Historic Report

- Hunts Point Food Distribution Center Alternatives Analysis Report, Parcel E OU-2, Bronx, NY, Henningson, Durham, and Richardson Architecture and Engineering P.C., June 2011

Hunts Point
Food Distribution Center

Alternatives Analysis Report
Parcel E OU-2, Bronx, NY

- Final -

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Corporation

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1 INTRODUCTION

Henningson, Durham & Richardson Architecture and Engineering P.C. in association with HDR Engineering, Inc. (HDR), on behalf of the New York City Economic Development Corporation (NYCEDC), is presenting this Alternatives Analysis Report (AAR) with the goal of selecting a remedy for the planned redevelopment of Site E OU-2 (Site) located in the Hunts Point Food Distribution Center (HPFDC). Implementation of the subsequent Remedial Action Work Plan (RAWP) and redevelopment will result in a remedy in accordance with cleanup goals set forth in 6 NYCRR Part 375-3.8.

This report is presented in the following order:

Section 1 – Introduction, describes the Site, surrounding area, its history, and sampling data.

Section 2 – Remedial Action Objectives (RAOs), presents two general remedial alternatives.

Section 3 – Remedial Action Selection, presents the remedy selected for approval by New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH).

Section 4 – Remedial Action and Construction Activities, presents a description of redevelopment activities as well as engineering and institutional controls.

1.1 Project Background

Under the provisions and requirements of the NYSDEC Voluntary Cleanup Program (VCP), the NYCEDC is presenting this AAR for Site E OU-2 (Site), identified as NYSDEC VCP Site No. V00681-2. This AAR presents two general remedial alternatives that are being evaluated for the Site. A recommendation for a remedial alternative selection is included with this AAR following the description of both alternatives. The property is currently known as Operable Unit 2 of Parcel E (Site E OU-2) (Block 2781, Lot 500) Bronx, New York. The Site is shown on Figure 1, Site Location Map, located in the Figures section of this submittal. Commercial use of the Site as an alternative fuel facility is proposed for the property.

Site E is divided into three Operable Units (1, 2, and 3). Figure 2 shows the boundaries of Site E. A metes and bounds description of the Site is included in Attachment 1. Operable Unit 1 (D2-0004-94-04) received a signed release letter dated August 25, 2003 (Attachment 2). Figure 3 shows the 2004 aerial photograph of Hunts Point and the approximate location of Site E OU-2 relative to other Hunts Point Voluntary Cleanup Program (VCP) sites and the Con Edison easement located south of the Site. E OU-2 is bound on the south by a Con Edison easement located along the Con Edison Gas Compressor Station and by the HPFDC Meat Market Cooperative (Figures 2 and 3), on the west by Halleck Street, the Con Edison Compressor station entrance and, on its southern portion, by an area within the HPFDC that is currently undeveloped (also known as Site E OU-3), on the east by Site E OU-1 and on the north by Food Center Drive (formerly East Bay Avenue). The Site includes three separate areas (shown on Figure 4):

1. **The Development Parcel**: The specific Alternative Fuel Facility redevelopment area covered under this AAR. The proposed redevelopment will include several different types of alternative fuels possibly including bio diesel, ethanol and compressed natural gas. The facility will also offer a wide range of other services possibly including a restaurant, convenience store, green marketing, truck maintenance and retrofitting and electrification.

2. **The Iroquois Access Road**: A narrow strip that runs along the northeast boundary of the Site that was developed as the access road into the Iroquois facility under the Iroquois Gas Pipeline project. Work related to the Voluntary Cleanup Agreement (VCA) is considered to be completed in this area.

3. **The SE Segment**: A portion of the Site, located in the southeast corner, which was investigated and remediated along with the initial E OU-1 area. This area will receive a no further action (NFA) letter with the completion of the Development Parcel. Work related to the VCA is considered to be completed in this area with the exception of placement of the surficial engineering controls.

Site E OU-2 is currently undeveloped and vacant. Site redevelopment plans include the construction of two aboveground structures and the installation of numerous underground utilities including underground storage tanks. The preliminary redevelopment plan is shown in Figure 4.

