

A. INTRODUCTION

This chapter examines the potential for impacts related to hazardous materials during construction and operation of the proposed action at the Hunts Point Water Pollution Control Plant (WPCP). Construction would involve disturbance of soil on portions of the existing Hunts Point WPCP site and an additional 5.5-acre parcel of city-owned vacant land located to the northwest of the existing plant boundary. As described in Chapter 1, "Project Description," 4.3 acres of this 5.5-acre site would be incorporated into the Hunts Point WPCP as part of the proposed action and the remaining 1.2-acre parcel would be used as the construction staging area. This 1.2-acre parcel would be transferred to the New York City Department of Parks and Recreation (NYCDPR) as an addition to Barretto Point Park when it is no longer required for construction staging. This chapter describes the contaminants known to be present in the soil and the ongoing and planned remedial efforts in the areas (for both the future without and with the proposed action) that would be disturbed by construction, and assesses potential impacts from exposure to contaminants in the soil and groundwater.

The proposed action also includes construction of carbon addition facilities required to meet future (2014) nitrogen reduction goals. Nitrogen levels in effluent will be reduced by adding an additional carbon source to the wastewater treatment process at the aeration tanks. The additional carbon source will either be methanol (wood alcohol) or ethanol (the grain alcohol found in alcoholic beverages). The carbon addition facilities (including storage tanks, pumps, and piping) would be constructed at the northeast corner of the plant. Polymer addition facilities would be constructed to enhance nitrogen removal facilities being constructed as part of the Phase II Upgrade. The changes in the wastewater process result in excess froth, and polymer is added to assist in froth control. The polymer addition facilities would be installed in the centrate building which is being constructed as part of the Phase II upgrade. This chapter assesses the potential for impacts from construction of the carbon addition facility and from transportation, storage, and use of these chemicals.

This chapter provides information on investigations conducted for the site and adjacent areas to date. Remediation efforts conducted to date and those to occur in the future without the proposed action are also described. Finally, the chapter assesses the potential for the proposed action to result in significant adverse hazardous materials impacts.

CONTAMINANTS OF CONCERN

Soil and groundwater beneath a site can become contaminated because of past or present uses on the site or on adjacent properties. Hazardous materials such as asbestos-containing materials and lead-based paint may be present in aboveground structures on a site.

The areas that would be affected by the Hunts Point WPCP Phase III Upgrade are currently or were historically used for industrial purposes (e.g., water pollution control plant, paint and

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varnish manufacturing facility). Contaminants identified in these areas include heavy metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). Certain heavy metals and SVOCs were detected in locations and at concentrations that indicate their presence is due to the placement of historic fill at the site. VOCs identified in the 5.5-acre parcel, including xylene and ethylbenzene, were detected in locations and at concentrations that indicate contamination due to historic operations, primarily the former paint and varnish manufacturing facility that is being remediated under the future without the proposed action conditions.

In addition to subsurface soil and groundwater contaminant issues resulting from industrial uses of the properties, there is also a potential for encountering hazardous materials (such as asbestos and lead paint) associated with existing structures during rehabilitation or demolition. Potentially asbestos-containing materials and lead-based paint may be located within buildings or underground pipes.

REGULATORY CRITERIA

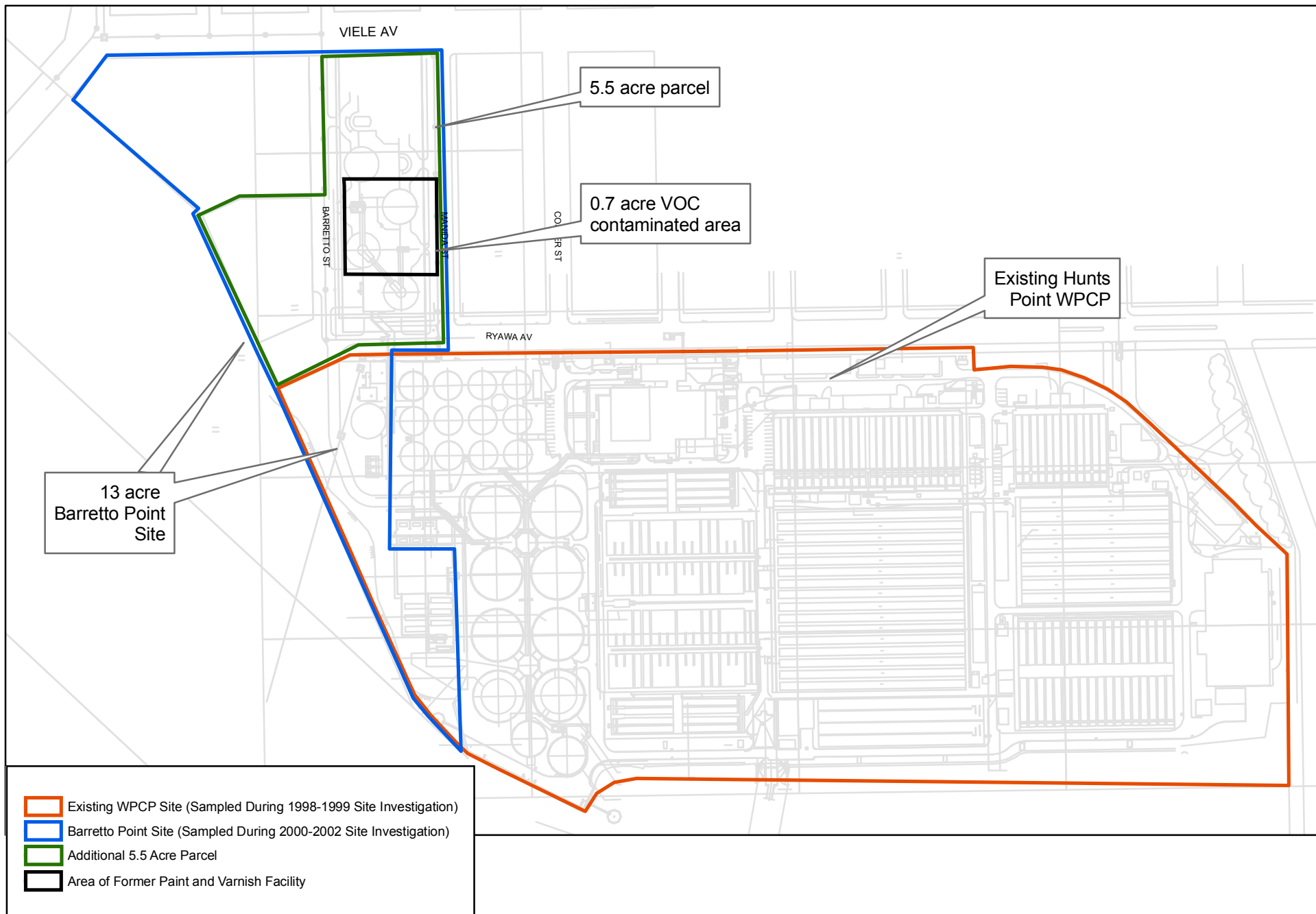
The inorganic and organic constituents discussed in this chapter are those regulated by state and federal agencies and/or those selected to characterize the project area. Concentrations of these constituents are compared to current New York State Department of Environmental Conservation (NYSDEC) standards, criteria, and guidance values developed to protect human health and water quality. For groundwater and surface water discharges, these values include NYSDEC's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code. NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046 "Determination of Soil Cleanup Objectives and Cleanup Levels," are used to evaluate surface and subsurface soil conditions.

