HAWAI'I UNDERSEA RESEARCH LABORATORY
QUICK LOOK REPORT
DIVE: P5-622

MISSION STATUS

Location: Rumble V, Kermadec Arc

Latitude: ***Begin*** 36° 09.015'S **Longitude:** ***Begin*** 178° 12.002'E

Mission Date: April 21, 2005 **Duration:** 2 hours 40mins (Bottom Time)

Maximum Depth (m): 796m

Project Title: New Zealand American Submarine Ring of Fire Leg II

Principal Investigator: Bob Embley

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Phone: (541) 867-0275

Observer 1: Malcolm Clark **Observer 2:** None
Address: NIWA, PO Box 14-901, Wellington, New Zealand

Pilot 1: Terry Kerby **Pilot 2:** Steve Price

Scientific Data Acquired:

Objectives:
The goals of this dive were to (1) Explore Rumble V cone, (2) Sample hydrothermal rocks, minerals, fluids, animals and deposits, and (3) Undertake mapping to locate best vent sites for later fluid sampling.

Observations, findings, etc: (Also see Appended Dive Log)

Started dive at 795m on the southern slope and explored northwards up the slope cutting across strong structural flows of pillow lava. A high diversity of deep invertebrate and fish fauna was seen. We were advised 2.5 hours into the dive that weather at the surface was deteriorating, and the dive might be shortened. Consequently we headed straight for the best vent target, known mussel beds to the east of the summit. Large expanses of dead mussels were seen, and at 1130 a live bed was seen at 486m. Sampling was carried out hurriedly there before having to abort the dive because of the topside wind and sea conditions.

Species List: (seen & sampled)

Gigantidas gladius
Dermechinus sp.
Projasus parkeri
Oxynotus bruniensis
Tripterphycis gilchristi
Coelorinchus sp.
Hyperoglyphe antartica
Hoplostethus mediterraneus
stargazer
scale worms
corals
urchins
seastars
scorpion fish
gastropods

MISSION EVALUATION:

A. Limitations, failures, or operational problems noted:

On this dive the Fornari digital still camera was not working due to a cable/connector problem.

B. Recommendations for corrective action or improvement:

None

C. In your opinion, did the mission essentially achieve its purpose?

No – because bad weather forced mission to be abandoned.

D. Compare actual work accomplished with the work that was expected to be accomplished.

Only located one diffuse vent site/fauna. Did not explore all of cone to determine extent of venting elsewhere.

E. List specimens or samples collected on the mission. (See Sample List Below):

21 April 2005 Time Zone: +12

Sample Number	Time (L)	Latitude Min/decM	Longitude Min/decM	Depth(m)	Comments

		36°S	178°E		
PV-622-1-B	9:27	9.010	12.000	794	*Dermechinus* sea urchin
PV-622-2-R	9:40	9.010	12.000	796	Small pieces of surface pillow flow
PV-622-3-B	11:30	8.439	11.894	486	Sample of *Gigantidas* mussels
PV-622-4-MS	11:33	8.439	11.894	486	Sample from above mussel bed, 11.2 deg.
PV-622-5-MS	11:36	8.439	11.894	486	Sample from above mussel bed
PV-622-6-R	11:43	8.439	11.885	474	Rock with encrusting mat.

Time (L)	Z (m)	Lat. -36	Long. 178	Observations
8:20	0			Pisces in the water at surface
8:45	500			As descend are being pushed to east. Thrust to the west to maintain landing site.
9:07	794	9.015	12.002	Descend through school of bluenose to the bottom. Land in area of broken pillow lava. 7.5 deg. temperature.
9:20	794			Start moving to the north. Corals, gorgonians and urchins are frequent. Bottom is ropey pillow lavas.
9:27	794	9.010	12.000	Collect a specimen of *Dermechinus*, which tend to dominate the seascape, like cacti.
9:40	796	9.010	12.000	Stop near a deepwater lobster *Projasus parkeri*. Collect a sample of the pillow surface, although it crumbles and only small pieces are recovered.
9:44	794			*Projasus* and brittle star
9:50				Corals, crabs, cidarid and echinoid urchins, rattails, morid cods (?*Tripterophycis gilchristi*), fairly clean basaltic pillow lava, gastropds, brittle stars
9:57	780			Moving up vertical pillow wall, branching corals
10:00	770			Deepwater stargazer
10:08				Softer sediment in amongst pillows, long-nosed *Coelorinchus ?supernasutus* rattail
10:12				Tallus slope, scattered corals, rattails, lobster
10:15				Back to pillow ridge, urchins, corals
10:16	726			Drop into shallow crater/hole, dead/broken shells
10:17				Silver roughy, echinoids, corals again
10:20	715			Following ridge on slope. Ropey lava, anemones
10:27	700			Scorpaenid fish
10:30	680			Ridge again, pillow lava/fragments, urchins, corals, fish
10:35	660	8.536	11.898	At WP2, "garden"of urchins, corals, starfish, bluenose closeup
				Off bottom transit to the north for a few minutes.
10:50				Tallus slope, steep, looks unstable, not much biota, a few alfonsino, gastropods
10:53				Prickly dogfish, *Oxynotus bruniensis*
10:55				Advised by KOK that weather deteriorating.
11:00	598			Tallus slope, pillow fragments
				Start of second DVD

11:05				Moving across tallus, scattered benthic fauna, anemones, brittle stars, echinoids
11:07				Travelling 15-20m above bottom to get to WP3.
11:10				50 m bearing 110deg to WP3.
11:13	555	8.536	11.898	Rubble and bouldery tallus slope.
11:16				Expanse of dead mussel shells covering very large area
11:19				Informed to abort dive at 11:45
11:20				Some white staining over small area, still on dead mussel beds, blocky tallus bottom
11:22	510			Bluenose
11:23				Mussels peter out, steep tallus slope
11:28	486	8.439	11.894	Live mussels found. Decide to sample before run out of time.
11:30				Collecting mussels
11:33				Fire major in basket. Temp 11.2 deg, ambient 10.2.
11:36				Fire second major in basket
11:40				Move slightly to west, off the mussels to drop weights.
11:43	474	8.439	11.885	Collect a rock sample
11:47	474			Dropped weights. End of dive.