

PROJECT HIGHLIGHT

OPTIMIZING INJECTION STRATEGIES WITH HIGH RESOLUTION SITE CHARACTERIZATION

LOCATION: CALIFORNIA

CLIENT: CONFIDENTIAL CLIENT

PROJECT DURATION: 23 DAYS

PROJECT VALUE: 658,790 WITH REMEDIATION

SPECIALIZED EQUIPMENT USED: CONE PENETROMETER TESTING (CPT) AND MEMBRANE INTERFACE PROBE (MIP)

SERVICE PROVIDED: HIGH RESOLUTION SITE CHARACTERIZATION (HRSC)

Successful in situ remediation starts with a deep understanding of the subsurface. At a site in California, a confidential client needed a detailed view of lithologic conditions to optimize injection pathways for remediation. Cascade was brought in to provide high resolution site characterization (HRSC) using Cone Penetrometer Testing (CPT) and Membrane Interface Probe (MIP) technology.

PROJECT OVERVIEW

The goal was to generate transparency around contaminant distribution and subsurface conditions to enhance remediation effectiveness. This included:

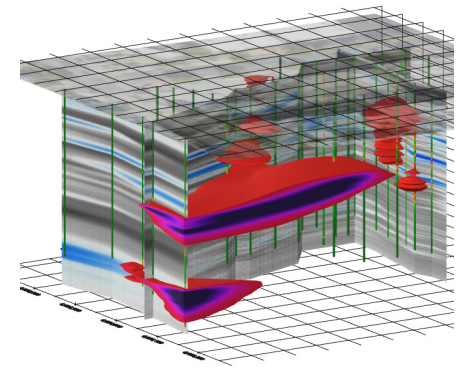
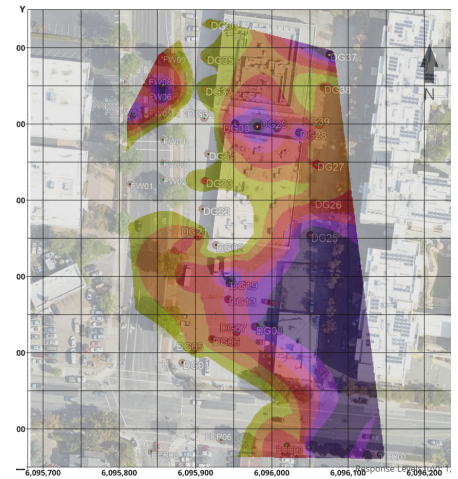
- Determining pathways to maximize contact with contamination.
- Evaluating both dissolved and sorbed phase contamination, as well as DNAPL, to inform dosing strategies.
- Establishing radius-of-influence design transparency and field verification.
- Assessing site conditions to guide the selection of liquid, colloidal solid, or solid chemistries.
- Developing an Injection Optimization Methodology to help the client improve remedial decision-making.

Depth was a key challenge at this site, requiring a robust solution to push CPT and MIP tooling to the necessary depths. To overcome this, Cascade deployed a 30-ton CPT rig, ensuring successful data collection even in difficult subsurface conditions.

RESULTS

The HRSC efforts provided the client with critical data to refine their injection strategy, allowing for a more targeted and efficient remedial approach. The successful characterization directly contributed to optimized injection planning, ultimately enhancing the project's effectiveness.

Cascade met all project deadlines and delivered the necessary data, exceeding the client's expectations. This project also highlighted the value of combining CPT and MIP technologies demonstrating how advanced HRSC methods can lead to smarter, more strategic remediation execution.



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