B. EXISTING CONDITIONS

New York City Department of Environmental Protection (NYCDEP) performed previous site investigations of the existing Hunts Point WPCP as part of planning for facility upgrades. These investigations included areas being affected by the Phase III Upgrade as well as areas that are affected by the Phases I and II Upgrades. NYCDEP and the New York City Economic Development Corporation (NYCEDC) performed a separate 13-acre site investigation, which included the 5.5-acre parcel (4.3-acre additional parcel and 1.2-acre construction staging area), the western portion of the existing Hunts Point WPCP, and the area that has since become Barretto Point Park, collectively referred to as the "Barretto Point Site." Figure 14-1 shows the boundaries of the site investigations performed on the site in the areas affected by the proposed action. The existing Hunts Point WPCP site was sampled during a 1998-1999 site investigation. The 13-acre Barretto Point Site was sampled during investigations from 2000 to 2002. These investigations are discussed in the following sections.

NYCDEP SUBSURFACE INVESTIGATION OF EXISTING HUNTS POINT WPCP (1998-1999)

NYCDEP undertook a site investigation of the existing Hunts Point WPCP from 1998 to 1999. The site investigation included sampling in areas that would require excavation as part of the Phase I, II, and III Upgrades and carbon addition. The conditions of the soil and groundwater at the existing Hunts Point WPCP, summarized herein, were detailed in previous site investigation



reports¹. The site investigation included subsurface and hazardous materials investigations to characterize the existing environmental conditions and evaluate potential contamination issues that could occur during the construction of the Phase I, II, and III Upgrades. The investigation included a lead paint survey and asbestos inspection, soil borings, and groundwater monitoring well installations.

Based on a site inspection, areas on the site that required detailed investigation were identified. The detailed investigation was performed in 1999. The investigation included sampling in areas that would be affected by the Phase III Upgrade, such as the area of the proposed replacement waste gas burners, the proposed North Pipe Tunnel (the utility tunnel that would connect the new digester building to the sludge thickener building basement and contain water, sludge, and gas pipes as well as electrical conduits), and the existing sludge digesters, sludge thickeners, and tunnels underneath the existing digesters and thickeners. Sampling was also performed in the vicinity of the proposed carbon addition facility. The results of the investigation in these areas are discussed below (see “Results of Site Investigations Conducted to Date”).

NYCEDC/NYCDEP SITE INVESTIGATION OF BARRETTO POINT SITE (1999-2002)

A separate site investigation was performed for approximately 13 acres referred to as the “Barretto Point Site” on behalf of NYCEDC in cooperation with NYCDEP². The purpose of the investigation was to assess the potential for impacts to human health or the environment given the site’s status as a Brownfield site (an abandoned or underutilized property where redevelopment is complicated due to real or perceived environmental contamination) and the planned use of a portion of the site for a public park (Barretto Point Park has since been constructed). The entire 13-acre Barretto Point Site was identified as eligible for funding under the 1996 Clean Water/Clean Air Bond Act, since the site qualified as a Brownfield. The 13-acre property investigated as part of the Barretto Point Site investigation included: the 5-acre parcel for the area that is now Barretto Point Park; the 4.3-acre parcel proposed to be included in the Hunts Point WPCP as part of the Phase III Upgrade; the 1.2-acre area that would be used as the construction staging area during the upgrade and eventually incorporated into Barretto Point Park; and approximately 2.5 acres of undeveloped land along the western shoreline of the existing Hunts Point WPCP. The site investigation was conducted in 2000 and included the collection and analysis of soil vapor samples, surface and subsurface soil samples, groundwater samples, and surface discharge samples. The results of this investigation for the Hunts Point WPCP and 5.5-acre additional parcel are discussed below (see “Results of Site Investigations Conducted to Date”). The 5-acre area that is now Barretto Point Park has been remediated independently and is not the subject of this EIS.

