

3.11 King #1. Core plug 26, depth 1431.73m

Thin section description

The sample is a fine grained, moderately sorted, mineralogically and texturally submature subarkose. There is a vague suggestion of laminae due to differences in the percentage of matrix and alignment of elongate grains. Grains are typically subangular with low to moderate sphericity and range in diameter from 0.03mm (coarse silt) to 0.25mm (medium sand). Texturally the subarkose is grain supported with dominantly point and tangential grain contacts. Bent micas and deformed ductile lithics and glaucony indicate that there has been minor mechanical compaction.

Porosity is dominated by primary intergranular pores with open pore throats. This indicates that permeability is likely to be good. Grain size and oversize dissolution pores have also contributed to total porosity. These secondary pores are relatively more abundant in those beds where clay matrix is present (Fig. 14). Rare honeycomb pores are attributed to partial feldspar dissolution.

Quartz, K-feldspars, lithics, mica, glaucony, epidote, sphene and zircon are the framework components of this subarkose. Yellowish brown clay and rare stringers of opaque material form the matrix. Authigenic minerals and cements of carbonate spar, chlorite and kaolin are evident.

Visual Estimate of Composition		%
Framework grains	Quartz	55
	Feldspar	4
	Lithics	2
	Mica	3
	Glaucony	tr
	Accessory minerals	tr
Matrix	Clay	2
	Opaque material	1
Authigenic minerals and cements	Carbonate	7
	Kaolin	tr
	Chlorite	2
Porosity	Intergranular	15
	Dissolution	8