Several investigations and subsequent Reports have been issued for the Site. They include:

- Investigative Scope of Work for Operating Unit Portion of Parcel E, Bronx, NY, June 1999;
- Response Plan for the Operating Unit Portion of Parcel E, Bronx, NY, September 2000;
- Site Investigative Report Operable Unit 2 of Parcel E, Bronx, NY (Draft) 2005;
- Response Plan, Operable Unit 2 Portion of Parcel E, Bronx, NY, June 2007; and
- Interim Remedial Measure Scope of Work, Operable Unit 2 Portion of Parcel E, Bronx, NY, November 2007.

The September 2000 Response Plan included the area identified in this report as the SE Segment and did not address the Development Parcel. The subsequent investigation on E OU-2 was completed and a draft report was submitted in 2005. Due to the levels of contamination encountered during that investigation, and documented in the draft report, NYSDEC requested additional sampling and delineation. The additional sampling data was added to the report and it was submitted final in June 2007. Per NYSDEC's request the title was changed to Response Plan, Operable Unit 2 Portion of Parcel E. In 2007 a potential developer planned to incorporate all of Parcel E into a larger development project. This project area was to include the western portion of E OU-1, E OU-2 in its entirety, as well as a new contiguous area now identified as E OU-3 (Figure 3). This 2007 configuration was not advanced past the planning stages; however, in an effort to make the entire Site available for redevelopment, NYCEDC Submitted the IRM Scope of Work that was finalized in November 2007.

The IRM presented the removal plan detailed in the 2007 Response Plan but did not incorporate a specific redevelopment. The removal plan proposed the excavation and off-Site disposal of approximately 2,500 cubic yards (cyd) of material severely impacted with coal tar and purifier waste. Stipulations of the IRM stated that any future development project would be required to incorporate additional engineering and institutional controls to complete the Site remedy. The approximate volume of material identified for removal was determined during the delineation investigation. The limits of the excavation areas are based on a qualitative examination of the material that is severely impacted rather than specific analytical limits. This approach is consistent with previous redevelopment and remedial efforts completed within the footprint of the former Hunts Point Manufactured Gas Plant (MGP). Residual contaminants will be addressed with engineering and institutional controls to eliminate exposure to historic Site fill.

Conditions within the footprint of the former Hunts Point MGP vary; however, fill material consistently includes soil, construction and demolition material, ash, cinders, residual coal and material moderately to severely impacted by MGP waste (coal tar and purifier waste). Concentrations of these various components in the fill materials vary widely and make using analytical limits to isolate areas targeted for removal virtually impossible. Comparing the variable concentrations of metals and semi-volatiles found throughout the fill materials to strict cleanup limits would result in the excavation and disposal of nearly the entire peninsula. Alternatively, engineering controls or caps consisting of bituminous pavement, acceptable fill, or concrete building slabs with vapor barriers and passive venting systems have been used to eliminate exposure to remaining fill. The use of these controls in a consistent manner has allowed planning, design and construction on the impacted development parcels to move forward. The same approach was proposed for Site E OU-2 following the removal of the severely impacted fill as described in the IRM.

1.2 Site Description

The NYCEDC plans to facilitate the redevelopment of the Site as part of ongoing improvements to the HPFDC. The HPFDC is located in the South Bronx on the Hunts Point peninsula extending into the East River and is relatively level with some minor topographic highs and lows. The HPFDC incorporates several hundred acres of the Hunts Point peninsula. Underground storm drains across the Hunts Point peninsula direct surface drainage to the river outfalls. Much of the peninsula is developed and there are plans for redevelopment of several vacant parcels. Operations in the HPFDC include a meat market cooperative, a produce market cooperative, the New Fulton Fish Market, an Anheuser-Busch distribution center, several individual food distribution and preparation facilities, a presently inactive New York City Department of Sanitation (DSNY) transfer facility, and a Con Edison gas compressor station. Site E-OU2 is a vacant, relatively level, “L”-shaped parcel encompassing approximately 3.69 acres.

