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balling problems as outlined in points i) and ii) above.

- (iv) Low pH clay strata dispersing in the mud pit created an acidic circulating medium. The low pH of the circulating fluid precluded clay size particles from flocculating or settling from suspension, and meant that flocculating additives were rendered ineffective. Hence the circulating medium remained highly viscous.

A. 7.3.2 Exploratory Drilling, March-April 1982 Exploration Programme

The typical drilling practice was to drill up to two metres with $6\frac{3}{4}$ " or $5\frac{3}{8}$ " diameter bits using compressed air to return cuttings. A conductor pipe and T-piece were then set in the hole. The bits were changed to $4\frac{3}{4}$ " or $4\frac{1}{2}$ " diameter and the circulating medium to water cuttings were then flumed from the stand pipe, via the T-piece, onto a $\frac{1}{32}$ " - $\frac{1}{4}$ " mesh screen which was placed over an above ground mud tank. Cuttings accumulated on the screen, and samples were taken every metre. When sandy strata were intersected, finer mesh screens were used for sample collection.

Blade, tricone roller, and hammer bits were used during the programme. Tricone roller and hammer bits were used to penetrate Tertiary basalt.

The main drilling problems encountered during this drilling programme were;

- . maintaining an effective stand pipe seal in Quaternary alluvium, and weathered, often gravelly Tertiary basalt.
- . Drilling Tertiary basalt.