¹ A report entitled “Subsurface and Hazardous Materials Investigation Report” was prepared for the Hunts Point WPCP by NYCDEP in August 1999.

² A “Site Investigation Report” was prepared in September 2000. A follow-up report, “Remedial Alternatives Report,” was prepared in December of 2001.

RESULTS OF THE SITE INVESTIGATIONS CONDUCTED TO DATE

HUNTS POINT WPCP SITE

The NYCDEP Subsurface Site Investigation of the existing Hunts Point WPCP plant site (1998-1999) for the portions of the plant affected by the Phase III upgrade and carbon addition facility is summarized in this section.

Site Topography and Geology

The existing Hunts Point WPCP is located within the Manhattan Prong Subprovince of the New England Uplands Physiographic Province. The area's geology is metamorphic bedrock overlain by glacial till. Most of the Bronx is underlain by Manhattan Schist; Fordham Gneiss and Inwood Marble area also present in the northern portion of Bronx County. The immediate Hunts Point WPCP area is relatively flat. The average elevation is 5 to 10 feet above mean sea level (msl). The topography in the area was formed primarily by stream erosion and deposition.

The site stratigraphy indicates that a large portion of the existing Hunts Point WPCP site was open water that was eventually filled with heterogeneous fill materials. A fill layer of varying thickness was identified during field investigations. The thickness of the fill layer varies from 4 to 30 feet, and consists of the following materials: fine to coarse sand and gravel; silt with cobbles, asphalt, wood, brick, root, and concrete fragments. The fill material is underlain by the following layers: a glacial deposit layer 8 to 30 feet thick; an organic silt layer 5 to 25 feet thick (the thicker layers were identified on the eastern portion of the site); a decomposed bedrock layer less than 5 feet thick; and a bedrock layer consisting of mica schist with layers of garnet gneiss.

Groundwater at the site is located approximately 8 to 20 feet below ground surface (bgs). The groundwater is expected to flow southwest toward the East River and vary with tidal fluctuation.

Results of Soil Sampling

In the area of the Hunts Point WPCP that would be affected by the proposed Phase III Upgrade, ten (10) subsurface borings were advanced on the site as part of the 1999 site investigation (see Figure 14-2). Three (3) of these borings (B-12, B-13, and B-20) were tested for geotechnical characteristics only to aid in the design of proposed building foundations. The remaining seven (7) borings (BE-11, BE-14, BE-15, BE-16, BE-17, BE-18, and BE-19) were tested for both geotechnical and environmental characteristics. An additional boring (BE-22) was located in the vicinity of the proposed carbon addition facility. The samples were analyzed at several depths for a variety of contaminants, including VOCs, SVOCs, and priority pollutant metals. The sampling did not identify large areas of soil contamination. O-Xylene was detected at boring BE-16 at a concentration of 0.0012 mg/kg. Toluene was detected at borings BE-16 and BE-17 at concentrations of 0.0024 and 0.0012 mg/kg, respectively. Due to the low levels of detection, VOCs were determined not to be constituents of concern at the site.

Low levels of SVOCs and metals were detected throughout the site. Of the eight samples analyzed for SVOCs, two samples within the sludge digester complex (BE-16 and BE-17) contained SVOCs. Fluoranthene and pyrene were detected at BE-16 at low concentrations that are likely representative of background soil contamination due to the placement of urban fill. However, at sample location BE-17, numerous SVOCs and polycyclic aromatic hydrocarbons (PAHs) were detected. These contaminants included: acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene,