Site conditions similar to those observed at Site E-OU2 exist on other parcels located within the HPFDC. For instance, Site B, the location of the New Fulton Fish market, was redeveloped and found to contain areas of coal tar and purifier waste material. During the redevelopment at Site B, MGP-related wastes were encountered and disposed of, while minimizing worker contact with the waste. The Site B remedy was successfully implemented providing an engineered cap for historic fill and protecting the environment. The redevelopment of Site E-OU2 as an alternative fuel facility is anticipated to similarly benefit the HPFDC and protect the environment.

1.3 Site History

Prior to New York City purchasing the Site in or around 1968 (along with adjacent property to the south and east of the parcel) the property was owned by Consolidated Edison and operated as part of a larger MGP. The MGP was constructed between 1924 and 1932 and encompassed the entire southern portion of the Hunts Point Peninsula. The Plant operated until the early 1960s and included approximately 50 buildings or structures including one 15,000,000 cubic foot gas holder that was 254 ft in diameter and reportedly 365 ft high. Based on Sanborn Fire Insurance Maps, there were no significant MGP-related structures on Site E OU-2; however, any Site activities that may have occurred prior to 1968 were related to the operations of the MGP. MGP structures, including a large gas holder, filtration equipment and purifying beds, were reportedly located south and east of the Site **(**Figure 5).

The Iroquois Natural Gas Pipeline enters the Site from its route beneath Food Center Drive/East Bay Avenue and runs along the eastern boundary of the Site (Iroquois Access Road). The area adjacent to and immediately south of the parcel being redeveloped was retained by Consolidated Edison and is currently used as a natural gas compressor station. The adjacent parcel currently handles compressed natural gas from larger pipelines and distributes it into smaller infrastructure for use. The Con Edison site has been investigated separately and was found to have historic fill and levels of contamination similar to those across much of the Hunts Point peninsula. There was also some low level poly-chlorinated biphenyl (PCB) contamination encountered that may be a result of the post MGP facility storage of transformers.

No information or documentation has been identified that provides a specific source of MGP waste within the bounds of Site E OU-2. The sampling data from the two investigations is the only record of waste material within the Site. The investigation data was used exclusively for the preparation of the IRM and will be used moving forward to guide redevelopment work.

1.4 Material Characterization

*1.4.1 **Remedial Investigation***

As mentioned in Section 1.1, Project Background, an investigation was conducted on the Site and a subsequent delineation effort was performed as the basis of the approved IRM.

The Site investigation had the following objectives:

- To identify and mitigate potential hazards to Site workers during construction;
- To identify subsurface conditions and quantify and assess possible hazardous conditions; and
- To identify specific soil, groundwater and waste that would require special handling and or disposal.

Site investigations included advancing soil borings, test pits, and soil gas points and the collection of samples for visual examination and laboratory analysis. Soil/fill samples were typically analyzed for;

- Volatile Organic Compounds (VOCs)
- Semi-Volatile Organic Compounds (SVOCs)
- Resource Conservation and Recovery Act (RCRA) Metals (Metals)
- PCBs
- Pesticides
- Cyanide (Cn)
- Diesel and Gasoline-Range Organics (DRO and GRO respectively)

Waste characterization, including toxicity characteristic leaching procedure (TCLP) and RCRA analyses, was not completed during the investigations due to the investigation work being done well in advance of the remediation and the varying disposal facility requirements. A full description of the sampling activities is included in the IRM Scope of Work included in Attachment 3.

1.4.2 ***Soil and Groundwater Classification***

The surface of the Site contains various types of construction debris including concrete, boulders, guardrails and asphalt. Removal of these materials may be required for Site development; however, it is not specifically part of the recommended remedy, nor is it required by the VCA. All material that is excavated, demolished or removed from the Site as a result of the remedy or redevelopment will be classified in accordance with NYCRR Part 360 Solid and Hazardous Waste Regulations.

