



### SITE HISTORY

The DuPont Pompton Lakes Works site is located at 2000 Cannonball Road in Pompton Lakes and Wanaque, New Jersey. The site encompasses approximately 570 acres. DuPont manufactured explosives on site from 1902 to 1994. DuPont ceased operations in April 1994 and began the closure and cleanup of the site. Past operations and waste management practices contaminated surface water, soil, sediment and ground water both on and off site. Primary soil and sediment contaminants are lead, mercury and copper. Primary ground water contaminants are the volatile organic compounds tetrachloroethene (PCE), trichloroethene (TCE) and their degradation products.<sup>1</sup>

### Cleanup to date

More than 200,000 tons of contaminated soil and sediment has been removed from Acid Brook and Wanaque River. Within these projects, more than 150 properties were cleaned up and approximately 10 acres of wetlands were replanted.

Thirty areas on-site have been cleaned up from former manufacturing operations.



Restored shooting pond



Acid Brook

### FEDERAL AND STATE CLEANUP PROGRAMS

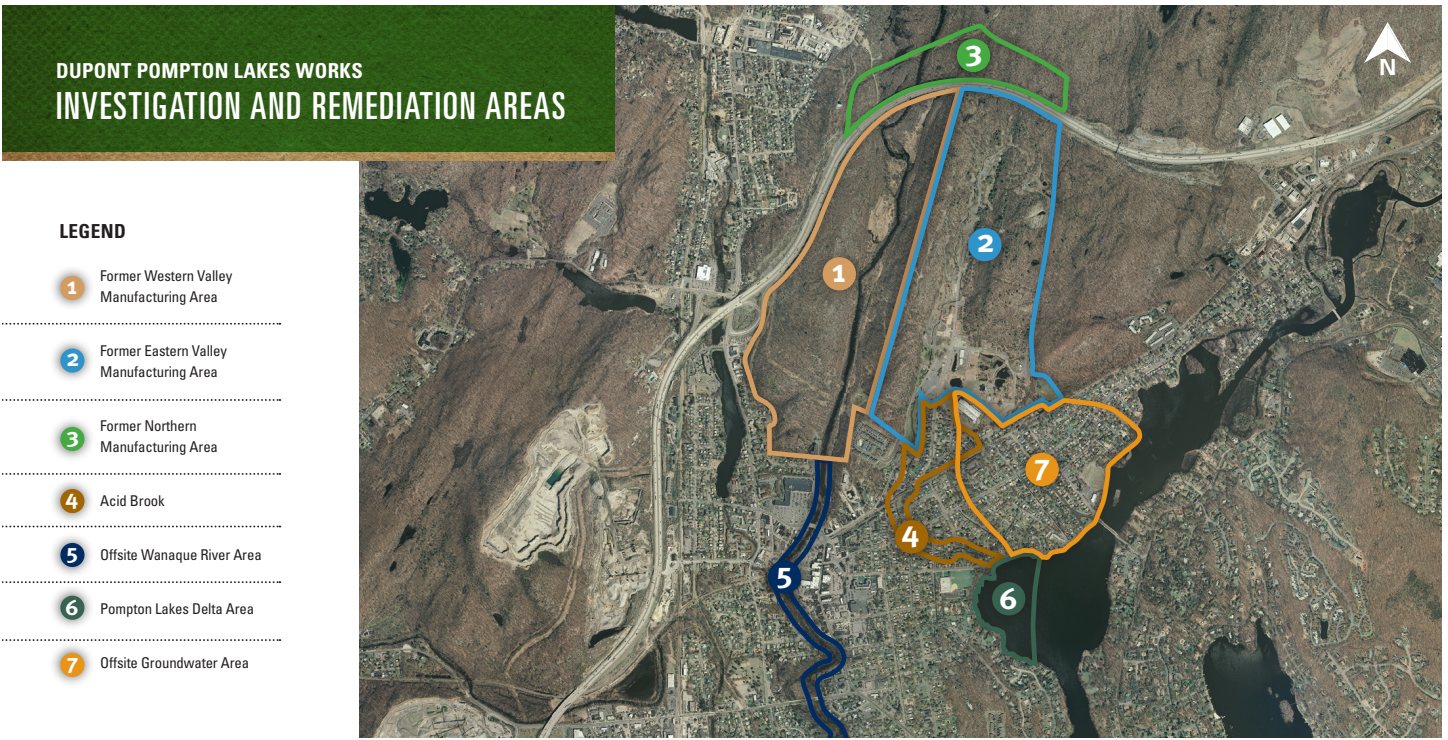
The DuPont Pompton Lakes Works site is regulated under the federal Resource Conservation and Recovery Act or RCRA, which requires facilities that have stored, treated or disposed of hazardous waste to clean up any releases of hazardous materials regardless of when they occurred. The “hazardous materials” can be the waste itself as generated, or hazardous components of other discarded materials. If such releases are suspected or confirmed at RCRA-regulated facilities, EPA requires the investigation and cleanup of the contamination under the RCRA Corrective Action program. DuPont is required to clean up the facility under a RCRA permit, which is still in effect even though it ceased operations in 1994.

