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University of Hawaii Completes First Phase of a Field Investigation of Environmental Conditions at the "Ordnance Reef" (Sea Disposal Site Hawaii-06)

The University of Hawaii's School of Ocean Earth Science and Technology (SOEST) completed the first of two phases of a field sampling investigation at Ordnance Reef, a conventional military munitions sea disposal site (HI-06) located off the Waianae Coast of Oahu. HI-06, which is in relatively shallow waters (from approximately over 300 feet of depth to under 30 feet of depth), where the Armed Forces sea disposed unwanted military munitions after World War II. This field investigation is focused on munitions at depth of 120 feet or shallower. The first phase is being conducted during Winter Seas, with the second phase scheduled to be conducted during Summer Seas in the August to September timeframe.

"We are very pleased with how the first phase of this two-season investigation has proceeded and we have achieved all our initial objectives," says University of Hawaii's Principal Investigator, Dr. Eric Heinen De Carlo. The current investigation is a follow-up to a screening level assessment that the National Oceanic and Atmospheric Administration (NOAA), in collaboration with scientists from the University of Hawaii, conducted for the Department of Defense in 2006.

The SOEST scientific team, in coordination with DoD, the Environmental Protection Agency and the state, used the results of NOAA's study, which located military munitions in waters up to 300 feet deep using high-resolution sidescan sonar and remotely operated underwater vehicles, to select sites from which to take water, sediment and biota samples. From the University of

Hawaii's coastal vessel R/V Kilo Kai, SOEST collected samples from various areas off the Waianae coast to assess the potential impact of sea disposed military munitions on water, sediment and seafood consumed by the local community. Based on community recommendations, local fishermen collected the seafood for analysis.

Specific seafood sampled included limu kohu, he`e, Kona crab and white weke. The seafood was selected to assess the potential for human exposure to munitions constituents and to screen for bioaccumulation. In addition to collecting samples in areas where munitions were found, the SOEST scientists also collected samples in a control area determined to be unaffected by potential sources of pollution. Because of the potential for other human activities to impact the environment, SOEST scientists also sampled areas that were thought to be subject to non-point source pollution (i.e., run off from roads) and near the Waianae wastewater treatment plant outfall pipe.

Samples collected during this study will be sent to laboratories on the mainland that specialize in the analysis of the pollutants of interest, such as semi volatile organic compounds, explosives like TNT and propellants used in munitions. Sediment and water samples will also be analyzed for heavy metals and arsenic by the University of Hawaii's laboratory. Results will not be available for several months.

A primary objective of this study is to fill gaps left from the 2006 Ordnance Reef study led by NOAA and to assess the potential impact of sea disposed munitions on human health and the ocean environment, and of the ocean environment on sea disposed munitions.

"I am very pleased that, after months of planning and discussions with the State, Environment Protection Agency, NOAA, and Waianae and Nanakuli communities, we have been able to meet our commitment to begin to address concerns raised by the Waianae community following their review of the results of our previous screening level survey," said Mr. Tad Davis, Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health." I have the greatest confidence in SOEST's and UH's ability to provide a scientific basis for determining whether the military munitions present on Ordnance Reef are having an adverse effect on the ocean environment."

The UH scientists are undertaking this project through the Applied Research Laboratory of the University of Hawaii, in partnership with DoD's National Defense Center for Energy and the Environment . The National Oceanic and Atmospheric Administration and Environet, Inc, a local environmental engineering firm, are also working with the University of Hawaii on various scientific matters.
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