

Jason Dive J2-215, August 9-10, 2006 (GMT)

08:02 Off Deck

09:21 On Bottom: 3° 44.19'S, 151° 42.41'E, 1683 mbsl

23:59 Off Bottom: 3° 42.71'S, 151° 41.11'E, 1658 mbsl

01:05 On Deck

Aim:

The goal of the dive is obtaining a solid / fluid sample pair from a lower-temperature vent at Roman Ruins (WP1), and then exploring a potential new vent field in the area of a combined temperature, Eh, and backscatter anomaly seen in the ABE survey about 1.5 km away.

Co-ords for the landing site:

- **Lat/long: 3° 44.19'S, 151° 42.41'E, 1683 mbsl**
- **UTM: 352598, 9587938 (WGS84 Zone 56S)**

Summary

Vanko: On approaching the seafloor NW of Roman Ruins, smoke was visible in the Medea camera at an altitude of 180 m. This continued all the way down to 10 m. The first view of the seafloor was of moderately sedimented lava rocks, in pillow and tubular forms as well as slabby rocks. Visible biology was very scant – rare solitary soft corals.

Tivey/Bach: After waiting a considerable time for navigation difficulties to be resolved, the SM2000 survey of the hydrothermal field (a continuation from dive 213) was conducted. The survey ended at 16h25. We head to WP2 to look for a small fissure venting clear to smoky fluid. After some hunting we find the spot. The crack has a bunch of small 25 cm high smokers with beehive tops to them coming out of the substrate. We decide not to sample fluid here. We took a sample of the underlying rock that the chimneys are growing on. This material is very soft but we manage to get a piece (J2-215-1-R1, x2694 y3172 z1670). We then decide to head to the next waypoint that is about 1500 m to the northeast which was documented by ABE to have hydrothermal activity in terms of Eh, temperature anomalies and high optical backscatter. We will pull Jason up off bottom and have the ship steam more quickly over there,

Vanko: Jason got underway at a high altitude on a course of about 055° for over 1.2 km to the potential new hydrothermal site. We landed on the seafloor about 200 m SW of the target and drove slowly to the target. The seafloor is moderately sedimented lavas, some very blobby, with very rough surfaces and fairly rough topography on the 1-3 m scale. Biology is scarce, consisting of one sea pens and soft corals. Reaching the target coordinates, we find no evidence of hydrothermal activity, so we continue on the same NE heading for 60 or 80 m, then u-turn right to reverse course. Eh has been slowly climbing over the past 30 minutes from 130 to 151 units. We see a lone galatheid crab, and then a lone sponge. We identify and explore an area of seafloor that has broadly scattered bright yellow flocculent biomats growing along cracks in rocks or from underneath rocks. Some shimmering water was measured at 9.0°C. Eh in this region drops as low as 110 units, and we obtain a sample of lava rock with yellow floc in a shimmering water area (Sample 215-2-R1; vvan 38378).

This diffuse field is perhaps several tens of meters in extent in any one direction, and we are skeptical that it could have been responsible for the ABE anomalies. Twice we elevate Jason to the 50-m altitude of the ABE survey to see if we can detect a drop in Eh. In one case Eh goes up, and in another case it drops from 154 to 150. The only geological observation of note is that the seafloor at the southernmost track of our survey, south of the target area, becomes very heavily sedimented (95% sediment covered), so it is less-recently active volcanically.

Bach: We continued the survey going around the previously examined area to the NE, then to the SE. A small oxide field without obvious shimmering water, but with a slight Eh anomalie, was found at x3990, y4100. Very few animals here. The survey was continued to the SE, without finding further hydrothermal indications. After the ABE map of the area became available, we picked and visited mounds and escarpments in the map at x3750, y4040, at x3820, y4135, and at x3920, y4220, without seeing any evidence for hydrothermal activity. The area is marked by blocky lava forming mounds and levees. Sediment cover is generally thick.