

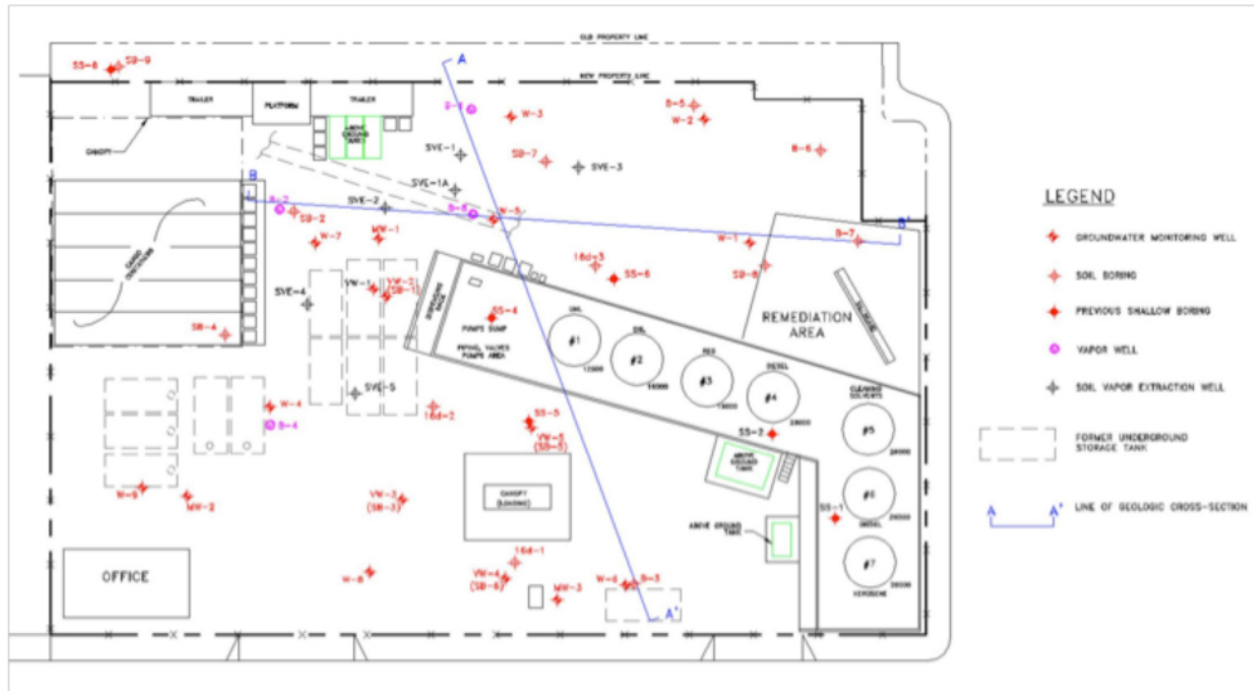


Petroleum Hydrocarbon and Chlorinated Solvent Case Study

G.E.O.'s C3 Technology v. Thermal Oxidation at an Active Fueling Terminal

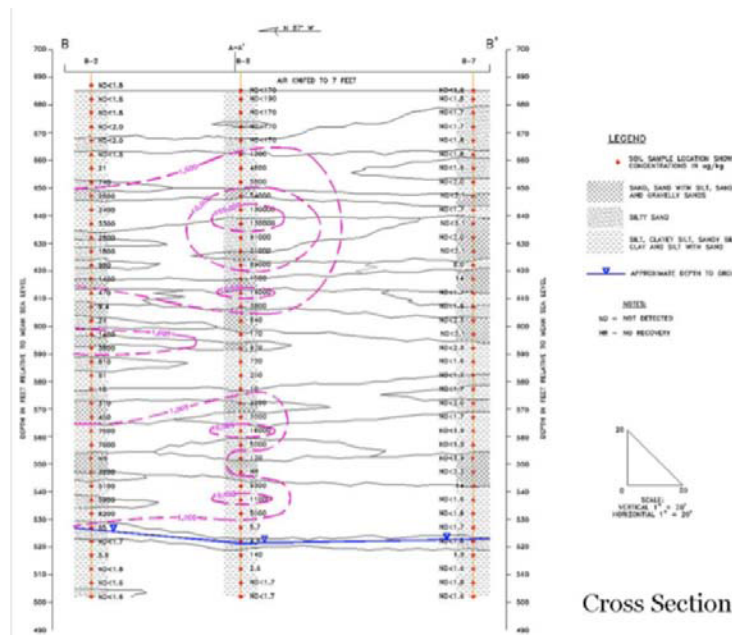
Project Description

The site is an active fueling terminal located in Van Nuys, California USA. The site has underground storage tanks of petroleum fuel as well as numerous above ground storage tanks for containment of various hydrocarbon and chlorinated solvent compounds.



Site Geology

Soils at the location consist primarily of interbedded layers of silt, clayey silt, sandy silt, and fin- to coarse-grained sand to the total depth of 190 feet below ground surface (bgs). Depth to groundwater is approximately 160 feet bgs.





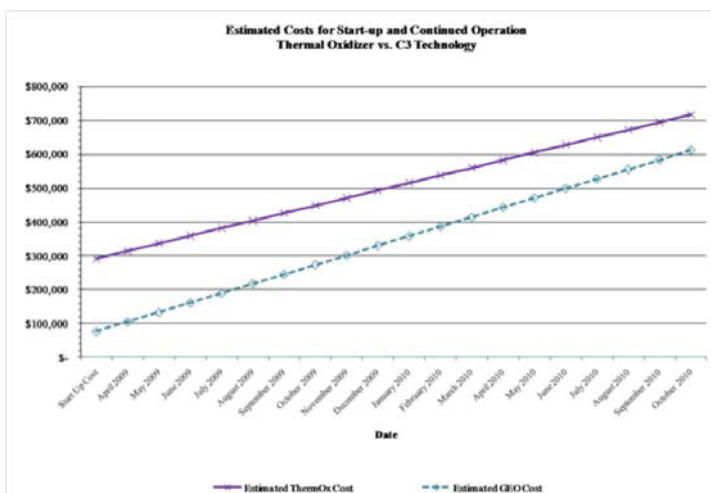
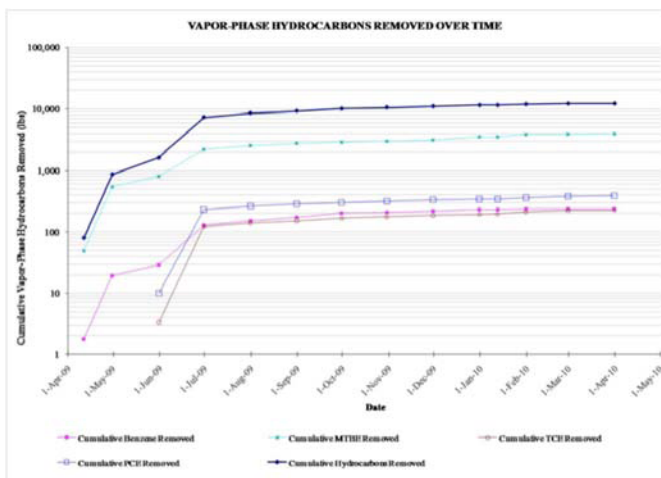
Contaminants of Concern

The contaminants of concern and treated with soil vapor extraction methodology included the following:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- Methyl-tert-butyl-ether (MTBE)
- Tetrachloroethylene (PCE)
- Trichloroethylene (TCE)

Vapor Treatment System Design

- 250 -300 ACFM
- 30 Vapor extraction wells across shallow, intermediate and deep screened zones down to 160 ft bgs
- Maximize removal of hydrocarbon and VOCs in one year or less



Cost Performance

Client reviewed estimated operational costs for thermal oxidation and refrigerated condensation (C3 Technology) and estimated a cost savings of \$105,200 during the short period of time needed to reduce the vapor concentrations and change to granular activated carbon at a lower cost. C3 Technology removed over 13,000 pounds of hydrocarbons / VOCs in less than 11 months. The client has chosen to utilize G.E.O.'s unit as the long term SVE technology.