Because soil and fill material are mixed throughout the Hunts Point area with coal, coal ash and/or cinders, it has typically been classified, at a minimum, as industrial waste under Part 360-1.2(b)(88). Material classified as Construction & Demolition (C&D) debris, falling under the definition in Part 360-1.2 (b)(38), cannot contain historic fill material. Any material removed from the Site as C&D can contain only concrete, asphalt, rock, steel or other material free of historic fill. For purposes of the proposed remedy, historic fill includes all soils present at the Site at a depth above or below the clay layer. Soils and fill materials from below the clay layer that are excavated as part of the project will not be permitted to be disposed of as "soil" under the C&D definition (uncontaminated C&D). These materials will have to pass through the shallower soil horizons and will potentially come in contact with shallow groundwater impacted by Site fill; therefore, soils and fill materials from beneath the clay layer are considered "impacted" material. Additionally, coal and coal ash were found, consistently at or near the surface across the Site and cannot be segregated from the surrounding fill; therefore, topsoil or the uppermost layer of soil/fill that supports vegetation will also be excluded from disposal as C&D.

These restrictions and their application are intended to prevent uncontrolled recycling of inappropriate soil and/or fill at local beneficial reuse facilities registered under Part 360. These facilities are permitted to handle material defined under NYCRR Part 360 as "uncontaminated C&D". The fill material at the Site is considered impacted by former industrial uses and/or waste from that use and is therefore not appropriate for disposal at a beneficial reuse facility. If the developer wishes to use Site material for fill at another project site, a proper beneficial use determination (BUD) must be obtained from NYSDEC Division of Hazardous Remediation and Solid and Hazardous Waste and all approvals must be provided by NYSDEC prior to the removal of any material to that site. NYCEDC will retain final right of approval for any beneficial reuse request as the material is under ownership of the City of New York. A request to NYSDEC for a BUD will only be made for non-MGP impacted materials. Any sampling required by the NYSDEC to support a BUD will be performed prior to removal of material from the Site.

During the Site E OU-2 investigation, low level PCBs were identified in fill samples. All concentrations were below 1.0 mg/kg (NYSDEC surface soil criterion) with the exception of two locations. The samples from these two borings (both located in the central portion of the Site) were just above the surficial level with detected concentrations of 1.2 and 1.1 mg/kg respectively. During redevelopment, additional PCB material may be encountered as there is no documentation available that would limit its presence to one location. Sampling will be performed and material will be handled appropriately.

Site groundwater was encountered at relatively shallow depths [5 feet or less below ground surface (bgs)] and varies across the Site. It is expected that the depth of the water table will change during the year. Any groundwater encountered above the clay layer is assumed to be perched and is relatively shallow in depth (though s depth to water varied during investigation activities).

All groundwater pumped from the Site will require proper handling and/or treatment prior to discharging. Discharge to New York City sewers will require an industrial permit from New York City Department of Environmental Protection (NYCDEP). Prior to any discharge it must be shown that the subject combined sewer outfall (CSO)/sanitary sewer does not connect directly to any outfall that would allow water to be discharged directly to either the Bronx or East Rivers.

1.5 Proposed Construction Activities

Subsequent to, or coinciding with, the implementation of the Site remedy, Site redevelopment activities will also be completed. It is anticipated that Site Redevelopment plans will incorporate the final Site remedy. Redevelopment Plans include construction of two single story slab-on-grade buildings with no basements, aboveground storage of compressed natural gas, electrical transformers, a recycling area, a free standing canopy and fuel dispensers. Underground infrastructure may include: underground storage tanks for motor fuels; storm water detention and drainage; and electric, sanitary, water, and other utilities. Alternatives for Site drainage may require additional evaluation during final design, potential alternatives include, detention and/or direct infiltration. NYSDEC will be consulted during drainage evaluations to insure the solution is protective to human health and the environment.

Regardless of the remedial option chosen, historic fill remains in the soils surrounding the Site. Development plans will incorporate engineering and institutional controls to mitigate contaminant migration.

2 REMEDIAL ACTION OBJECTIVES

The objectives of this AAR are to present two potential remedies and identify which Alternative best meets the requirements of Part 375, is protective of public health and the environment and allows redevelopment of the Site as an alternative fuel distribution facility.

The Investigation Report has shown that the Site contains fill material indicative of the former MGP facility as well as waste products from the former MGP activities. Fill materials were described as consisting of coal mixed with coal tar, purifier waste material, areas with burned or unburned coal, and demolition and historic fill.

