

**FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE  
CROTON WATER TREATMENT PLANT  
METHODOLOGIES**

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## **4.13. HAZARDOUS MATERIALS**

### **4.13.1. Introduction**

The objective of the hazardous materials investigation is to determine whether the proposed actions at the proposed Croton Water Treatment Plant (WTP) project sites or off-site facilities could result in people or the environment suffering an increased exposure to hazardous materials. Any substance is considered a hazardous material if exposure to it would pose a threat to human health or the environment. These substances could include heavy metals, volatile organics, semivolatile organic compounds, methane, polychlorinated biphenyls (PCBs), and other substances deemed hazardous or toxic by the United States Environmental Protection Agency (USEPA) and/or the New York State Department of Environmental Conservation (NYSDEC). The following section outlines the methodology used to achieve the goal of identifying the potential for exposure to hazardous materials and the significance of that exposure.

All analyses were conducted in accordance with the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process (ASTM E1527-00)*, *Phase II Environmental Site Assessment (ASTM E 1903-97)*, and the City of New York's *City Environmental Quality Review (CEQR) Technical Manual (October 2001)*.

### **4.13.2. Baseline Conditions**

#### **4.13.2.1. Existing Conditions**

##### **4.13.2.1.1. Data Collection**

Preliminary hazardous materials assessments (Phase I investigations) were conducted in accordance with CEQR and ASTM guidelines. Each of the project sites and surrounding areas were visually inspected and property histories were reviewed using available historical mapping, local agency building information, and fire department records. A records search (over the previous 50 years, where possible) of federal, state, and local agency files was conducted to identify hazardous materials issues over a broad study area that included the project sites and properties and adjacent areas.

The extent of the area surrounding each of the project sites that were investigated varied. The Eastview Site, because of the rural history and relatively recent development of the area, was investigated within one mile from its boundaries. The Mosholu Site was also investigated within one mile from its boundary. The Harlem River Site, which is adjacent to several highly developed neighborhoods, was investigated within one half mile from its boundary, except to the west of the Harlem River Site where the Harlem River itself essentially forms a hazardous materials barrier. The off-site facilities were investigated within one-quarter mile from their boundaries. The smaller study area for the off-site facilities was chosen because the proposed actions at these facilities are limited, primarily involving temporary work within existing structures.

Records were investigated through direct contact with government agencies and via electronic database searches. Records searched included: aerial photographs and tax maps; Sanborn historical maps and Geographic Information Service (GIS) data; the (USEPA), National Priority List (NPL), the USEPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database of sites planned for or under investigation; the Emergency Response Notification System (ERNS); the Toxic Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the USEPA list of Resource Conservation and Recovery Act (RCRA) hazardous waste generators and transporters; the New York State Department of Environmental Conservation (NYSDEC) list of inactive hazardous waste disposal sites; the NYSDEC list of reported spill incidents; the NYSDEC list of chemical and petroleum bulk storage tanks; the NYSDEC active solid waste facility register; the NYSDEC Inactive Hazardous Waste Disposal Sites, Major Oil Storage Facilities; and Air Discharge Facilities. In addition, Freedom of Information Letters (FOIL) were submitted to the Westchester County Health Department to obtain any information pertaining to the Eastview Site, surrounding properties, and sewer alignments.

Information regarding the routes of pipelines and other buried utilities associated with each project site was also included in the search. The potential for off-site contaminants to migrate onto the project sites was considered with reference to local surface and subsurface drainage patterns and the nature of the proposed action (i.e., excavation).

Existing conditions with regard to the presence of hazardous materials were determined for each project site where subsurface work that could cause soil disturbance was planned. Available information on subsurface conditions (geology and hydrogeology), including any previous borings performed at or near the project sites was obtained where available. Geotechnical and environmental data were limited to project sites where access for investigative purposes could be secured. Specifically, geotechnical and environmental information was collected during the subsurface investigations undertaken in 1991 and 1992 at Jerome Park Reservoir<sup>1</sup>; in 1999 at the Eastview Site; and in 2002 at the Harlem River Site and the NCA Shaft locations<sup>2</sup>. Visual inspections of all accessible areas for each of the project sites were performed to identify potential sources of contamination and to update information derived from the database search of environmentally regulated sites. The inspections included observations of underground and above ground storage tanks and areas where hazardous materials or wastes may have been used, stored, treated, generated, and/or disposed, such as maintenance, manufacturing, or retail and commercial facilities (e.g., gas stations, dry cleaners), as well as vehicle storage facilities, debris piles, and areas of uncontrolled dumping. The visual inspections also identified areas of soil staining, odors, or stressed vegetation, which could be signs of contamination.

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<sup>1</sup>Jerome Park Reservoir Borings Report.

<sup>2</sup> 2003. NYCDEP. Croton Water Treatment Plant Draft Environmental Impact Statement.

