

PISCES V DIVE REPORT

Pilot: Terry Kerby Dive #: PV-625 Date: May 1, 2005
 Observer 1: Steve Price
 Affiliation: HURL sub ops-PIT Dive Location: Healy Volcano
 Observer 2: Gary Massoth Latitude: 34°59.544'S
 Affiliation: GNS New Zealand Longitude: 179°00.742'E
 Purpose: Research Training Test
 Other: _____ Time of Dive: 0814
 Special Equipment: _____ Time of Surface: 1722
 Cameras: Sony, ROS, DSPL still. Time Submerged: 9:08
 Manipulators: Titan-Hyco Time Thru Last Dive: 4146:48
 Samplers/Sensors: Bio box, Reck box, Rosette Total Time to Dive: 4155:56
major, Gas tight, Temp Probe CTD, Sediment Scoops Dive Depth: 1440m
 Support Vessel: R/V Kaimikai-O-Kanaloa Water Depth: 1440m
 Captain: Ross Barnes Water Temperature: 3.6°C @ 1440m
 Visibility: 8m on landing

Dive Results/Remarks: Exploration dive to search for the source of the hydrothermal plume on 3 separate cones in the caldera of Healy Volcano. 0924 1388m land on a 45° sedimented slope with iron oxide crust and signs of altered bottom. 0944 move down slope. 1000 1440m at the base of the cone and the caldera wall. No signs of hydrothermal activity. 1000 move back up the North cone. 1021 1391m. Into an area of thick bacterial matt. Temp in bottom is 15.9°C. Collect bacteria in Rosette sampler. Continue up slope. 1032 on the rim of a crater. Thick bacterial matt deposits. 1033 Descend into the pit. 50m diameter 20m deep. Thick nontronite formations and intricate chimneys. Formations that appear to be large boulders with thick bacteria are actually nontronite formations 2 to 3m deep that the sub just sinks into when we land on them. Move out of pit into zero visibility after stirring up some of the powdery formations. 1116 1375m moved into second summit pit. This one has some nontronite formations but not as thick as the first pit. 1129 1345m on summit of North cone. No signs of hydrothermal vents. 1141 Begin moving to the SW to the mid cone. 1211 1483m at the base of the second cone. observed that the south flank of the north cone is covered with thick deposits (25cm) of bacterial matt. North side of mid cone is rippled black sand. 1219 1483m move up slope to the SW up the N. flank of the center cone. 1231 1373m on summit rim of crater. Discover large nontronite chimneys with active hydrothermal venting. Temp in vent is 33.9°. 1300 Yellow major sample taken in vent. Sediment scoop sample. Deploy marker #19 at sample site. 1306 Conduct a survey around the crater rim. 1317 1373m Locate more active venting on crater rim. Sediment scoop #1. 21.3°C in vent. Nontronite deposits covering ridge breaks away exposing black sand and basalt breccia. Collect a rock. 1346 moving back to marker #19. 1354 at #19. Descend into pit 1400 1387m in bottom of pit. Thick covering of bacterial matt deposits and nontronite chimneys. Diffused venting. 1408 1372m Locate a vent on the pit side of the marker #19 site. Temp. 35.8°. The chimney breaks away and creates an orange cloud with zero visibility. Move out of pit because of limited survey time. Locate another vent in more Equipment Deficiencies: stable thruster near marker #19. Temp. 28.3°. Take blue ~~red~~ matt and 2 gas tight samples. 1444 move to the SW to south cone. 1537 1384m. Thick bacterial matt on south flank of center cone. 28.4°C in bottom. Collect matt. 1516 1386 on top of south cone. Active venting 28.4°C. Take resette sample of matt and white major. 1551 Leave the bottom from 1384m.

Pilot's Signature: Terry Kerby Date: May 10, 2005
 Operations Director: Terry Kerby Date: May 10, 2005