



alternative  
environmental  
solutions

## REMEDICATION GASOLINE CONTAMINATED PROPERTY

### Overview

AES removed underground storage tanks at a small retail gasoline and service station. Extensive soil contamination was identified during this removal requiring additional site characterization and remediation in accordance with Pennsylvania environmental laws. AES coordinated the excavation and disposal of approximately 950 tons of petroleum impacted soils from the site, followed by the installation of 22 on- and off-site groundwater monitoring wells. Separate-phase hydrocarbons were present on the shallow groundwater table aquifer with “elevated” levels of dissolved-phase hydrocarbons being reported in the groundwater downgradient of the site.



Photograph of the groundwater pump and treatment and SVE remediation system onsite

### Remedial System

AES designed, tested, installed, and is operating a groundwater pump and treatment system along with a soil venting and extraction (SVE) remediation system to recover separate-, dissolved-, and vapor-phase hydrocarbons from the subsurface soils. The remedial systems include a 500 CFM thermal oxidizer/catalytic unit to treat vapors, with groundwater treatment being accomplished through solids filtration, a low-profile air stripper, and granular activated carbon vessels. AES is currently obtaining the necessary permits to install and operate an oxygen injection system at a downgradient, off-site property to stimulate microbial degradation of dissolved-phase hydrocarbons. It is anticipated that through the use of these three systems, a release of liability for soils and groundwater will be obtained via PADEP’s statewide health and site specific standards, respectively.



Photograph of the AES-assembled remediation system trailer awaiting transport and installation at the site by AES

#### Work Tasks

- Routine Maintenance ✓
- Equipment Repair ✓
- General Housekeeping ✓
- 24/7 Alarm Condition Response ✓

### Results

The groundwater remedial system has effectively extracted and treated approximately 6 million gallons of groundwater during the 856 days (2.4 years) of operation. During this time, AES has only had to respond to four alarm conditions. SVE operations to date have recovered approximately 7,400 gallons of gasoline with the system operating cyclically to reduce remedial system operational costs.

#### AES O&M Statistics:

- Continuous Operation\*, Groundwater System: 95+%
- Continuous Operation\*, SVE System: 100%
- No major period (>2 days) where system was down

\* includes carbon change outs, equipment upgrades, repairs, etc.