

HAWAI‘I UNDERSEA RESEARCH LABORATORY
QUICK LOOK REPORT
DIVE:675

MISSION STATUS

Location: Penguin Banks, South Face, Molokai

Latitude: N20° 44.296

Longitude: W157° 51.651

Mission Date: 9/10/06

Duration: 8hrs, 36mins

Maximum Depth: 1706m

Project Title: Search for Penguin Shield Volcano

Principal Investigator: Ken Rubin,

Address:

University of Hawaii, SOEST, Department of Geology and Geophysics, 1680 East West Rd., Honolulu, HI 96822

Phone: 808-956-2582

Observer 1: Chip Fletcher

Observer 2:

Address: University of Hawaii, SOEST,
Geology and Geophysics, 1680 East West Rd., Honolulu, HI 96822

Address:

Pilot 1: Terry Kerby

Pilot 2:

Scientific Data Acquired: Prepare an abstract outlining your objectives, techniques, findings, etc.

Objectives:

The objective of this dive is to find and sample evidence of a volcano or other feature forming the core of Penguin Banks. The origin of the Banks has long been the subject of conjecture that a “missing” shield volcano forms the internal structure of the large mid-bank platform. Our goal was to search for volcanic outcroppings that might verify or refute the hypothesis of a volcanic origin.

Observations, findings, etc:

We descended onto a rolling carbonate sand/silt bank at -1706m depth. It lacked beforms and was covered with a thin dusting of organic precipitate. Outcroppings of Mn-coated

rock were encountered and searched for using Sonar. Outcrop size ranged from 5mx3m to 10mx10m. Surface texture was knobby and Titan arm sampling reveals a dusty precipitate of black color adhering to the rock, prob. Mn due to pore water release from the sediment.

Proceeding upslope the size and frequency of outcroppings increased and soon became a talus pile at the base of a cliff that rose from 1122m to 785m. The wall was characterized by basalt with occas. pillow and columnar structures. No dikes were observed. Occas.ropy, and rubbly texture observed. Minor terraces, platforms, overhangs, ridges, caverns, and other topographic features were frequent.

The top of the wall was at 785m and quickly flattened into a carbonate mud bank similar to the lower one. The mud was characterized by scabby-looking carbonate outcrops that revealed no obvious character other than to be a heavily weathered rind. However, the one sample obtained turned out to have obvious coral structure that appears to be in relatively good shape.

Observed Species list:

Not a biological dive.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

No problems other than ran out of time.

Recommendations for corrective action or improvement:

None

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.

The mission definitely accomplished its purpose in all respects – very promising samples for identifying volcanic origin, dating, and paleosea-level analysis collected.

List specimens or samples collected on the mission.

15 rock samples.