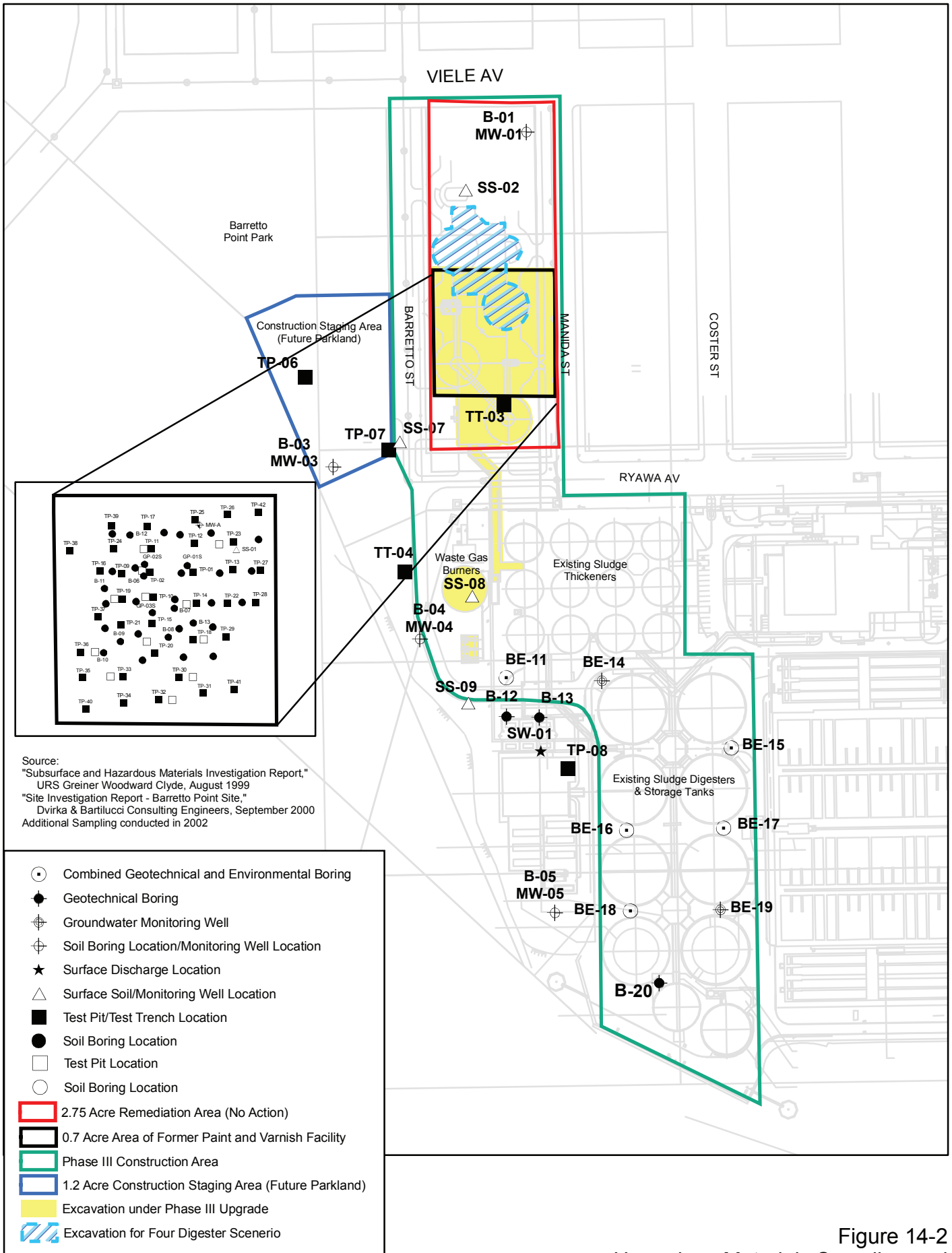


Figure 14-2
 Hazardous Materials Sampling and
 Areas of Proposed Excavation

benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. A nearby sludge storage tank was identified as a possible source of the PAH contamination. Since no excavation is planned for that area, no exposure pathway would occur that would pose a risk to construction workers.

Of the eight samples analyzed for priority pollutant metals, three contained metals above average background concentrations. At location BE-11, beryllium was detected at 0.32 mg/kg, chromium was detected at 14 mg/kg, and zinc was detected at 24 mg/kg. Zinc was detected at 25 mg/kg at location BE-16. Chromium and zinc were detected at location BE-17 at 12 mg/kg and 28 mg/kg, respectively. These contaminants were detected at low levels that are likely the result of background soil concentration due to the placement of urban fill at the site, rather than from plant operations. Therefore, metals were determined not to be constituents of concern at the Hunts Point WPCP site.

Results of Groundwater Sampling

Groundwater monitoring wells were installed in two of the subsurface borings advanced as part of the soil sampling program discussed above—BE-14 and BE-19. These groundwater monitoring wells were located in the area of the existing sludge digester complex. Groundwater samples were also obtained directly from open boreholes at several locations (BE-15, BE-16, and BE-18) in the sludge digester complex. An oil-water interface probe was used to assess the presence of floating product. No floating product was detected at any of the wells. The samples from the two groundwater monitoring wells were analyzed for VOCs, SVOCs, and priority pollutant metals and the samples from the open boreholes were screened for VOCs and SVOCs. The results were compared to the New York State Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards (March 18, 1998). One SVOC compound (3,4-methylphenol) was detected at 1.6 $\mu\text{g/L}$, above the groundwater standard of 1 $\mu\text{g/L}$, however, it was reported as an estimated value since it was below the method detection limit. No other contaminants were identified above standards at any of the sample locations. Based on the results of this sampling, VOCs were determined not to be constituents of concern in groundwater at the site. SVOCs and metals (including lead, zinc, and chromium) were detected in the groundwater at low levels that likely indicate background contamination due to the placement of urban fill, and were determined to be unlikely the result of plant operations.

Lead Paint and Asbestos Inspection

A lead paint and asbestos investigation was also performed in 1999 to assess the potential for lead and asbestos within on-site buildings or in underground piping. The investigation included the inspection of potential locations of lead-based paint and asbestos-containing material and the collection and analysis of bulk samples. The investigation included areas affected by the proposed Phase III Upgrade such as the existing sludge thickener complex, the existing digester complex, and the tunnels underneath the thickeners and digesters.

Bulk samples of suspected lead-based paint and bulk samples of suspected asbestos-containing material were collected and analyzed. The paint samples were categorized as “lead containing” in accordance with the U.S. Department of Housing and Urban Development (HUD) guidelines, which defines lead paint as paint containing at least 0.5 percent lead by weight. Based on this criterion, lead-based paint was identified in the sludge thickeners, the digester complex, and the tunnels underneath the digester complex. The asbestos samples were collected from the various roof areas. The material was defined as asbestos-containing material if it contained greater than

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1.0 percent asbestos by weight. Based on this criterion, asbestos-containing material was identified in the sludge thickener roofs and the digester complex roofs.

BARRETTO POINT SITE

The NYCEDC/NYCDEP site investigation of the Barretto Point Site (1999-2002), except for the 5-acre Barretto Point Park that was independently remediated, is summarized in this section. The remaining Barretto Point Site consists of 8 acres: the 5.5-acre parcel (4.3-acre additional parcel and 1.2-acre construction staging area) and 2.5 acres located at the western portion of the existing Hunts Point WPCP.

Site Topography and Geology

Similar to the existing Hunts Point WPCP site, the Barretto Point Site is underlain by fill material, a glacial deposit layer, and weathered bedrock. The fill material layer is estimated to range from one foot thick to over 15 feet thick, and consists of varying composition (e.g., sand, silt, gravel, C&D debris). The glacial till layer consists of fine to medium sand and fine to coarse gravel with trace amounts of clay, and varies from 6 to 20 feet thick. No glacial till layer was identified along the western shoreline (which historically was open water). The weathered bedrock layer, identified at depths ranging from 14 to 24 feet below ground surface (bgs), was characterized as black-gray mica schist.