DuPont also has cleanup obligations under New Jersey law resulting from a 1988 Administrative Consent Order that the company entered into with the New Jersey Department of Environmental Protection (NJDEP). The order requires the company to conduct an investigation of all contamination on or emanating from the site.

DuPont is responsible for conducting the necessary investigations and cleanups with oversight by EPA and NJDEP. EPA and NJDEP follow similar procedures for site assessments, investigations, evaluations and remediation. The agencies share information and coordinate oversight of the cleanup. NJDEP has primary responsibility for the investigation and cleanup of the former manufacturing facility, while EPA is the lead agency for the investigation and cleanup of the Acid Brook Delta. EPA and NJDEP are jointly managing studies of the ground water aquifer and the actions to reduce the intrusion of vapors from the ground water into people’s homes.

<sup>1</sup> Vinyl Chloride, 1,1-DCA, 1,1-DCE, Carbon Tetrachloride, 1,2-DCA, Trans – 1,2-DCE, CIS – 1,2-DCE, 1,1,1-TCA

**Figure 1. DuPont/Pompton Lakes Works Site**



**OVERVIEW OF CLEANUP AREAS AND ACTIVITIES**

Site cleanup areas are organized into on-site areas and off-site areas as shown in Figure 1. Cleanup of the former western, eastern and northern on-site manufacturing areas (areas 1 through 3) will address soil and ground water contamination.

Cleanup of the off-site Acid Brook, Wanaque River and Acid Brook Delta, which includes lake and uplands areas (areas 4 through 6) will primarily address contaminated soil and sediment. Cleanup of the off-site ground water area (area 7) will address both ground water contamination and vapor

intrusion. Within these areas, multiple site cleanup activities are taking place concurrently. A summary of the current status of the cleanup areas is shown in Table 1.

Investigations to characterize the nature and extent of the contamination have been conducted in various areas of the site. Remedial Investigation Reports, called RIRs, have been submitted by DuPont to EPA and NJDEP. Areas requiring immediate attention have been addressed as interim actions. Sampling to further delineate areas of contamination is ongoing.

**Table 1. Status of the DuPont Pompton Lakes Works Site Cleanup**

Cleanup Areas	Status		
	Investigation	Cleanup Technology Assessment	Remediation (Cleanup)
<b>On-site</b>			
Soil	○	○	○
Ground water	○	○	○
<b>Off-site</b>			
Acid Brook	●	●	●
Wanaque River	○	○	○
Acid Brook Delta and Uplands (Lake Remediation)	●	○	○
Ground water (shallow aquifer)	●	●	○
Ground water (intermediate aquifer)	●	○	○

