

## Project Overview

**Site:** Former dry cleaning facility in Utah

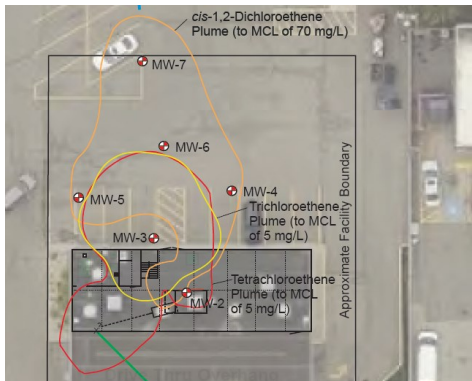
**Contaminants:** Tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and trans-1,2-dichloroethene (trans-1,2-DCE)

**Subsurface Material:** Gravelly sand fill underlain by sand and silt layers

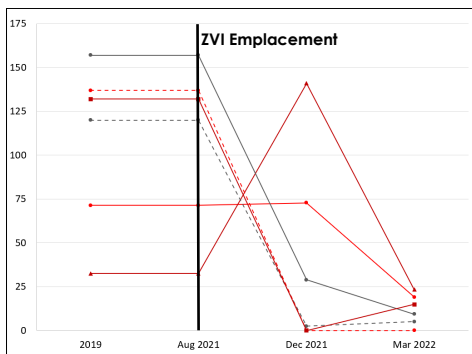
**Contaminant Location:** Groundwater Plume; 8 to 24 ft below ground surface (bgs). Two Shallow Source Areas with soil contamination; 0 to 8 ft bgs.



Pumping and Mixing Unit at the Site



Pre-Remediation Plume over MCLs - now removed



cis-1,2-DCE Concentrations (µg/L) - MCL 70 µg/L

- Objectives**
- Slurry injection emplace Zero-Valent Iron (ZVI) for the chemical reduction of PCE, TCE, cis-1,2-DCE, and trans-1,2-DCE in groundwater
  - Reduce concentrations to below Maximum Contaminant Levels (MCLs)
  - Local contractor conducted soil mixing of ZVI for treatment of the Shallow Source Areas

- Field Program**
- Emplaced 68,420 lbs of ZVI (supplied by CERES Remediation Products)
  - Top-down direct push drilling, ensuring discrete injection intervals, was conducted between 8 and 24 ft bgs
  - 27 boreholes used to cover a lateral treatment area of 4,600 ft<sup>2</sup>

- Technical Evaluation**
- Groundwater chlorinated solvents plume removed, all constituents reduced to non-detect or below MCL
  - PCE, TCE, and trans-1,2-DCE reduced to below detection limits, but with PCE at detection limits at one well
  - cis-1,2-DCE reduced to below MCL and at one well to below detection limits
  - Site meets cleanup levels for unrestricted property use