Depth to groundwater at the site ranges from 8 to 18 feet bgs and varies with tidal fluctuation. The groundwater is expected to flow southwest toward the East River.

Past Uses of Site

The site investigation included a review of historic aerial photographs and Sanborn fire insurance maps. Based on aerial photographs, it was determined that much of the western edge of the site along the East River was previously open water that was filled between 1954 and 1978. Early uses of the site include a yacht club (1915) in the northern portion of the site. Most of the site was developed for industrial purposes by the 1950s. The Hunts Point WPCP was constructed just east of the site in 1950-1952. An asphalt plant was located in the southwest corner (near Barretto Street and Ryawa Avenue); and coal pockets (large rectangular structures likely used for the storage of coal) existed along the East River. An aerial photograph from 1962 indicated the removal of the coal pockets. Historical uses in the eastern portion of the site (bound by Barretto Street, Manida Street, and Ryawa Avenue) included iron works, food products manufacturing, and a paint and varnish manufacturer. A portion of the site (south of Ryawa Avenue) was used for leaf composting during the mid-1990s. That area is now being used for the westward expansion of the WPCP. Squatter dwellings were constructed to the west of Barretto Street during the 1990s. The City of New York subsequently relocated the occupants and removed the structures. The existing site is vacant with overgrown vegetation.

Results of Site Investigation

A 1999 site reconnaissance survey identified an existing groundwater monitoring well, several open boreholes, a surface discharge, and an area of stressed vegetation. During the subsequent site investigation in 2000, samples were collected from the existing groundwater monitoring well, the surface discharge area, and the area of stressed vegetation. The open boreholes were properly abandoned at the time of this investigation. The 2000 site investigation also included the following: site clearing; a geophysical survey; a radiological survey; a soil vapor and soil groundwater screening survey; soil samples to assess surface contamination; test pits and test

trenches to characterize fill material; soil borings and monitoring wells; a tidal study; and groundwater sampling and elevation measurements. Detailed sampling, including 46 test pits and 33 soil borings, was performed in the area of the former paint and varnish manufacturing facility to delineate soil contamination. In addition, one sample was obtained from the surface discharge area.

The results of the soil and groundwater samples were compared to NYSDEC's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code and NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046 "Determination of Soil Cleanup Objectives and Cleanup Levels." TAGM 4046 sets recommended soil cleanup objectives (RSCOs) for contaminants in soils. The RSCOs are conservative values based on exposures on residential sites and on background levels in native soils. The primary constituents of concern detected in those portions of the Barretto Point Site that would be affected by the Phase III Upgrade (i.e., the 5.5-acre additional parcel and the 2.5-acre portion of the existing Hunts Point WPCP site), were SVOCs and metals. VOCs were identified as additional constituents of concern within the 0.7-acre area of the former paint and varnish manufacturing facility. The results of the sampling are discussed below, followed by a discussion of the results of the detailed sampling within the 0.7-acre area of the former paint and varnish manufacturing facility.

Site-Wide Sampling

Surface soil samples were obtained throughout the site and analyzed for VOCs, SVOCs, and metals. The sample results indicated that surface soils throughout the site have been impacted by carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) and metals in excess of NYSDEC standards and guidance. PAHs are products of incomplete combustion and are common in soils in urban areas. The concentrations of total or individual VOCs did not exceed RSCOs in any of the surface soil samples. Due to the detection of CaPAHs and metals at low levels throughout the site, the presence of these contaminants were attributed to the placement of historic fill and/or the historic asphalt and coal operations at the site.

Soil borings, test pits, and trenches were excavated to assess subsurface soils. The test pits and trenches were excavated to the lesser of the groundwater table or the maximum reach of the backhoe (approximately 15 feet), unless refusal was encountered. The samples were analyzed for VOCs, SVOCs, and metals. Test pits TP-06 and TP-07 and soil boring SB-03 located in the proposed construction staging area, contained CaPAHs in excess of the RSCOs. TP-06 also contained lead in excess of the RSCOs. Test trench TT-04, along the western boundary of the existing Hunts Point WPCP site near the proposed replacement waste gas burners, also contained CaPAHs and metals in excess of the RSCOs.

It was concluded that the low levels of SVOCs and metals found throughout the site were likely due the placement of historic fill and/or the historic asphalt and coal operations at the site.

Former Paint and Varnish Manufacturing Facility

During the initial phase of the site investigation in 1999, fifty (50) soil vapor samples were collected in the area of the former paint and varnish manufacturing facility, a portion of the 4.3-acre additional parcel. Elevated concentrations of VOCs were detected, including ethylbenzene, toluene, and xylene. The concentrations and locations of these contaminants indicted the source was likely the former paint and varnish facility.

During the subsurface soil investigation, VOCs were detected in TP-02 within the area of the former paint and varnish facility. Ethylbenzene was detected at 110 ppm, above the RSCO of 5.5 ppm, and xylene was detected at 510 ppm, above the RSCO of 1.2 ppm. TP-01 contained benzo(a)pyrene, a CaPAH, slightly above the RSCO. Both TP-01 and TP-02 contained metals at concentrations exceeding the RSCOs. The localized VOC contamination found in the 0.7-acre area was attributed to the paint and varnish facility operations.

