

## A Rapid and Inexpensive Method for Evaluating the Effectiveness of Amendments for Contaminated Sediments

### Case Study

**Client:**

Geosyntec Consultants

**Site Location:**

Pearl Harbor, Hawaii

**Project Duration:**

January – May 2018

**Services Provided:**

- *Ex-Situ* and *In-Situ* Passive Sampling

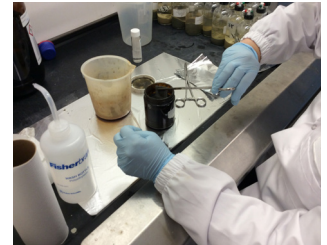
“ESCARGO provided a rapid and inexpensive approach for evaluating the effectiveness of solid amendments applied to contaminated sediments.”

### Project Highlights

- The *Ex Situ* Chemical Availability Recontamination Grab Observation (ESCARGO) method was developed to evaluate the effectiveness of solid amendments for remediating contaminated sediments
- ESCARGO results correspond to those from more complicated and expensive lab and field pilot evaluations
- ESCARGO results can also aid in understanding remedial effectiveness over long time periods

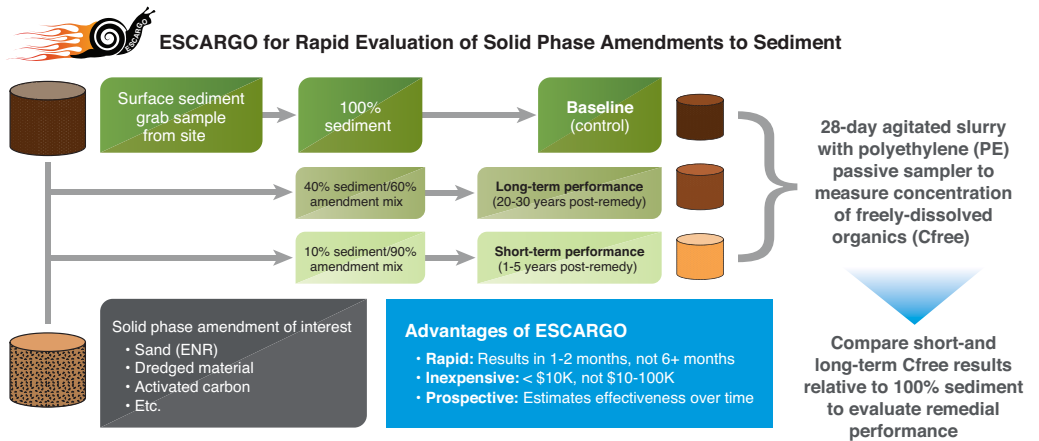
### Problem Definition

Approaches to quantify the reduction in chemical availability in sediments amended with solid materials like activated carbon can involve complicated, expensive, and lengthy bench or pilot scale evaluations. These types of evaluations can have difficulty in simulating long-term scenarios where the solid amendment mixes with underlying contaminated sediment over time.



### Solution

A new, rapid bench scale approach (ESCARGO) was devised to evaluate solid amendments using the SP3™ passive sampler. The ESCARGO method was evaluated by comparing the reduction in PCB availability achieved in a field experiment and the reduction of PCB availability achieved in an *Ex-Situ* experiment. SP3™ passive samplers were used to determine PCB concentrations in both experiments.



### Notable Results

- The ESCARGO and field experiments agreed on the most effective sediment amendments being considered in the project
- The ESCARGO experiment demonstrated that amendment performance would not be significantly reduced over a simulated 20-30 year timescale
- ESCARGO is an affordable and convenient option for evaluating the reduction of chemical availability in sediments after amendment with solid materials