

General Information

Site Name and Location: Oxboro Cleaners South Bloomington, Minnesota, United States

Description: The site is a former dry cleaning operation (began operation in 1956) and a photo finishing facility. There were several USTs at the site associated with both operations. The site is being redeveloped for commercial and residential land use.

Historical activity that resulted in contamination.

Contaminants:	Contaminant	Conc in GW	Conc. in Soil
Contaminants present and the highest amount detected in both soil and groundwater (please avoid giving ranges).	1,1-Dichloroethene	13 ppb	
	1,2-Dichloroethane	3.1 ppb	
	naphthalene	2.2 ppb	
	n-butylbenzene	5.8 ppb	
	n-propylbenzene	29 ppb	
	p-isopropyltoluene	13 ppb	
	tert butylbenzene	27 ppb	
	Tetrachloroethene (PCE)	37 ppb	1 mg/kg
	Trichloroethene (TCE)	58 ppb	

Other Contaminants Present:

Indicates what other contaminants were found on-site : Acetone: 24 ppb

Deepest Significant Groundwater Contamination:

Plume Size:

Site Hydrology:

**Depth to
Groundwater:** 40 ft

Lithology and

Subsurface 0-2 ft Gravel/Silt Tan/Black 2-5 ft Sand/Gravel Dark Red 5- 35 ft Sand

Geology: Brown 35 — 40 ft Sand/Cobbles Dark Brown

Conductivity:

Gradient:

Media:

Media: GroundwaterSoil

Remediation Scenario:

Cleanup Goals:

Technologies:

**Technologies
Used:** In Situ:

Soil Vapor Extraction

Other technologies used:

Why the technology was selected:

Date implemented: October 10, 1997

Final remediation design: System operation was checked weekly during the first three weeks of operation and monthly thereafter. During each site visit, the vacuum of each soil venting well was measured at the manifold and at the wellhead; the vacuum of the three monitoring points, nearby monitoring wells, and the blower intake were measured. Also, the flow rates of the soil venting wells and discharge were measured; and the total organic vapor (TOV) concentration of each soil venting well and the discharge was measured. The system was designed so that individual soil venting wells could be isolated from the system to alleviate potential stagnation zones. It was noted that the TOV concentration increased to over 100 ppm in SVE lines that were closed off and there was no flow. The TOV concentration at the well head was indicative of concentrations observed when the lines had airflow. This indicates that maybe the PVC or glue was responsible for the elevated TOV concentrations in stagnant lines. Therefore the concentrations detected in the stagnant lines are considered anomalous.

Results and Next Steps:

Results to date: Soil: The result show that the PCE concentration of the discharge decreased from 160mg/m³ on October 20, 1997 to 2.3mg/m³ on May 8, 1998. Cis-1,2dichloroethene (DCE) was detected at a concentration of 7.2mg/m³ in the October 20, 1998 sample, but was not detected in the remaining samples. The PCE air emissions decreased from 17,532

Next Steps:

Costs:

**Cost for
Assessment:**

**Cost to Design
and Implement:**

**Cost for
Operation and
Maintenance:**

**Total Costs for
Cleanup:** \$182,906.63

Lessons Learned:

**Lessons
Learned:** 1. The SVE worked well on reducing the PCE at this site. Cleanup criteria were met within a couple years. 2. A clay lens at 10 ft. bgs seemed to hold most of the PCE in place which was helpful in the remediation process.

Contacts:

**Principal Point of
Contact:** Jonathan Smith, Staff TAMPCA 525 Lake Avenue, #400 Duluth, MN
55802 218-723-4958 jonathan.smith@pca.state.mn.us

Site Specific References:

Images:

Images of Site:

Profile last updated on Mar 31, 2004

General Information

Site Name and Location: Eastgate Cleaners Memphis, Tennessee, United States

Description: Historical activity that resulted in contamination. Eastgate Cleaners has operated since 1965, coincident with construction of the shopping center. Assessment work was initiated in 1991. Contamination was concentrated in subsurface utility lines and adjacent to a trash dumpster. A gas station and auto repair shop have operated north of the drycleaners since the late ‘60s and ‘70’s, respectively. A photography shop is also located directly west of the site. As of 2000, chlorinated solvents impacted an estimated volume of 1.74 M gal of groundwater. Soil investigations suggest chlorinated hydrocarbons are migrating both in vapor phase and in aqueous phase.