#### **4.13.2.2. *Future Without the Project***

The potential for changes in the hazardous material conditions at each of the project sites was evaluated in light of any land use changes proposed for each study area. For the Eastview Site, the property would be anticipated to remain under NYCDEP ownership as it has for over 50 years, and an NYCDEP police precinct would be built on site along with an Ultraviolet Light (UV) Disinfection Facility; a NYCDEP Administration Building could also be located on the Eastview Site. Land uses immediately surrounding the Eastview Site in both the Town of Mount Pleasant and the Town of Greenburgh would also be anticipated to remain generally the same, although additional development would be anticipated to occur in the adjacent Grasslands Reservation. However, this development is not anticipated to affect the Eastview Site in terms of hazardous materials.

At the Harlem River Site, significant changes would be anticipated to occur on unoccupied or partially developed and privately owned properties within or adjacent to the project site. Various proposals are under consideration for development of individual properties on or near the proposed site for private and public purposes. Development of these properties would likely involve the removal of debris from uncontrolled dumping, removal of unsuitable fill materials, filling-in of river inlets and shoreline improvements (i.e., bulkhead construction), removal or in-place stabilization of contaminated soil, and the pumping and possible treatment of contaminated groundwater. Unless the Harlem River Site remains in its current under-utilized condition, some level of hazardous materials management is inevitable even without the proposed project.

The NCA access points are existing structures (e.g., gate houses, shafts), which connect the underground NCA tunnel to the surface. Even if the Croton WTP were not constructed at any of the three potential project sites (i.e., Eastview Site, Mosholu Site or the Harlem River Site), the NCA would undergo an upgrade for continued use as a gravity flow water conveyance system. The upgrades would involve structural improvements to the tunnel and selected shafts and gate houses. If the Eastview Site is chosen as the preferred water treatment plant site, the NCA would undergo an upgrade to pressurize the section of the tunnel south of the Eastview Site. The upgrades would involve further structural improvements to the tunnel and selected shafts and gate houses. In the process of performing the improvements, hazardous materials associated with NCA structures or the surrounding soil and groundwater may require management (e.g., removal, treatment, or disposal). Since the access points are located on NYCDEP easements above the NCA, hazardous materials issues would be addressed at the time the NCA is upgraded.

#### **4.13.3. Potential Impacts**

##### **4.13.3.1. *Potential Project Impacts***

This section explains the methodology used to assess potential environmental impacts from hazardous materials and chemicals that would be used in the water treatment process and laboratory testing at the proposed Croton WTP, and the safeguards to protect public safety and the environment during delivery, handling, storage, and use of any chemicals on-site. Potential exposure to contaminated soils and groundwater is addressed below in the potential construction impacts section. As stated earlier, potential hazardous material impacts are considered significant if the proposed

project results in the potential for human or environmental exposure to contaminants, and the risks cannot be mitigated effectively.

#### ***4.13.3.1.1. Regulations***

Regulations promulgated by the City, local, State, or Federal government serve as a basis for the identification, classification, handling, and storage of hazardous materials, and for the generation, discharge, and disposal of hazardous wastes. The following Federal and State regulations apply:

1. Resource Conservation and Recovery Act (RCRA) - This Federal act regulates the generation, treatment, storage, disposal, and transport of hazardous wastes. Under RCRA, hazardous wastes are substances that are chemically reactive, ignitable, corrosive, or toxic as measured by the Toxicity Characteristic Leaching Procedure.
2. Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) - CERCLA, which was amended by SARA, provides procedures for containing and remediating releases of hazardous substances to the environment, and for identifying and remediating sites contaminated with hazardous substances. Title III of SARA, the Federal Emergency Planning and Community Right-To-Know Act, allows public access to information about local use of hazardous chemicals and requires the user to develop chemical spill emergency procedures (40 CFR 300). Under SARA, Title III users must report the storage of hazardous materials quantities to NYSDEC and USEPA when on-site quantities are above certain thresholds.
3. Occupational Safety and Health Administration (OSHA) Regulations - This agency was created by Congress in 1970 and promulgates regulations and standards to ensure worker safety in the workplace.
4. U.S. Department of Transportation - This department addresses the listing and transportation requirements for hazardous materials under 49 CFR Part 171 and 172.
5. New York State Department of Conservation (NYSDEC) - NYSDEC regulations pertaining to hazardous materials and hazardous waste closely parallel Federal regulations. These regulations are set forth in Volume 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR) Part 371.
6. Oil Spill Prevention, Control and Compensation Act of 1977, the Petroleum Storage Act of 1986, and the Hazardous Substance Bulk Storage Act of 1986 - These acts are the basis for regulations that ensure proper storage of petroleum and hazardous substances as well as procedures for addressing spills and leaks of these materials. New York State has primacy for enforcing these regulations through the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR).

7. Asbestos Regulation - The NYCDEP, pursuant to Local Laws 76/1985 and 80/1987, specifies requirements for building surveys, laboratory analyses, professional certifications, and asbestos abatement. The New York State Department of Labor and the USEPA administer National Emissions Standards for Hazardous Air Pollutants (NESHAP), which also regulate asbestos activities.