Due to the soil vapor and test pit results in this area, an additional 34 test pits (TP-09 through TP-42) and 11 soil borings (GP-01S, GP-02S, GP-03S and SB-06 through SB-13) were excavated in 2000. The presence of contamination was confirmed by observance of visual staining, odors, or elevated field instrument readings. Confirmatory VOC soils samples were obtained from test pits without odor or staining. In 2002, a supplemental soil investigation was performed to further delineate and characterize the VOC contamination in the area. As shown on Figure 14-2, this supplemental investigation included 22 additional soil borings (SB-14 through SB-23, SB-25 through SB-29, SB-31 through SB-34, and SB-36 through SB-38) and twelve additional test pits (TP-02A, TP-10A, TP-11A, TP-14A, TP-18A, TP-19A, TP-20A, TP-23A, TP-30A, TP-32A, TP-33A, and TP-SB10A). The concentrations of total VOCs (including tentatively identified compounds) in most of the supplemental test pit samples were above the TAGM 4046 soil cleanup objective of 10 ppm. Total VOC concentrations were detected as high as 5,247 ppm. Based on these results, it was concluded that the operations of the paint and varnish manufacturing facility had resulted in substantial soil contamination in the 0.7-acre portion of the Barretto Point Site.

Groundwater Sampling

Groundwater sampling along the East River shoreline of the existing Hunts Point WPCP indicated the presence of VOCs and SVOCs at low levels. Groundwater samples in the area of the former paint and varnish manufacturing facility indicated significant levels of VOCs. While groundwater is not used for drinking water supply in the Bronx, other exposure pathways were assessed. Soil vapor testing indicated that volatilization of the groundwater contaminants may be possible in the area of the former paint and varnish manufacturing facility. It was determined that the contaminated groundwater would be unlikely to impact the East River due to tidal fluctuations in the groundwater. Groundwater sample analyses downgradient of the former paint and varnish manufacturing facility indicated low levels of the constituents of concern. While elevated levels of CaPAHs and metals were detected in unfiltered groundwater samples, it was concluded that these contaminants were likely due to unfiltered suspended particulates in the samples. The surface water discharge sample showed chloroform and antimony slightly above standards.

Overall, it was concluded that the substantial levels of VOCs in the area of the former paint and varnish manufacturing were due to the former facility's operations, and the low levels of SVOCs and metals throughout the site were likely due the placement of historic fill.

C. THE FUTURE WITHOUT THE PROPOSED ACTION

A Proposed Remedial Action Plan for the 13-acre Barretto Point Site was issued by NYSDEC, in consultation with the New York State Department of Health (NYSDOH), in August 2003. A Record of Decision (ROD) was subsequently issued by NYSDEC in December 2003. Since the development of the Barretto Point Site was to be bifurcated into separate uses (i.e., the 5-acre Barretto Point Park that has since been constructed by NYCDPR, and the remaining 8-acre

portion, which would be affected by the Phase III Upgrade), the Remedial Action Plan included in the ROD described separate remediation plans for these two developments. The implementation of the Remedial Action Plan has been sequenced to account for different phases of remediation on the non-park portions (8 acres) of the Barretto Point Site (see Figure 14-2). The remediation phases for the 8-acre portion are as follows:

- Remediation of a 2.75-acre area. A 2.75-acre area of the additional 4.3-acre parcel consisting of Lots 100 and 105 of Block 2777 will be remediated in the future without the proposed action. This remediation will occur in accordance with the Remedial Action Plan and ROD issued December 2003 by NYSDEC. A Negative Declaration for this effort was issued on October 27, 2006. Within a 0.7-acre area (the former paint and varnish manufacturing facility) of the 2.75-acre area, the remediation includes excavation of contaminated soils; disposal of excavated material to an appropriate off-site NYSDEC approved treatment/disposal facility; the installation of a temporary structure and carbon filters to control dust and emissions during excavation; extraction and treatment of groundwater encountered during excavation of VOC-contaminated soils; discharge of treated groundwater to the Hunts Point WPCP for final treatment; and backfilling the excavation with clean fill. Two feet of clean fill will be placed on the entire 2.75-acre area as part of the site remediation. This remediation, which has been expedited to address the most contaminated portion of the 8-acre area, is scheduled to commence in the third quarter of 2008 and last for approximately one year.
- Remediation of the remaining 5.25-acre portion of the 8-acre site (Block 2777, Lot 600 and part of Lot 901, and Block 2779, part of Lot 1). This remediation will be performed either with or without the proposed action. In the future without the proposed action, this area would be remediated in the near term. However, since the area would be used for construction of certain Phase III elements and for construction staging, under the proposed action this area would be remediated during the construction of the Phase III Upgrade. This remediation is discussed below under “Probable Impacts of the Proposed Action.”

D. PROBABLE IMPACTS OF THE PROPOSED ACTION

OVERVIEW

As described above in “Existing Conditions,” previous site investigations conducted for the existing Hunts Point WPCP site and the Barretto Point Site identified soil and groundwater contamination at locations where construction is proposed for the Phase III Upgrade. The areas that would be affected by the proposed action include the western portion of the existing Hunts Point WPCP site (including the area of the existing sludge thickeners, storage tanks, and digesters), the 5.5-acre parcel of city-owned land located to the northwest of the existing plant boundary (including the 1.2-acre construction staging area that would eventually be transferred to NYCDPR), and the carbon facility area. The polymer addition facilities would be located within the centrate building being constructed as part of the Phase II Upgrade, so no new construction would be required.

Construction activities would increase potential pathways for exposure of construction workers, workers at the WPCP, and others in the vicinity to contaminants in the soil and groundwater, including metals, PAHs, and volatile organic compounds.

