

# Manufactured Gas Plants

## KEY Services

### Highlights

*Performed investigation activities including fate and transport analysis and natural attenuation assessment*



*Removed above ground and below ground gas holders*



*Evaluated and implemented MGP waste recycling/reuse*



*Performed DNAPL recovery*



*Implemented engineering and institutional controls*



*Obtained a release of liability under State-specific voluntary cleanup programs*



*Participated in cost recovery support and expert witness*



*Demolition of an above ground gas holder.*

Based on our private sector and utility industry experience, Key Environmental Inc. (KEY) has a complete understanding of the environmental issues associated with former manufactured gas plant (MGP) sites. KEY has successfully developed a streamlined approach to remediation on more than 25 MGP sites.

**K** EY has performed environmental site assessments and investigation activities at MGP sites, including:

- soil, groundwater, surface water and sediment investigations
- fate and transport analysis and natural attenuation assessment
- risk assessment
- source characterization
- site-specific remediation standard development.

### Gas Holder Removal

KEY personnel have been involved with the removal of both above ground and below ground gas holders, including:

- site preparation
- community relations
- applicable permitting

- gas holder access
- liquid contents removal and disposal
- coal tar removal and disposal
- gas holder decontamination and demolition
- site restoration.

### Coal Tar Waste Recycling/Reuse

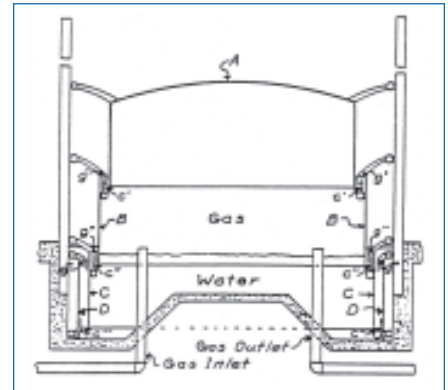
With increased restrictions on land disposal of hazardous waste, KEY has been proactive in evaluating potential options for recycling/reuse of coal tar material. Knowing that much of the coal tar material removed from gas holders has significant fuels blending capabilities, KEY has used this option when appropriate for recycle/reuse. Fuels blending and other resource recovery technologies (e.g. on-site blending processes) are essential in reducing the amount of non-usable product ultimately recovered from these sites.



Acetate sleeve sample saturated with coal tar.



Interior of above-ground gas holder containing residual debris/tar.



Cross section of multiple-lift gas holder. (Morgan, 1926)

## Applicable Technologies

KEY has employed a variety of conventional remedial technologies, with a focus

*KEY employs technologies with a focus on limited liability and expense.*

on limiting environmental liability and overall expenditures. Technologies include:

- rendering source material nonhazardous, removal and disposal, installation of cap/cover and natural attenuation
- DNAPL removal and oil/water separation and groundwater re-infiltration combined with engineering controls such as barrier wall and low permeability cover
- laser induced fluorescence delineation, with in-situ stabilization and a low permeability cover.

Other non-conventional technologies available for soil and groundwater treatment, include:

- soil washing
- radio frequency energy application
- ozonation
- sparge barriers.

## Regulatory Trends

To ensure cost-effective means in addressing technical and practical issues associated with MGP sites, KEY personnel

continuously monitor regulatory changes. Many states are recognizing risk-based approaches in dealing with potential liability for MGP sites. In addition to various state voluntary action programs, KEY has focused on how RCRA Subtitle C applies during site cleanup and how the Hazardous Remediation Waste Management requirements (HWIR) coincide with the LDR Phase IV rule.

To ease the burden of handling potential characteristic hazardous waste at MGP sites, KEY has used recent state and EPA interpretations of the HWIR in a manner that is amenable to handling MGP waste in situ, so as to de-characterize the waste prior to disposal, so that LDR's are not applicable.

## Reuse of MGP Sites

With increased legislative efforts focused on recycling/redevelopment of former MGP sites, KEY has built a diverse background related to environmental reuse issues. With a practical understanding of various brownfields initiatives, many sites are good candidates for recycling. Combining source removal and natural attenuation as the focal point, can bring these properties back into productive use. KEY has successfully recycled MGP sites either by reintroducing the properties for industrial/commercial use or using them as "green space." At a 150-acre former MGP site, KEY's efforts resulted in the redevelopment of the property as a commercial warehouse facility.



### KEY SERVICES

#### Remedial Investigations and Site Assessments

- Phase I Assessments
- Geophysical Evaluations
- Hydrogeological/Aquifer Testing
- Soil/Sediment Characterization
- Groundwater Characterization
- Fate & Transport Evaluations
- Risk Assessments
- Natural Attenuation Assessments
- GIS/GPS/Data Management

#### Environmental Engineering

- Feasibility Studies
- Remedial Design
- Turnkey Projects
- Construction Management
- Construction QA/QC Oversight
- Monitoring/Reporting
- System Operations

#### Program Support

- Permitting
- Regulatory Support
- Expert Witness and Reports
- Contractor Procurement
- Decommissioning/Demolition

### KEY OFFICES

#### Pennsylvania (Corporate)

1200 Arch Street, Suite 200  
Carnegie, Pennsylvania 15106  
P: (412) 279-3363, F: (412) 279-4332

#### New Jersey

456 Route 22 West, Suite D  
Whitehouse Station, New Jersey 08889  
P: (908) 534-4501, F: (908) 534-6785

#### New England

185 Lancaster St., Ste. 304  
Portland, Maine 04101  
P: (207) 772-8100, F: (207) 772-8101

[www.keyenviron.com](http://www.keyenviron.com)  
[mailbox@keyenvir.com](mailto:mailbox@keyenvir.com)