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volcanics most likely belong to the Hellyer Basalt and Lower Basalt units respectively. The upper most andesitic/basaltic unit is highly oxidised and completely altered to clays making its identification doubtful. The lower andesitic/basaltic unit (ie. below 977 metres), is comprised of grey through to dark green porphyritic, vesicular lavas, up to 130 metres thick in core, and hyaloclastite breccias. These show gradational contacts between each other, with the breccias generally representing the top and bottom margins of individual flow units. These hyaloclastite breccias are typically very poorly sorted, closed to open framework units consisting of angular to sub-angular fragments which periodically exhibit jig-saw fit. The matrix content of the breccias varies up to 40% in the open framework types. This matrix consists of muds and up to gravel sized hyaloclastite material.

*Andesitic/Dacitic Volcanics:* The bulk of QR-1060 and QR-1060A is comprised of massive andesitic lavas and autoclastic breccias. The lavas are feldspar-phyric and mid green grey to buff coloured depending on the style of alteration. Feldspar phenocrysts make up to 20% of the lavas and are commonly cream to pink in colour, while another phenocryst phase present, in some flows making up to 15%, is probably clinopyroxene. Up to 10% vesicularity has been recorded from the intermediate lavas in the footwall sequence (ie. 802-832m; 910 m), however the lavas are typically non vesicular to very weakly vesicular. Flow banding has been recorded from the tops of some flows which, in core, vary in thickness up to about 50 metres (Fig. 9). The contact of these massive lavas with the autoclastic breccias is gradational.

The autoclastic breccias consist of very poorly sorted, closed to open framework breccias up to 10's of metres thick. Fragments within the breccias vary from aphyric to strongly porphyritic, averaging in size between 5 and 15 centimetres with fragments up to 30 centimetres having been recorded (Figs. 10a and 10b). These fragments are typically angular to sub-angular and splintery in appearance and have straight to very weakly concave margins. These margins in some cases appear to have been chilled. Some of the larger fragments exhibit jig-saw fit (ie. 330-340m), with the margins of these larger fragments commonly enveloped by finer granulated material. The frequency of fragments with jig-saw fit as well as fragment size generally increases toward the contacts with massive lavas.