

PROJECT SNAPSHOT

Remediation at Hamilton Labree Superfund Site

ERH/SEE

Location: Chehalis, WA

Client: URS Group, Inc/USACE/EPA

Contamination: PCE

Goal: Reduce PCE concentrations in soil to less than or equal to 10 mg/kg

Volume: ~12,000 cy

Heating Duration: 5 months of operation

Electrodes/Steam Wells: 49 locations with multilevel electrodes/49 in 40 locations

Mass Removed: 7,800 lbs

WHAT MAKES THIS PROJECT UNIQUE?

Remediation of a complicated CVOC DNAPL source zone sandwiched between two active roadways with part of the treatment area beneath one road and a creek running through the middle. The multiple geologic units underlying the site required both ERH and SEE.

Important Project Details

- **Approach:** TerraTherm deployed both ERH and SEE to treat the heterogeneous subsurface lithology where some depth intervals were too tight for SEE and groundwater flow in other intervals too high for ERH. Once the source remediation was complete, clean water was pulled through the downgradient plume to enhance the effectiveness of the bioremediation approach.
- **Challenges:** The site was located between a major interstate and a service road requiring trenching and installation of utilities across the road to the location of the extraction and treatment system and steam boiler. The creek running through the source area had to be isolated and insulated to protect it during heating (temperature impacts and COC migration). The ERH/SEE design included multiple steam injection and ERH intervals combined with co-located vapor extraction wells, MPE wells, and horizontal vapor extraction wells, and an insulated vapor cover integrated into a stream relocation channel. Once Phase 1 was complete, the creek was restored to preexisting conditions.
- **Results:** All 100 soil confirmation samples collected from various locations and depths within the treatment zone met the thermal remediation goals (<10 mg/kg PCE) after 150 days of heating. Total contaminant mass removed from the site was 7,800 lbs (three times the original mass estimate).



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