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The carbon addition facilities required to meet future nitrogen reduction goals will add methanol or ethanol as an additional carbon source to the wastewater treatment process at the aeration tanks. The polymer addition facilities will assist in controlling froth in the wastewater treatment process. This section assesses the potential for impacts from transportation, storage, and use of these chemicals.

IMPACTS DURING CONSTRUCTION

The proposed action would involve construction on the existing Hunts Point WPCP site and the additional 5.5-acre parcel of land located to the northwest of the existing site. Construction for the proposed action would involve a variety of earth-moving and excavating activities which would expose and disturb contaminated soil or groundwater. The maximum expected depth of excavation would be 25 feet below grade in the area of the proposed egg-shaped digesters.

Testing performed in the proposed construction areas have detected levels of PAHs and metals that exceed the most stringent guidance values for surface soils at residential sites. These contaminants are commonly found in historic urban fill material that may include demolition debris, coal or incinerator ash, and other wastes. Higher levels of contamination have been found in the 2.75-acre area to be remediated prior to construction (see “The Future Without the Proposed Action”) In addition, during renovation of the existing digesters, thickeners, and interconnecting tunnels, lead paint and asbestos would be encountered.

The presence of hazardous materials threatens human health or the environment only when exposure to those materials occurs, and, even then, a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. In order to prevent such exposure pathways and doses, the proposed action would include appropriate health and safety and remedial measures that would precede or govern all construction activities with the potential to encounter hazardous materials. These measures are described in the following section. With the implementation of these measures, no potential significant adverse impacts are expected related to the hazardous materials on the site.

REMEDICATION OF 8-ACRE AREA PURSUANT TO NYSDEC ROD

As described above (see “Remediation Efforts Conducted to Date or to be Undertaken in the Future without the Proposed Action”), Lots 100 and 105 of Block 2777 consisting of 2.75 acres between Barretto Street and Manida Street south of Viele Avenue and north of Ryawa Avenue will be remediated prior to the Phase III Upgrade by NYCDEP in accordance with the ROD. This area includes the 0.7-acre former paint and varnish manufacturing facility area where soil and groundwater contaminated with volatile organic compounds have been detected.

The remaining 5.25-acre portion of the 8-acre site to be remediated by NYCDEP (Block 2777, Lot 600 and part of Lot 901, and Block 2779, part of Lot 1) would be remediated during the construction of the Phase III Upgrade. Remediation of this area will include placement of two feet of clean fill over the entire area with a demarcation barrier to mark the interface between the existing soil and the clean fill.

Additional remedial measures applicable to the entire 8-acre site include institutional controls in the form of an environmental easement that would require compliance with an approved soils management plan for any future development, and institution of a long-term maintenance program. These measures will be developed as part of the final engineering report at completion of the construction activities for the Phase III Upgrade. The soil management plan will include

procedures for handling soil excavated from below the soil cover and demarcation barrier during any future construction or utility replacement. The institutional controls will include annual inspections and reporting. NYCDEP will be responsible for submitting a Site Management Plan annual report to NYSDEC describing that the institutional controls remain in place. NYSDEC will require that NYCDEP certify on an annual basis that all institutional and engineering controls employed at the site are in place and effective; performing as designed; are capable of protecting the public health and the environment; and are in compliance with the operation and maintenance plan. The operating bureau, Bureau of Wastewater Treatment, is responsible for identifying the presence of institutional controls and ensuring that they are implemented. Institutional controls and health and safety requirements would be incorporated into the Plant Operations and Maintenance Manual (O&M) which will be updated after the Soil Management Plan is approved by NYSDEC.

REMEDIATION OF ALL AREAS AFFECTED BY PROPOSED ACTION

Soil Management

All contaminated soils in the areas to be excavated would be removed and disposed of in accordance with all applicable federal, state, and local regulations. Due to the extensive soil and groundwater sampling performed to date, no additional site investigations are anticipated at this time. If it is determined that additional subsurface site investigations are needed to delineate the nature and extent of contamination and/or to determine the disposal requirements for the soils prior to excavation, they will be performed in accordance with a NYCDEP-approved sampling plan. These investigations would generally include testing of soil and groundwater for a range of constituents. Borings would be advanced, at a minimum, to the approximate maximum depth of excavation. Soil samples may be taken at a series of depths to determine the extent of any contamination. Soil samples would be analyzed for metals, volatile and semi-volatile organic compounds, pesticides and polychlorinated biphenyls (PCBs). Groundwater testing would also generally be performed if construction were to extend below the water table and/or require dewatering (see “Dewatering,” below). If evidence of spills is detected, the spill would be reported to NYSDEC. A Remedial Action Plan for remediation of the spill would be submitted to NYCDEP and NYCDEP and would be implemented as part of the site remediation.

Based on the analytical results of the characterization soil samples, the soils would be disposed of as follows:

- If the soils do not exhibit the characteristics of a hazardous waste, the soils would be disposed of at a permitted solid waste facility or transported to a soil recycling facility or asphalt batch plant for treatment provided that such disposal, recycling or treatment is in accordance with federal, state, and local regulations and requirements; or
- If the soils exhibit the characteristics of a hazardous waste, the soils would be disposed at a Resource Conservation and Recovery Act (RCRA)-permitted hazardous waste disposal facility.

Construction Health and Safety Plan

Construction Health and Safety Plans (CHASPs) would be developed and approved by NYCDEP for the various construction activities associated with the project to reduce the potential for worker or public contact with contamination found in either the soil or groundwater. These plans would address the potential exposure pathways and other safety concerns associated with a variety of

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construction methods. Each CHASP would address both the known contamination issues (e.g., the presence of high PAHs in the area of the existing sludge digester complex) as well as contingency items (e.g., if unknown contamination is encountered). The CHASP would be developed in accordance with U.S. Occupational Health and Safety Administration (OSHA) regulations and guidelines.

