



**EXPLORATION
LOGGING
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GEOLOGICAL-ENGINEERING REPORT No.4
Tilana No.1 / AMOCO AUSTRALIA
EXLOG UNIT 216 / DIAMOND M "EPOCH"

28th Sept - 4th Oct 1985
7173 ft - 9149 ft
2186 m - 2788 m

Report by : D.New, J.Strautins

OPERATION SUMMARY

NB#12 drilled ahead through dolerite/gabbro at ROP's of between 2 and 5 m/hr (5-15ft/hr). At 2336.9m (7339') a drilling break occurred and bottoms-up was circulated at 2238.8m (7345') with a minor increase in gas. The drilling break appears to have been due to a fracture/fault within the gabbro. At 2256m (7401'), 2260m (7414') and at 2265m (7431') torque increased and became erratic but became normal again by 2268m (7441') where the ROP decreased to 3m/hr (10ft/hr). At 2299m (7542') the ROP increased to 45m/hr (150ft/hr) and a negative flow check was made at 2300.6m (7548') with bottoms-up being circulated at 2303m (7557'). After a negative flow check at 2321m (7616') bottoms-up was circulated at 2323.3m (7625') prior to a 10 stand wiper trip. A maximum of 330u (6.6%) of gas was recorded from a coal just before bottoms-up and circulation continued until the hole was clean. The wiper trip was made with no problems. After a connection at 2334m (7656') the torque became high and very erratic and continued to increase until bottoms-up was circulated and the bit pulled at 2429.5m (7971'), by which time the ROP had decreased to 1m/hr (3.2 ft/hr). The high torque and low ROP were found to be due to the cones on the bit being locked. No hole problems were noted.

After successfully testing the BOP's, NB#13, a SMITH F3, was run with one nozzle being partially plugged during the trip in. Because of this, the pump rate had to be reduced resulting in low annular velocities and poor bit hydraulics. After a connection at 2542m (8340') torque increased and became very erratic indicating a locked cone. Drilling continued to 2566.5m (8420') where a high-vis pill was circulated, a survey dropped and the bit pulled. Drag of 20 klbs was noted from stand 8 on the trip out. All three cones were loose and the bit was graded as T1 B8 G0.

NB#14 was run and drilled to 2788.6m (9149') where bottoms-up was circulated, a survey dropped and the bit pulled to cut core No.2. Drilling breaks were flow checked at 2615m (8579'), 2675m (8776'), 2708m (8884') and at 2783.5m (9132'). Returns were circulated at 2623.5m (8607'), 2678m (8675'), 2783.5m (9132') and at 2788.6m (9149') prior to pulling out of the hole.

Surveys gave inclinations of 0.5 deg at 2324m (7627'), 0.75 deg at 7971') 1.5 deg at 2566m (8420') and 2 deg at 2713.3m (8901').

Current operation at 2400hrs 4-10-85: POOH with NB#14 prior to cutting core No.2.