



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

19th February 2010 (0000 - 2400 local time)

1. Location

Site HYD_01C Site 3 (Hole M0034A).

Time zone: Brisbane Australia Time, UTC +10

Position at midnight:

Latitude: 19° 41.535 S

Longitude: 150° 13.815 E

2. Activity summary

Coring activities continued at M0034A until a twist off of the HQ drill string inside the API pipe resulted in fishing operations to recover the broken string.

3. Science report

Site M0034A is the -50m reef target. The sea floor was comprised of sand and patches of gravel. Core 1R recovered 80cm of coral framestone comprised of well preserved insitu massive *Porites* sp. and other broken coral fragments (Faviid), coated by coralline algae and microbialite crusts. Core 2R recovered similar broken coral framestone fragments. Core 4R advanced to 6mbsf and recovered 50cm succession of coral framestones composed of massive corals (*Acropora* sp?), coralline algal crusts, microbialite and abundant cavities infilled with light grey mud with visible bioclasts (ie. benthic forms). Cores 5R and 6R had no recovery, indicating difficult drilling conditions related to large cavities or interlayered unlithified sediments within the coral reef framework between 6-9mbsf. Core 7R advanced to 11mbsf, once again recovering coral, algal-microbialite framestones – albeit broken. *Acropora palifera/cuneata* was observed in this core confirming the likely shallow high energy depositional setting.

The first core using the HQ system, Core 8R, recovered framestone with corals (mainly *Acropora* sp.) and thick microbialites (ca. 6cm or more), some of which had stromatritic structures. Cores 9R-12R advanced to 18.6mbsf with greatly improved recovery and high-quality core. Well developed and continuous sequences of framestone were recovered with massive corals (*Acropora* sp., Faviids), thick microbialites and coralline algal crusts.

4. Core recovery details

Hole	M0034A
Cores recovered	12
Drilled length	18.6m
Recovered length	6.06m
Recovery	32.58%
Depth at midnight	18.6mbsf

5. Weather

Sea state: moderate (4) with swell of 1.25 – 2m; wind direction E becoming ESE force 6 (22-27 knots) decreasing to 4 (11-16 knots); partly cloudy becoming overcast in the afternoon; 28°C.

Next 24 hrs: Sea state moderate with swell of ~2.2m; wind direction SE 20-25 knots; scattered showers.