provenance. Sorting has been moderately effective and most grains are between 0.1 and 0.3 mm in diameter.

Sphericities are unusually low (due to compaction, see below) and there is a vague orientation of quartz long axes. Quartz/quartz grain boundaries are not common (due to seams of clay separating grains) but those noted are generally long, concavo-convex or (rarely) sutured. Certainly the grain boundaries provide evidence of compaction and local recrystallization of quartz although no overgrowths on quartz can be seen. (This may be due to the absence of 'dirt' on the original grains, rather than to the absence of secondary quartz).