Daily Drilling and Scientific Report for IODP Expedition 325, Great Barrier Reef Environmental Change

5th April 2010 (0000 - 2400 local time)

1. Location

In transit to Townsville

Time zone: Brisbane Australia Time, UTC +10

Position at midnight (in transit):
Latitude: 17° 03.4 S
Longitude: 146° 17.2 E

2. Activity summary

Coring operations were completed at M0058A. All pipe was tripped and the drill floor and moonpool made secure in preparation for transit. De-mobilisation of the ESO containers began, continuing during the transit back to Townsville.

3. Science report

Cores 1X-2X recovered continuous sequences (71-78% recovery) of grey-green lime mud with visible benthic forams, planktonic forams, echinoid spine with identified black grains down to 5.6 mbsf. Core 3X advanced to 8.6 mbsf and passed through a lithologic change from the grey-green lime mud to grey-green silt and fine sand composed of abundant large benthic forams (3-5 mm to 1.5 cm) (eg. Peneroplis?) and visible bryzooans. Core 4X continued to 9.9 mbsf and encountered something hard at ~ 9 mbsf. The recovered material confirmed this with a transition from the grey-green silt and fine sand to a well lithified medium grained dark grainstone composed of benthic forams, bivalves, echinoid spines and bryozoans. This marks a major change in lithology. Switched to an ALN bit for Core 5R in anticipation of more hard material but unfortunately were unable to recover any material down to 11.6 mbsf. Switched back to the EXN bit but again recovered little in Core 6X down to 14.6 mbsf. Some bioclastic sediments (wash?) were observed in the core catcher sample. Cores 7X-8X recovered 6 m of grey-green mud-silt down to 20.60 mbsf. Cores 9X and 10X advanced to 26.4 mbsf with 100% recovery and were composed of similar light grey-green mud-silt. The core catcher of Core 10X recovered a light clay. Cores 11X and 12X continued a further 6 m to 32.4 mbsf, recording a marked change in lithology to grey-green silt and fine sand with abundant large benthic foraminfera from the lithology cored in 3X. Core 13X advanced to 35.4 mbsf. The upper section was characterized

as lime sandy clay. Homogeneous olive gray clay was continued through both Cores 14X and 15X, advancing to a final depth of 41.4 mbsf.

4. Core recovery details

Hole	M0058A
LAT water depth	167.14m
Cores recovered	1X – 15X
Drilled length	41.4m
Recovered length	33.88m
Recovery	81.84%
Depth at midnight	41.4mbsf (final depth)

5. Weather

Sea state: moderate (4) with a swell of 1.25 – 2.5m decreasing by midnight to slight (<1.25m swell); wind direction E alternating force 4 to 5 (17 – 21 knots); predominantly overcast with sunny periods around midday; periodic heavy showers; 28°C.

Next 24 hrs: Sea state moderate with swell of 2.2m in open waters and 1.2m inside the reef; wind direction E/SE 20 – 25 knots overnight; scattered squally showers.