

B. Bit Optimisation and Bit Analysis

Refer to the Bit Summary, Table 1.

Bit costs, a rig cost of 5000 AUS \$/hr and a trip time of 0.8 hr/km (0.25 hr/kft) were used to compute instantaneous and running costs. Drilling/cost optimisation was made on the basis of that point at which cumulative cost reached a minimum, and instantaneous cost intersected the cumulative cost curve. Drilling parameters were maintained within the recommended work ranges, though WOB and RPM were varied to maximize and/or control the drill rate where necessary. No bits were tripped out as a result of cost/m criteria.

The 36" and 26" hole sections were drilled with the same bit (the 36" section incorporated a hole-opener in tandem with the 26" bit). Both runs produced minimal wear and relatively good rates of penetration through the surface formations.

The 12.25" pilot hole section was drilled utilising only 2 bits (not including the first run which drilled out the casing shoe and 2m of new formation) and both showed tooth wear consistent with the lithologies drilled, specifically the volcanics at 1260-1393m (4134-4570'). The majority of the sediments in this interval were non-abrasive, poorly compacted claystones and were thus ideally suited to the milled tooth bits chosen. This 12.25" section was opened out to 17.5" by the use of one bit only. Again, it is assumed most of the tooth wear was due to the volcanics. No bits had reached their cumulative cost minimum.