



PROJECT HIGHLIGHT

BIOREMEDIATION AMENDMENT WITH AUTOMATED INJECTION SYSTEM TARGETS CHLORINATED SOLVENTS

The significant mass reduction of chlorinated solvents was necessary to proceed with redevelopment on a California site in a residential area.

LOCATION: California

PROJECT: In Situ Remediation of Chlorinated Solvents for Future Redevelopment

SERVICE: Pathfinder Injection System and Bioremediation Amendment

PROJECT OVERVIEW

Cascade was retained to reduce chlorinated solvent contamination at a site targeted for redevelopment. The site was located in an active construction site, and the client sought an aggressive completion schedule. Cascade's approach was in situ remediation consisting of chemical injection of an anaerobic bioremediation amendment, ELS®, using Cascade's own Pathfinder injection system. The automated Pathfinder sets precise shutdown and control setpoints, ensuring optimal distribution with supporting documentation from continuous monitoring and data logging. The system controls injection pressures, groundwater depth changes, and flows, minimizing fracturing, excessive groundwater mounding, and short circuiting.

The Cascade team injected 875,000 gallons of ELS through ten manifolded locations, a mix of wells and direct push technology (DPT) points. High flow centrifugal pumps were integrated, providing an additional boost over Pathfinder's 100 gallons per minute capacity, resulting in the flow and pressures needed. The pressures at the wells never exceeded 10 pounds per square inch (PSI), and at the DPT points, the average PSI was 27. Pathfinder provided continuous logging of flow and pressure (see below for one leg of manifold). The ability to set max flow and pressures at each point also ensured the best in situ injection performance and contact with contaminants.

RESULTS

Cascade met daily injection performance expectations and parameters while injecting 875,000 gallons of the anaerobic bioremediation amendment. The client was impressed with the precision of the Pathfinder system and plans to engage with Cascade on future projects where the technology will make a difference.



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