Contaminants:

Contaminants: Contaminants present and the highest amount detected in both soil and groundwater (please avoid giving ranges).	Contaminant	Conc in GW	Conc. in Soil
	1,1-Dichloroethene	13 ppb	
	1,2-Dichloroethene	1,300 ppb	
	Benzene	1.7 ppb	
	cis-1,2-Dichloroethene	1,000 ppb	
	methylene chloride	0.55 ppb	
	Tetrachloroethene (PCE)	2,100 ppb	7,170 ppb
	toluene	0.63 ppb	
	Trichloroethene (TCE)	1,200 ppb	
	Vinyl Chloride	1.1 ppb	

Other

Contaminants

Present:

Indicates what other contaminants were found on-site

Acetone, 37,000 ppb

Deepest

Significant

Groundwater

Contamination:

Plume Size: 600 ft x 600 ft

Site Hydrology:

Depth to

Groundwater: Perched groundwater at 40 ft, with a basal fluvial aquifer at 70 ft.

Lithology and

Subsurface

Geology:

Loess deposits consisting of 20 to 25 ft of clayey silts, overlying fluvial material, approximately 50 to 80 ft thick, composed of sand and gravel, interbedded with clay. Groundwater was found at the base of the fluvial section, from 9 to 25 ft in thickness. Underlying these units are the Jackson-upper Claiborne confining bed, encompassing the Jackson Clay, and the Cockfield Cook Mountain Formations, approximately 125 ft thick.

Conductivity:

Between 2.55×10^{-5} to 3.97×10^{-5} ft/day for depths between 8 and 28 ft.

Gradient:

0.001, to the ESE (perched zone); 0.015, to the W

Media:

Media: Groundwater/Soil

Remediation Scenario:

Cleanup Goals: Groundwater: MCL: PCE=5 ppb, TCE= 5 ppb, 1,1 DCE=7 ppb, cis-DCE=70 ppb, 1,2 DCE total= 70 ppb Soil: PCE= 500 ppb

Technologies:

Technologies Used: In Situ:
Soil Vapor Extraction

Other technologies used:

Why the technology was selected: Preliminary results of the soil vapor extraction treatability study indicated SVE technology would be highly effective in extracting chlorinated hydrocarbons from soils at the site. Excavation beneath the existing building was not feasible, without removing the building.

Date implemented: An SVE pilot test was conducted in December 1992, with full system installation and operation occurring from February 1994 to November 1996. A 5-month trial period was started in January 2001, when the system was reactivated.

Final remediation design: Between 1994 and 1996, the SVE was operating under pulse venting techniques, involving turning off the system for shorter periods of time. The 2001 trial period involved 24-hour per day operations, with an airflow rate of 300 cfm. A 6-hour per day pulse mode was initiated in March and continued until cessation of operations in June. A total of 2,000 lbs of granular activated carbon was used to treat the soil vapor.

Results and Next Steps:

Results to date: Approximately 1,350 lbs of mass of PCE and TCE were removed during initial operations (1994-1996). During the 2001 trial period, approximately 0.16 lbs of total PCE and TCE was recovered from both deep and shallow extraction wells. The system was terminated upon verification that a negligible volume of mass was entering the system.

Next Steps: Natural attenuation for further groundwater contaminant reduction.

Costs:

**Cost for
Assessment:**

**Cost to Design
and
Implement:** \$330,000 for SVE installed

**Cost for
Operation and
Maintenance:** \$34,500 for trial period

**Total Costs
for Cleanup:**

Lessons Learned:

**Lessons
Learned:**

Contacts:

**Principal Point
of Contact:** James Gilbert Drycleaner Environmental Response Program TN Division of
Superfund 401 Church St., 4th Floor L&C Annex
Nashville, TN 37243 Phone: 615-741-4998 Consultant: Ben BrantleyEnSafe
Inc.5724 Summer Trees Drive,Memphis, TN 38134Phone: 901-372-7962

Site Specific References:

**Site Specific
References:**

Images:

**Images of
Site:**

Profile last updated on Dec 15, 2003