



A Profile in Using Green Remediation Strategies

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Havertown PCP Site
Havertown, PA

Superfund NPL

Cleanup Objectives: Remediate shallow ground water containing metals, chlorinated volatile organic compounds (VOCs), benzene, and dioxins/furans

Green Remediation Strategy: Conducted remediation system evaluation spanning 12-acre treatment area encompassing

- Four recovery wells
- One collection trench
- A pre-treatment system to break oil-water emulsion, remove metals, and remove suspended solids in extracted ground water
- Aboveground system employing three 30-kW ultraviolet/oxidation (UV/OX) lamps, a peroxide destruction unit, and two granular activated carbon units to collectively destroy or remove organic contaminants

Results:

- Took two UV/OX lamps offline, based on recommendations of remedial system evaluation
- Reduced annual operating costs by \$32,000, primarily due to lower electricity consumption
- Continues to meet cleanup criteria for ground water
- Gained a potential life cycle cost savings estimated at \$515,000-\$960,000, based on 30 years of ground-water treatment operations.

Property End Use: Undetermined

Point of Contact: [Jill Lowe](#), U.S. EPA Region 3

Recommendation	Reason	Additional Capital Costs (\$)	Estimated Change in Annual Costs (\$/yr)	Estimated Change In Life-cycle Costs (\$) *	Estimated Change In Life-cycle Costs (\$) **
Properly Seal Abandoned 12-Inch Sewer Line and Remediate Surface Soils Near the Seep	Effectiveness	\$200,000	\$0	\$0	\$0
Improve Plume Delineation to the South and Vertically	Effectiveness	\$120,000 to \$150,000	\$5,000	\$285,000	\$216,000
Evaluate Plume Capture Once Plume is Delineated	Effectiveness	\$55,000	\$0	\$55,000	\$55,000
Take Measures to Further Reduce System Downtime	Effectiveness	\$0	\$0	\$0	\$0
Use Fewer UV/Oxidation Units	Cost Reduction	\$0	(\$32,000)	(\$960,000)	(\$516,000)
Evaluate Areas to Reduce Labor Costs	Cost Reduction	\$0	(\$40,000)	(\$1,200,000)	(\$646,000)
Continue Improving Treatment Plant to Facilitate Operation and Potentially Increase Capacity	Technical Improvement	< \$10,000 to \$25,000	\$0	< \$10,000 to \$25,000	< \$10,000 to \$25,000
Make Piping Changes to Better Use the Second Equalization Tank	Technical Improvement	\$10,000	\$0	\$10,000	\$10,000
Adapt P&T System to Focus Primarily On Cost-Effective Containment with Decreased Emphasis on Restoration	Site Closeout	\$0	(\$30,000)	(\$900,000)	(\$484,000)
Potential Options for Improving Capture	Site Closeout	Contingent on implementation of other results			

Other opportunities for ground-water treatment optimization (leading to increased conservation of energy and water and reduced operating costs) included better sealing of an abandoned sewer line, re-engineered piping among process tanks, and refined plume delineation. (Final Report, Pilot Region-Based Optimization Program for Fund-Lead Sites in EPA Region 3; Site Optimization Tracker: Havertown PCP Site Havertown, Pennsylvania; EPA 542-R-06-006; December 2006)

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United States Environmental Protection Agency
Office of Solid Waste and Emergency Response (5202P)

For more information:
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