

## OVER THE WATER DRILLING FOR ENVIRONMENTAL INVESTIGATION

Drilling on a barge comes with unique challenges and safety hazards. It takes experience to execute investigations over water safely and efficiently. Based on a superior safety performance record and experience, Cascade was hired to investigate the extent of non-aqueous phase liquid (NAPL) contamination prior to dredging, in the San Francisco Marina

CLIENT: TWS / Haley & Aldrich **PROJECT:** San Francisco Marina LOCATION: San Francisco, CA **TECHNOLOGY:** Sonic **SERVICE:** Environmental sampling

## **PROJECT OVERVIEW**

Cascade craned a sonic rig onto a barge at Mare Island before pushing it to the San Francisco Marina, an eighthour trip.

Sonic technology was selected for its ability to collect continuous core samples, along for its superior performance in heaving sand conditions.

Approximately twenty boreholes were drilled between 30-50 feet into rip rap, and primarily bay mud. The sonic rig drilled through a moon hole on the barge before taking geotechnical samples, along with a continuous sonic core to total depth. As each hole was completed, a tug boat was called in to move to the next location.

## RESULTS

Despite multiple daily tidal swings, along with a narrow area to work in and the sensitive marina environment, the project was completed on budget and without incident.