#### ***4.13.3.1.2. Water Treatment Chemicals***

A comprehensive list was compiled of the chemicals that would be used in the water treatment and laboratory testing processes. This list includes the type and quantity of chemicals used in all phases of treatment, from chemical coagulants (which are added to raw water to help in the treatment process) to chemicals such as sodium hypochlorite (which is added to disinfect the treated water). A discussion of the potential for chemical spills is also included in the analysis. Material Safety Data Sheets (Appendix E) were used to identify the physical and chemical properties of each chemical and to assess handling and safety issues. The water treatment chemicals were checked to see if any of them were listed as “hazardous substance” chemicals under 40 CFR Part 370.

#### ***4.13.3.1.3. Process Lab Chemicals***

A list of the chemicals used in the laboratory water quality testing was compared to the list of “hazardous chemicals” under 40 CFR Part 370 and 6 NYCRR. For example, according to 40 CFR Part 370, if hazardous chemicals are stored in quantities in excess of 4,540 kilograms at any one time, the facility is required to report annually under SARA Right-to-Know Regulations and NYC Community Right-to-Know Regulations. Storage and handling facilities were also compared for compliance with NYC Building and Fire Codes. The chemicals to be used in the laboratory come pre-packaged in small quantities. Laboratory chemical usage would fall below reportable values, and the quantities to be used would be safe to discharge to the sewer through a neutralizing bed in a sink.

The list of laboratory chemicals was compared to the “listed hazardous wastes” in 40 CFR Part 261.11 of the Federal hazardous waste regulations and the New York State hazardous waste management regulations 6 NYCRR Part 371. The daily quantity of the hazardous wastes to be generated by the laboratory was estimated, and the handling, storage and disposal of these wastes described. The need for an emergency response/contingency plan was assessed in compliance with Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.38). The use of chemicals in laboratories is regulated under OSHA, specifically through the “Hazard Communication Standard” in 29 CFR Part 1910.1200. Material Safety Data Sheets were used to identify the chemical and physical properties of each laboratory chemical, and the safety, handling, and labeling requirements described. For example, under the federal “Hazard Communication Standard,” the laboratory must label all chemical containers, maintain Material Safety Data Sheets, and train employees on the hazards associated with these materials. Wastewater treatment plants that would receive water treatment plant waste, and local health departments were contacted to determine pre-treatment discharge requirements.

#### ***4.13.3.1.4. Mercury in UV Lamps***

Mercury-containing UV lamps are proposed to be used as part of the Croton project. Potential releases of mercury resulting from breakage of the lamps were evaluated to address potential exposure via several scenarios. This evaluation included potential exposure resulting from breakage of the lamps while on line and the potential effects of subsequent consumption to consumers. Additionally, the evaluation addressed potential dermal and airborne exposure to workers within the water treatment plant related to maintenance and handling of the lamps.

#### ***4.13.3.2. Potential Construction Impacts***

The presence of hazardous or contaminated materials threatens human health and the environment only when exposure (i.e., physical pathway) to those materials can occur. During construction of the proposed project, excavation would be required which would involve the displacement of soil, tunneling spoils, and groundwater. For materials that are exposed, testing would be required to determine either appropriate disposal options or if the materials are suitable for reuse on-site. Since construction is likely to require dewatering, testing and possibly treatment of pumped groundwater would be required prior to discharge to a natural water body or the sewer system based on surface water (NYSDEC) or sewer (NYCDEP) discharge criteria.

In areas where environmental hazardous materials exist, disturbance of soil and groundwater can provide an exposure pathway for the contaminants to workers and possibly the public. Based on the results of both the Phase 1 and Phase 2 investigations<sup>3</sup>, decisions about significant adverse impacts would be made on a site-specific, action-specific basis, considering all available information. Site-specific Remediation Plans and Health and Safety Plans would be developed to implement mitigation measures designed to eliminate, reduce to acceptable levels, or control sources of significant impact.

#### **4.13.4. Mitigation**

Site remediation techniques would be developed based on the Phase 1 and Phase 2 investigations, the severity of the potential exposure, the nature of the proposed action, and consultation with appropriate regulatory agencies. Site-specific Remediation Plans may include techniques to contain, remove, or treat specific hazardous materials along with Health and Safety Plans designed to protect construction workers and the general public. If contaminated material is to be removed or discharged from a site, all Federal, State, and Local regulations would be followed regarding transportation and disposal.

A risk-based approach would be used in determining the proper course of mitigation at each specific site or facility where management of hazardous materials may be an issue. The risk-based approach would evaluate the current and proposed future land use of the site along with the proposed action (e.g., excavation, construction) against known contaminants of concern (COC) and potential

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<sup>3</sup>Phase 1 investigations were conducted at all sites; Phase 2 investigations were conducted where Phase 1 investigation results indicated that a Phase 2 investigation was necessary.

exposure pathways in determining what remedial course of action, if any, is appropriate for that particular site or facility. Each site-specific Remediation Plan would be based on knowledge of the COC and actual or potential exposure pathways. Each site-specific Remediation Plan would address and mitigate both short-term (during implementation of the Plan) and long-term (after the remedy is complete) human health and environmental exposure risks.