The following Remedial Action Objectives (RAOs) will be incorporated into the remedy and redevelopment:

1. Prevent contact with, or inhalation of, volatiles from contaminated groundwater.
2. Remove the source of groundwater contamination.
3. Prevent incidental ingestion/direct contact with contaminated soil.
4. Prevent exposure to contaminants volatilizing from contaminants in soil.
5. Prevent migration of contaminants that would result in impacts to groundwater.
6. Mitigate impacts to public health resulting from the potential for soil vapor intrusion into future buildings at the site.

3 REMEDIAL ACTION SELECTION

To address historic fill remaining on site following redevelopment, geotextile material will be used in any open or landscaped areas to prevent the mixing of the lower fill materials with the upper foot of topsoil during freeze-thaw cycles.

Based on the investigation and waste delineation the two remedial alternatives evaluated on the basis of protection to human health and the environment are presented below. The remedies also provide discussion as they relate to viable solutions for the cleanup of a relatively small Site that is part of a much larger former industrial parcel.

- **Alternative 1:** Excavation and off-Site disposal of approximately 2,500 cubic yds of visually identified MGP waste, as identified on Figure 6 and presented in the IRM. Excavations will be advanced to the depths indicated in the cross sections (included as Attachment 3, Figures 6 and 7). Final excavation depths will vary based upon subsurface field conditions and the presence of MGP waste. Residual Site contaminants will be capped in-place with an engineered cap, consisting of geotextile and approved fill (in unpaved areas), pavement with adequate sub-base (in parking and roadway areas) and a vapor barrier and passive venting beneath building floor slabs. .

- **Alternative 2:** Excavation, removal and off-Site disposal of all visually impacted materials to the extent feasible, within the metes and bounds of Site E-OU2, to the depth of the water table (approximately 5 to 8 feet bgs).

Both remedial alternatives take into account the proposed redevelopment of the Site as an alternative fuel distribution facility with above and below ground infrastructure. The alternatives presented eliminate direct contact exposures to the waste materials from the surface. Mitigation of the environmental impacts of the waste varies between the two options.

The following is a list of general items that will be included in and applied to either alternative as applicable:

- Pumping and treatment of groundwater during redevelopment activities may be required depending on construction methods and the ability to control contamination migration.
- The remedial alternative selected will include a Community Air Monitoring Plan (CAMP).
- All work will be performed under Health and Safety Plans that have been submitted to NYSDEC and NYSDOH.
- All contractors and subcontractors with staff working in contact or areas of potential contact with the MGP waste will be required to have Federal Occupational Safety and Health Administration (OSHA) 40-hour HAZWOPER training and provide documentation of that training.
- All required permits will be obtained prior to completing the associated stages of construction, including the preparation and submission of a Stormwater Pollution Prevention Plan (SWPPP) to NYSDEC.

- All vegetation currently on Site will be grubbed. Ground vegetation will be classified and disposed of with the assumption that it contains MGP waste. Trees cut above the ground surface may be separated from grubbed vegetation and roots requiring disposal as contaminated waste.
- All excavations will be advanced in accordance with applicable OSHA regulations (e.g. stabilization, shoring, etc).
- All excess material to be removed from the Site that does not contain MGP waste will be evaluated for a sustainable and practical off-Site disposal and will be fully classified and taken to a properly permitted facility.
- All approved backfill materials will be in accordance with NYCRR Part 360 or otherwise approved by NYSDEC.
- All efforts will be made before, during and after remedial and redevelopment construction activities to minimize or prevent contact between MGP waste and site workers.
- Any excess material generated will be staged for classification and off-Site disposal. All staged material will be placed on a base material (such as a liner), so as not to impact underlying soils, and will be covered to prevent runoff, dust or spreading of the stockpile.
- Upon completion of the final remedy, a Site Management Plan (SMP) will be used to cover all future intrusive work being performed at the site. The SMP would also provide backfill material restrictions and quality as well as the requirements for future work.

