Dive No.	K 219	Date	2001/9/18
PI	Name	Affiliation	
Japanese English	ミッシェル　クームス Michelle Coombs	アメリカ合衆国地質調査所 U.S. Geological Survey Menlo Park, CA	
Specialty	petrology and volcanology		
Purpose	To study the lithology and structure of the underwater flank of Hualalai volcano		
Area	West (Kona) coast of Hawaii island, 35 km west of the summit of Hualalai volcano		
Site	Ridge up lower bench of Hualalai volcano		

	Latitude	Longitude	Time	Depth (m)
Landing	19˚ 26.70' N	156˚ 08.35' W	9:12	3566
Leaving	19˚ 27.46' N	155˚ 06.96' W	14:12	

Dive distance	2500 m	Deepest point	3566 m

Dive summary	K-219 was conducted, in tandem with K-218, to investigate the nature of the mid-slope bench on Hualalai's submarine west flank. The dive track climbs a prominent rib on the mid-slope bench; several smaller benches are crossed as the track ascends the rib. During the dive, we observed and sampled three units that are distinct in outcrop appearance and/or lithology: 1) fragmented pillow lavas, 2) less fragmented, downslope-elongate pillow lavas, and 3) breccia. The first two units are composed of olivine-rich to picritic, finely vesicular basalt lavas. The breccia is highly oxidized and fines-poor; the matrix is composed of clasts several mm in diameter. It is likely to be of subaerial origin given its oxidized appearance and highly vesicular clasts. In contrast, all of the pillow exposures were devoid of debris or breccia material, suggesting that the lavas have a completely submarine origin. This dive illustrated that not all mid-slope benches of Hawaiian volcanoes are created equal. Unlike Hilina and other benches, the slope of the Hualalai bench is draped almost completely with pillow lavas.
Payload	Nine sample boxes, four push cores
Visual Records	
Sample	Organisms: Rocks: 16 Cores: 2 Sediments: Others: TOTAL: 18
Video Highlights	(1) 9:20-9:26 broken pillows (2) 12:20-12:34 elongate pillows (3) 14:00 breccia outcrop
Key words	pillow basalts, Hualalai volcano, Hawaii island