The CHASP would be the primary measure used to safeguard construction workers and nearby residents during construction work. This document would describe in detail all air, soil and water sampling and monitoring that would take place during construction work, planned response to monitoring data, personal protective equipment (PPE) and respiratory protection to be used by workers in various parts of the excavation, dust and vapor control measures, proper decontamination routines, and emergency procedures. These procedures would include requirements to notify appropriate regulatory agencies as well as procedures to quickly and safely address the various issues. The CHASP would also generally include routine monitoring of both air and soil. Material Safety Data Sheets (MSDSs) for detected compounds in the subsurface would be included in the CHASP.

The provisions of the CHASP would be mandatory for the contractors and subcontractors engaged in any construction activities that have the potential to expose their personnel to the existing soils or groundwater at the site. In addition, all on-site personnel would be required to follow all applicable local, state, and OSHA construction codes and regulations.

Engineering controls, such as dust suppression, would be implemented or work activities would be temporarily ceased as needed to mitigate the potential for off-site migration of airborne constituents. The off-site community will also be protected through other measures designed to limit direct contact with on-site materials. Such measures would include appropriate access controls (e.g., fencing) and proper management of all waste streams generated during on-site activities through the implementation of soil and groundwater management plans.

Dewatering

In most areas, construction would require dewatering and contaminated groundwater may be encountered. If testing of the groundwater showed that it exceeded the City's pretreatment standards, the water would be treated prior to its discharge to the Hunts Point WPCP. An appropriate testing program where groundwater is known, or suspected to be contaminated would be developed.

Asbestos-containing Materials and Lead-Based Paint

The existing sludge digesters, sludge thickeners, and associated pipes contain asbestos-containing materials and lead-based paint. Prior to renovation of these structures, all asbestos-containing materials that would be impacted by the renovation work would be removed by a licensed remediation contractor and disposed of in accordance with applicable federal, state, and local rules and regulations, which include requirements for third-party air monitoring. Any renovation activities with the potential to disturb lead-based paint would be performed in accordance with the applicable OSHA regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction). The construction specifications for ACM and LBP abatement will include requirements for air monitoring and containment measures to protect the public and on-site workers. The contractor will develop the construction procedures and submit them for approval to NYCDEP prior to undertaking any removal and disposal of ACM or LBP.

CHEMICAL STORAGE AND HANDLING AT THE UPGRADED PLANT

A number of chemicals are used for operation of the Hunts Point WPCP. These chemicals are typically used at wastewater treatment plants as part of daily operations. Chemical and petroleum fuels storage is a necessary component of normal plant operations. Petroleum is stored onsite for fuel and for the emergency generators. To minimize the potential impacts related to accidental spillage, the Hunts Point WPCP would continue to comply with New York State Petroleum and Chemical Bulk Storage design criteria, including secondary containment and other requirements. Plant personnel are instructed in the handling of all chemicals and, in the case of a spill, are required to abide by the emergency response and spill containment procedures for workers to contain spilled materials and contact the appropriate emergency response organizations, if necessary. These procedures include emergency response and spill containment procedures for all chemical usage associated with plant operations. MSDSs for all chemical products used at the plant are available and would continue to be available on-site for plant personnel use.

The proposed action would include carbon addition facilities. The carbon addition facility would consist of underground storage tanks where either methanol or ethanol would be stored. Methanol and ethanol are considered hazardous because of their flammability and their storage and use are therefore strictly regulated by the New York City Fire Department (FDNY). FDNY codes stipulate that all flammable liquids must be stored in underground double-walled concrete encased containment tanks. Storage and handling facilities shall have fire suppression and prevention systems to maximize safety. Fire protection systems will include automated detection with thermal detectors and automated activation of fire fighting foam systems.

Polymer addition facilities would be constructed to enhance nitrogen removal facilities being constructed as part of the Phase II Upgrade. The Full Step Feed Biological Nutrient Reduction (BNR) facilities being constructed under the Phase II Upgrade result in excess froth in the wastewater process. Polymer is added to assist in froth control. The polymer would be nonflammable and non-hazardous. Polymer addition facilities, which would include storage tanks, feed equipment, and piping, would be installed in the basement of the centrate building being constructed as part of the Phase II Upgrade.

These new chemicals, and the chemicals already used for operation of the plant, would need to be transported to and from the plant. The shipment of these chemicals is contracted by NYCDEP to licensed vendors and haulers, and is regulated by applicable New York City Department of Transportation (NYCDOT), New York State Department of Transportation (NYSDOT), NYSDEC, and Federal regulations. These regulations include chemical-specific packaging and labeling requirements for shipping containers and vehicles. Shipping papers and proof of medical testing for drivers are required for the shipment of certain hazardous materials, if transported in sufficient quantities. In addition, requirements for on-board emergency equipment during materials shipment (e.g., flares, fire extinguishers, pH neutralizers, etc.) are also included. Truck transportation through the local community will be on NYCDOT permitted routes only. With the continued implementation of these measures, no potential significant adverse impacts are expected from chemical storage and handling at the Hunts Point WPCP.

CONCLUSION

Construction of the proposed action would include appropriate health and safety and remedial measures that would precede or govern all construction activities with the potential to encounter

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hazardous materials. With the implementation of these measures, no potential significant adverse impacts are expected during construction.

Transportation, storage, and handling of the new chemicals associated with the Phase III upgrade, and the chemicals already used for operation of the plant would be in accordance with all applicable federal, state, and local regulations and guidelines. With the implementation of these measures, no potential significant adverse impacts are expected from chemical storage and handling at the Hunts Point WPCP. *