FREDsense Technologies

FREDsense technologies is developing custom field-enabled technologies for rapid detection of chemical compounds in water.

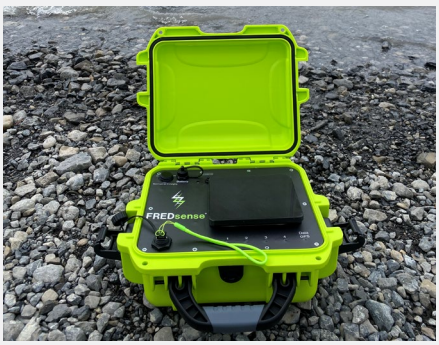
PORT of SAN DIEGO

PILOT PROJECT

In 2020, FREDsense partnered with the Port of San Diego to develop a portable five-in-one field-testing sensor device to provide real-time metals analysis for stormwater monitoring. FREDsense is an early-stage company comprised of a multidisciplinary team of water scientists, biologists, and engineers specializing in custom development of unique water quality solutions.

During the two-year pilot project, FREDsense is proposing to develop, optimize and commercialize a real-time five-in-one automated sensor device for metals in water samples. The proposed metals include aluminum, copper, lead, zinc and nickel, all of which are monitored in the Port's stormwater programs. The project's approach will help stormwater programs by providing real-time data in the field, enabling adjustments to Best Management Practices (BMPs) quicker than with laboratory data that can take several weeks for results.

HIGHLIGHTS



FREDsense has validated its core technology through pilot projects for various applications within the mining, remediation and water industries. FREDsense is currently focused on expanding the sensor suite with exciting projects underway for the detection of SARS-CoV-2, nutrients and marine toxins.

CURRENT STATUS

In support of the pilot, the Port is providing funding, and expert consultation with Port staff regarding use cases and other information based on Port stormwater experience. FREDsense has successfully validated the chemistry tests for the analytes of interest and has begun work on initial testing units for eventual field testing. Results from the pilot will allow for case study development in preparation for full commercialization and regulatory approvals.

Scorecard: FREDsense / FY21-22

PILOT TIMELINE: Board Approval: 12/08/2020 Start Date: 01/01/2021 End Date:01/01/2023

PILOT OVERVIEW

Tracking progress from pilot project to commercial success

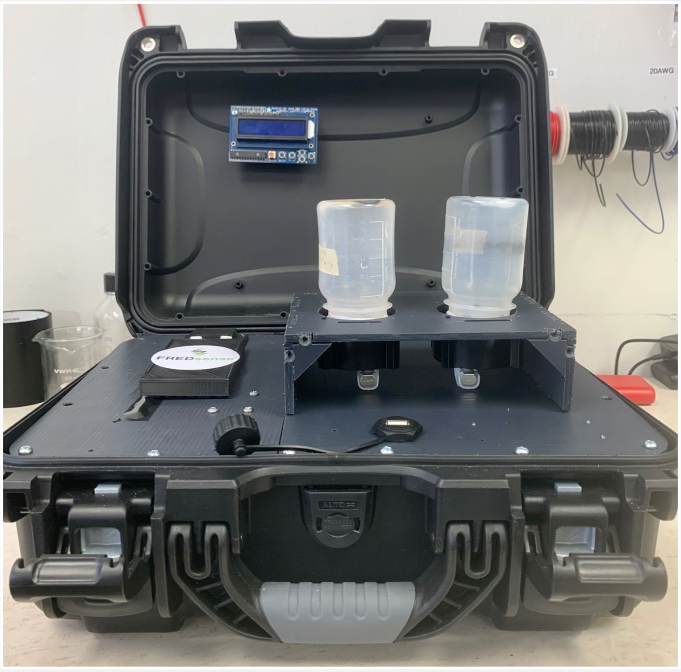
Portfolio Company	Product/Services	Outcome		Outlook
FREDsense	Rapid Stormwater Monitoring Device	Demonstrate sensor device utilizing five chemical methods against laboratory tests	Obtain regulatory approvals for stormwater monitoring	Commercialization of the sensor device and sales to other Ports and companies

Approved 12/08/2020

Testing Ongoing

KEY PERFORMANCE INDICATORS (KPI) & HIGHLIGHTS

OVERALL KPI	Demonstration of Hardware System	Proof of Concept / Case Study Development	Customer Acquisition
FY 21-22 Highlights	FREDsense will utilize the Port's current stormwater sampling program to compare and validate against known laboratory samples. Upon successful customization of the five-in-one sensor device, FREDsense will develop a case study that demonstrates its effectiveness and potential application to stormwater monitoring. The case study will be presented to regulatory agencies to achieve certification of their rapid testing methodology for regulatory and permit compliance monitoring.		



Since the start of their pilot project, FREDsense demonstrated chemistry data for the detection of all five analytes of interest. In collaboration with the Port Environmental Protection team, FREDsense gathered requirements on use case and began first hardware prototype for testing.