



Chlorofluorocarbon (CFC) Remediation Case Study

Los Angeles California

Project Description

The Site location was an industrial facility located in the greater South Los Angeles region that manufactured chemicals for local petrochemical and other industrial operations from 1919 through late 1990's. Refrigerants were initially produced in 1964 including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) such as trichlorofluoromethane (R-11), dichlorodifluoromethane (R-12), chlorodifluoromethane (R-22), and 1,1-dichloro-1-fluoroethane (R-141b). Raw materials for CFC/HCFC production included hydrofluoric acid, carbon tetrachloride, chloroform, 1,1,1- trichloro-ethane (1,1,1-TCA), and antimony pentachloride catalyst.

Pilot testing of the soil vapor extraction (SVE) remediation system was initiated in October 2000. Full-scale operation began on September 25, 2002. Routine system monitoring was conducted to maximize contaminant removal while complying with South Coast Air Quality Management District (SCAQMD) regulations and permits.

The SVE system primarily targeted volatile organic compound (VOC)-impacted soils beneath the former refrigerant plant and the immediate surrounding areas. The site had begun redevelopment during SVE remediation as shown in the site photo.



Site Geology

Based on soil boring logs, shallow site stratigraphy consists of the interbedded sand, sandy silt, silty sand and clayey silt beds from ground surface to approximately 150 feet below ground surface (bgs). Groundwater was present at approximately 60 feet bgs.

Contaminants of Concern

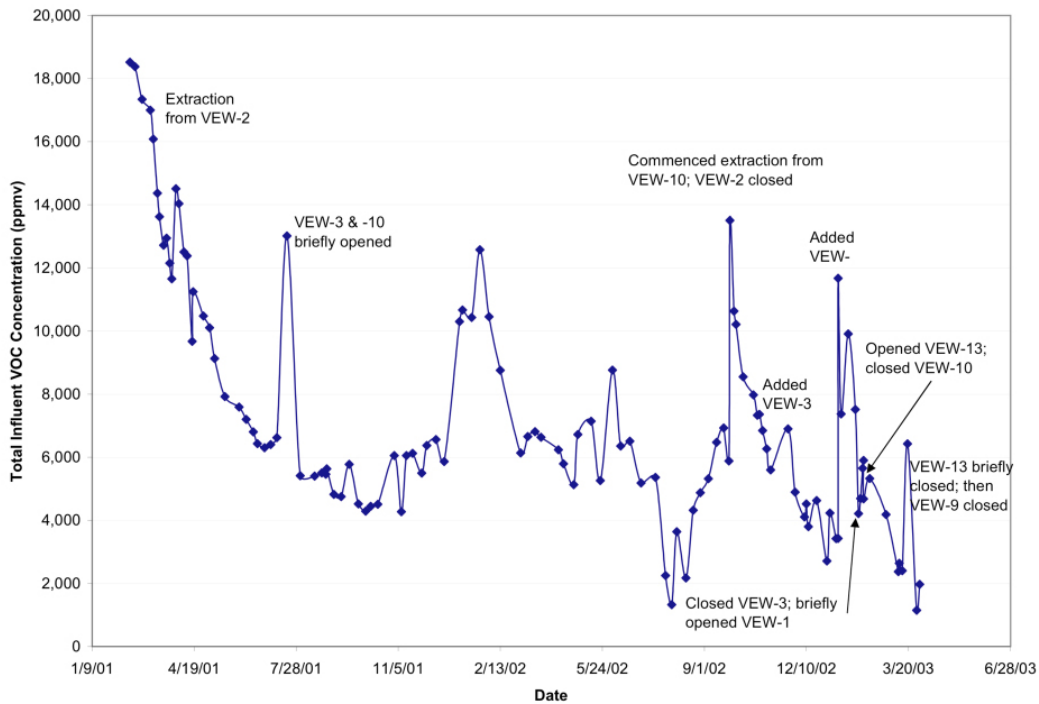
Contaminant	Maximum Concentration
CFC – 11	13,970ppmV
CFC – 12	400ppmV
CFC – 113	6,052ppmV
TCE	114ppmV
CCL4	1,130ppmV
1,1,1 TCA	300ppmV
CHCL3	1,664ppmV



Vapor Treatment System Design

- 200 SCFM system
- Ten vapor extraction wells were operated in cycles
- Maximum initial concentration achieved was 18,524ppmV

SVE SYSTEM INFLUENT CONCENTRATIONS



System Performance and Results

93,422 pounds of chlorinated solvents were recovered in 27 months.

CUMMULATIVE VOC MASS REMOVED

