From:	Nancy Rumrill
To:	Okubo, Watson T; Chang, Daniel H
Cc:	Wendy Wiltse; David Albright
Subject:	Seep Sampling Procedures for Lahaina
Date:	02/11/2011 05:10 PM

Dan and Watson,

I was not sure what experience you might have with seep sampling methods for the Lahaina project, so I was talking to Chip Hunt with USGS to get any written procedures that he might have on seep sampling. He did not have anything written except his sampling is described in his report called USGS Scientific Investigations Report 2009--5253 "A Multitracer Approach to Detecting Wastewater Plumes from Municipal Injection Wells in Nearshore Marine Waters at Kihei and Lahaina, Maui, Hawaii" at http://pubs.usgs.gov/sir/2009/5253/.

For Chip's sampling, Meghan Dailer and Darla White assisted by scuba. The scuba was necessary in order to hover at the bottom for up to a half hour to collect the sample. Because the seeps were close to the shore, Chip provided sample containers to the divers and support from shore. One problem they struggled with was only filling their containers with ground water from the seeps and not the seawater. He recommended not using his inverted funnel sampling method but instead using a fabricated seepage chamber with a discharge port at the top of it for a sample bottle or bag to be attached. The sample container would also need to be vacuum-sealed to collect the sample when attached. Chip thought this would be a better collection method to isolate the seep and collect only ground water. Also the advantage of the seepage chamber would be to bleed off the seawater and use a conductivity probe to check the sample accumulation in the chamber to ensure a fresh water sample. Chip would be happy to discuss this more with either of you. Or, Chip also recommended that Craig Glenn with UH has alot of experience with seepage chambers and sample collection and can be consulted.

I hope this helps to prepare for our conference call for next Tuesday, Nancy