

HAIGHT FARM

Client: New York State Department of Environmental Conservation (NYSDEC)
Location: Clarendon, New York
Date: 2000

At the 2-acre Haight Farm site, the improper disposal of 40 drums containing used cutting oil resulted in TCE contamination that threatened residential drinking-water wells. Sample results showed the drums contained up to 65% TCE. Three residential wells were affected. The NYSDEC-approved, performance-based remedial design centered on use of a dual-vapor extraction (DVE) system. Removal and off-site disposal of the most heavily contaminated soil also was part of the remediation.

E & E reviewed the contractor's DVE system design for the treatment of contaminated groundwater and soil vapor. The design required installation of 10 DVE wells, a treated groundwater infiltration trench, and a specified radius of influence. E & E engineers worked with NYSDEC and the contractor to help refine the contractor's system design and provide additional operational flexibility.

The Haight Farm project involved the connection of one resident to the existing public water supply; excavation and off-site disposal of 2,800 tons of TCE-contaminated soil; design and installation of a DVE system and treated water reinjection trench; installation and decommissioning of monitoring wells; and operation and maintenance of the DVE system for five months. The work was performed in three phases: contaminated soil removal; DVE and groundwater and soil vapor extraction system design and installation, including system testing and startup; and operation, monitoring, and maintenance of the treatment system, as well as site regrading and restoration.

The DVE treatment system is housed in a trailer. The equipment includes a phase separator, inlet filter, blower with silencers, heat exchanger, vapor granular activated carbon units, water storage tanks, liquid granular activated carbon units, piping, valves, instrumentation, and controls. A programmable logic controller (PLC) controls and monitors overall system performance. The PLC includes an automatic telephone dialing and remote-monitoring feature that is accessible around the clock and is capable of shutting down the DVE treatment system when alarm conditions are detected.



E & E directed the excavation and disposal of 2,800 tons of TCE-contaminated soil.

Areas disturbed by the remediation work were restored to preexisting conditions or better. Restoration work included backfilling of approved soil, construction of a recharge trench, placement of topsoil, and reestablishment of vegetative cover using wildflower seed and mulch.

To monitor the effectiveness of the DVE system and evaluate the need for continuing treatment, groundwater samples were collected before system start-up and during its five-month operation.

The TCE concentration at the vapor phase influent decreased 95% from the start-up to the end of the five-month O&M period. The vapor phase treatment system handled 50 million cubic feet of air; the aqueous phase a quarter of a million gallons of groundwater. Through well-coordinated teamwork, E & E helped keep change orders to less than

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10% of the nearly \$600,000 cost of remediation.