

**Daily Drilling and Scientific Report for IODP Expedition 357
Atlantis Massif Serpentinization and Life, 2015**



12th Nov 00:00 - 24:00 Local Time (-2 GMT)

1. Location

30° 14.198' N 42° 11.006' W
IODP-MSP N/A as running a multibeam survey
Prospectus borehole N/A as running a multibeam survey
Water Depth: 2580m

2. Science Report

Eight cores were recovered, although core 4 was the open hole section with no recovery. 6.50 m of core was recovered, ranging from 24-41% recovery in the upper 5 cores and 71-103% (including the shoe piece) recovery in the lower sections. The cores consisted predominantly of serpentinite with talc-amphibole alteration, minor gabbro and rodingite. The cores showed varying density of serpentine-amphibole-talc veins, mylonitic deformation and degree of drilling induced fracturing. Five whole round core samples were collected for ephemeral microbiology, geochemistry and contamination testing from cores 1R, 3R, 5R, 7R, and 8R, with the rest of the material archived for OSP sampling. Niskin water bottles on the rock drill were collected at the end of active drilling for comparative geochemistry and microbiology analyses. A sensor package on the rock drill collected logs of methane, pH, dissolved oxygen, and redox while drilling.

Due to deteriorating weather conditions, drilling operations were halted. A multibeam survey was conducted over proposal sites AM-05 and AM-03, followed by a ship's CTD cast over the Atlantis Fracture Zone at 4134 m water depth for background microbiology and radiocarbon analyses, and a second CTD over proposal site AM-05. A N-S oriented multibeam survey over the western portion of the Atlantis Massif began in the evening.

3. Core Recovery Details

Hole	M0072B
Cores recovered	7
Drilled length (Coring, m)	11.6
Drilled length (Open hole, m)	0.825
Recovered length (m)	6.5
Recovery (%)	52.3

4. Weather

SE winds swinging SSW 14 – 18 knots. Maximum temperature 24°C. Good visibility but scattered showers / squalls throughout the day. Patchy cloud. Low swell and slight seas.
Next 24 hours: Monitoring activity of Hurricane Kate. Currently moving to the NE of our position, but winds and swell may temporarily increase over Friday and Saturday

5. Planned Activity for the next 24 hours

Officially waiting on weather as unable to launch either seabed rock drill due to the knock-on effects of Hurricane Kate passing to the north of this location. However, during the "downtime" we will endeavor to complete a multibeam survey of the Atlantis Massif and conduct a CTD cast at AM-09A.

6. Health and Safety and Environmental

Waiting on weather.

7. Photos of the day



Acquiring multibeam under the guidance of Andrew, one of the vessel's system support team.
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Marianne collecting drill liner fluid for PFC measurements. CarolCotterill@ECORD_IODP