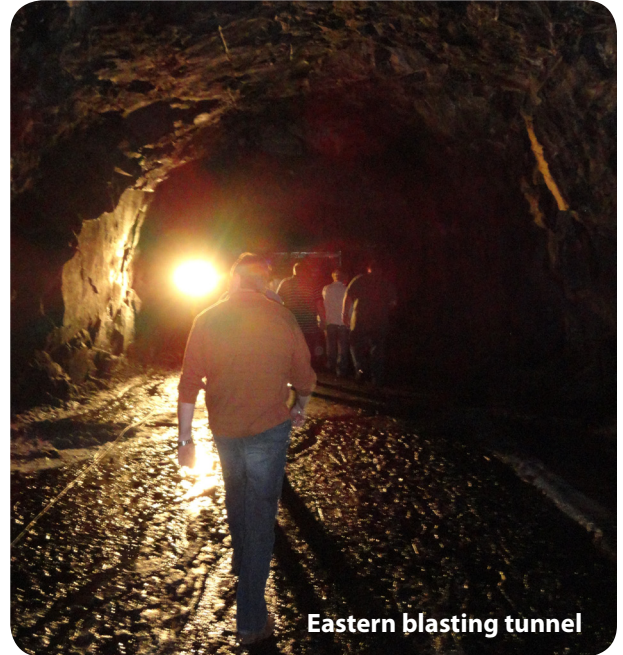
- Symbols**
- Complete
  - Ongoing
  - Not started

## ON-SITE CLEANUP AREAS

### **Soil Remediation**

DuPont is expected to complete the investigation of on-site soil for the western, eastern and northern manufacturing areas by the end of 2012. DuPont will then submit a supplemental report that describes the findings. DuPont will submit the Remedial Action Selection Report /Corrective Measures Study 90 days after the approval of the report. These reports will identify and evaluate cleanup alternatives. EPA and NJDEP will conduct public outreach on them, and will propose final cleanup plans for these areas as part of a RCRA permit modification, which will also be subject to a public comment period. Following issuance of the permit modification, DuPont will submit work plans to perform the work to EPA and NJDEP for approval. Cleanup is expected to begin in late 2013 and continue until 2015.

In response to concerns raised by community members about possible contamination in on-site blasting tunnels in the former eastern manufacturing area, EPA, NJDEP and community representatives viewed the tunnels during a site tour. The tunnels were formerly used for metal cladding (bonding dissimilar metals with dies or pressing or rolling sheets together under high pressure). The tunnels were also videotaped by DuPont during the site investigation. EPA and NJDEP have no evidence of contaminants in the tunnels that pose a risk to people's health or the environment.



### **Ground Water Cleanup**

On-site ground water monitoring has been conducted since the 1980s. Primary on-site ground water contaminants are the volatile organic compounds PCE and TCE. The ground water contaminant plume has been delineated and Classification Exception Areas that provide notice that a ground water remediation project is ongoing, have been established with NJDEP.

In 1998, DuPont installed a system to keep ground water contamination from moving off-site and to remove volatile organic compounds. Ground water is pumped from the shallow and intermediate aquifer on site, treated to remove volatile organic compounds, then discharged into the shallow aquifer through a series of infiltration basins downgradient along the southern boundary of the site.

## OFF-SITE CLEANUP AREAS

### **Acid Brook**

Past operations at the site resulted in discharges of copper, lead and mercury to soil and sediment in the Acid Brook, which in turn impacted the surrounding upland area leading into Pompton Lake. The contaminated sediment also affected residential properties along the Acid Brook. In 1991, DuPont began cleaning up contaminated Acid Brook sediment and floodplain soil. The interim cleanup also covered affected residential properties. Cleanup activities included excavating impacted soil/sediment, backfilling with clean soil, upgrading embankments and installing geotextile, rip-rap (permanent cover of rock used to stabilize stream banks) and silt curtains to reduce the potential for recontamination. The cleanup of this area was completed in 1997.

### **Wanaque River Area**

Cleanup activities for the Wanaque River area will address potential impacts from plant operations in the former northern and western manufacturing areas. DuPont has collected surface water and sediment data and compiled it in a report. It is expected that future evaluations and selection of proposed cleanup plans for this area could begin as early as late 2013 and continue through 2015.

## **Acid Brook Delta and Uplands (Lake Cleanup)**

Investigations from 2003 to 2009 identified metal contamination including lead and mercury in soil and sediment where Acid Brook discharges to Pompton Lake (the Acid Brook Delta). DuPont submitted reports in 2009 that identified and evaluated cleanup alternatives. EPA proposed a draft RCRA permit modification to incorporate cleanup of the lake. EPA held a public hearing on the proposed permit modification in January 2012.

The proposed cleanup approach includes excavation of contaminated soil from the upland area to meet appropriate cleanup standards, and dredging of sediment from the Acid Brook Delta to meet qualitative cleanup objectives selected to reduce mercury uptake in fish and wildlife. After the cleanup is completed, the area will be restored. EPA expects to make an announcement on the next steps for the lake cleanup during fall 2012.



**Acid Brook Delta**

### **Mercury Bioaccumulation**

Some forms of mercury accumulate in organisms – specifically, organisms higher on the food chain such as fish – as they ingest it. This makes the fish hazardous for human consumption.



## **Ground Water Contamination**

Off-site ground water is contaminated with the volatile organic compounds PCE, TCE and their degradation products. Under certain environmental conditions, these contaminants follow a natural process that breaks them down into ethene, a harmless end product. The ground water underneath homes in the plume area of Pompton Lakes is contaminated at two levels with volatile organic compounds.

### **Shallow Aquifer**

Since 1998, DuPont has been treating on-site contaminated ground water with a pump and treat system. Treated ground water is discharged into the shallow aquifer zone through a series of infiltration beds located along the property boundary. The primary purpose of this system is to contain the on-site ground water plume from migrating off-site. This system has also resulted in improved conditions in the eastern portion of the shallow ground water plume.

DuPont is now preparing to conduct a pilot study to perform hydraulic surcharging using horizontal wells to inject treated ground water into the western part of the shallow ground water plume. If successful, the process would then be adopted as an interim remedial measure. DuPont expects to submit the pilot study work plan during summer 2012, with a pilot test report expected in early 2013.

### **Pilot Study**

A small-scale study performed to evaluate the effectiveness of a specific remediation treatment.

### **Bioremediation**

The use of naturally occurring bacteria to break down contaminants in soil and water. The bacteria can be “enhanced” through the addition of food sources.

## Intermediate Aquifer

DuPont is conducting a ground water pilot study to determine if bioremediation would be beneficial in treating ground water contaminants in the plume. DuPont will continue to gather additional data through fall 2012 to further evaluate the effectiveness of implementing bioremediation.

## Vapor Intrusion

Vapor intrusion results from the volatile organic compound contamination in the shallow ground water underneath homes. The volatile organic compounds in the ground water vaporize and migrate building foundations. Vapor mitigation systems installed on houses are effective in intercepting the vapors and diverting the vapors above house rooflines.

EPA encourages all residents with homes above the contaminated shallow ground water plume to install one. Homeowners have a choice of having DuPont install the vapor mitigation systems or arranging to have their own contractor install a vapor mitigation system. Eligible property owners or residents may contact EPA, NJDEP or DuPont for more information. Information on hiring a contractor to install a vapor mitigation system is available at: [http://www.nj.gov/dep/srp/community/sites/dupont\\_pompton\\_lakes/contractor\\_info](http://www.nj.gov/dep/srp/community/sites/dupont_pompton_lakes/contractor_info). Currently, more than 70 percent of the homes located above the ground water plume have vapor mitigation systems installed or the vapor mitigation system installation process is underway. For more information about vapor mitigation systems see: [http://www.state.nj.us/dep/srp/community/sites/dupont\\_pompton\\_lakes/faqs.htm](http://www.state.nj.us/dep/srp/community/sites/dupont_pompton_lakes/faqs.htm)

## COMMUNITY INVOLVEMENT

EPA and NJDEP are committed to providing meaningful community involvement throughout the DuPont Pompton Lakes Works site cleanup process. EPA will be providing the community with regular site updates through quarterly fact sheet mailings and public information sessions.

## RESOURCES

EPA Region 2 DuPont Pompton Lakes Works RCRA Site Web page:  
[http://www.epa.gov/region2/waste/dupont\\_pompton/index.html](http://www.epa.gov/region2/waste/dupont_pompton/index.html)

NJDEP Site Web page:  
[http://www.state.nj.us/dep/srp/community/sites/dupont\\_pompton\\_lakes](http://www.state.nj.us/dep/srp/community/sites/dupont_pompton_lakes)

## FOR MORE INFORMATION

Please contact:

### EPA Region 2

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### NJDEP

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