Alternative 1

Alternative 1 entails removal of approximately 2500 cubic yards of material that has been significantly impacted by and/or contains MGP waste. The areas identified for excavation are shown on Figure 6 and discussed in detail in the IRM (Attachment 3). Subsequent to the waste removal additional excavations may be advanced due to redevelopment requirements. Prior to completion of the redevelopment activities a cap will be installed on the Site. The remedy described in this section would eliminate exposure to the MGP waste at the ground surface. In addition to the general items listed above in this section, the following tasks would be completed to facilitate the excavation activities and the installation of an engineered cap on the Site:

- Excavation of waste materials for removal and disposal off-Site in accordance with Figure 6 and the IRM.
- Characterization of all waste and excavated material in-situ or staged for analysis at regular intervals to ensure proper handling, treatment and disposal.
- Lining of excavations for utilities with a geotextile prior to piping installations to protect workers.
- Completion of shallow excavations or Site grading in order to lower the existing grade and ensure that the engineered cap and Site surface are integrated into the existing roadway elevations.
- Determination of final grades during remedial and redevelopment design.
    - Excess excavated material (not containing MGP wastes) may be placed on-Site in an area beneath the cap; otherwise, excess material would be staged for classification and off-Site disposal.

- Installation of an engineered cap approximately one foot in total thickness.
    - Building slabs and sub base material with vapor barriers may be less than 1 foot.
    - Parking lot areas with asphalt and gravel sub base may be less than 1 foot in total thickness, but will meet loading requirements specific to proper vehicles that will use the facility (e.g., H-20).
- Cap installation beneath the building including a vapor barrier and a base layer of porous material (gravel) that contains a passive venting system.
    - The passive venting system is proposed to be installed in order to allow a pathway for vapors to be directed away from the interior spaces of the building.
    - Details for the passive venting system would be included in the remedial design.
- Cap installation in open or landscaped areas having a geotextile material placed over historic fill followed by a 1 ft layer of acceptable material as specified in the Site Management Plan (SMP).
    - The geotextile fabric placed at the base of the engineered cap and placed at the bottom of utility trenches would serve as a barrier against the upward migration of waste materials and as a marker barrier for any future intrusive work.
- Capping of the surface with asphalt/concrete parking areas and concrete building slabs, after the last phase of the selected remedy, as the completion of the engineered cap.
    - Cap installation in areas paved with asphalt pavement or concrete will have a properly engineered sub-base placed followed by a layer of asphalt or concrete to support vehicles.
    - Specifications for the sub-base material would be based on the final design.
- Annual certification of the remedy submitted to NYSDEC.
    - NYSDEC would be notified prior to any breach of the cap and that work would be documented during routine inspection and annual Periodic Review Reports.

Alternative 2

Alternative 2 entails excavation and disposal of material that includes historic industrial fill material as well as visually identified MGP waste, to the extent feasible within the metes and bounds of Site E OU-2, to a depth of approximately 5-8 feet below the existing ground surface (just below the approximate depth of the groundwater table). Based on the Site dimensions and the approximate depth estimate, this would equate to approximately 30,500 cubic yards of material. Groundwater encountered may require pumping, treatment and discharge or in-situ treatment to remove dissolved petroleum hydrocarbons present as a result of groundwater contact with MGP waste. Subsequently site utilities would be installed and the remaining areas backfilled with material acceptable under the Site Management Plan (SMP).

Following completion of construction, the Site would be considered closed and remediated and would not require further certifications, inspections or notifications of additional intrusive work. In addition to the general items listed above in this section, the following tasks would be completed to facilitate the removal of the waste to a point just below the water table (from the surface to 5-8 feet below ground surface):

- Visual identification of MGP wastes and historic fill for removal from above the water table.

- Characterization of all waste and staged excavated material at regular intervals to ensure proper handling, treatment and disposal.
- Placement of approved backfill in the excavation to replace the MGP impacted material and historic industrial fill removed.
    - Backfill material would meet the criteria established for a commercial/industrial facility.
    - Criteria would be established for this material to be placed beneath the paved surface so as to not require any further certifications or inspections.
- Installation of an impermeable barrier beneath the building slabs to prevent impacts from migration of contaminants from areas adjacent to the Site.

3.1 Applicable Standards, Criteria, and Guidance

Discussed below are the various standards, criteria, and guidance (SCGs) that are applicable to the remediation and redevelopment of the Site.

*3.1.1 **Chemical-Specific SCGs***

Chemical-specific SCGs that may apply to the remediation and construction activities at the Site include the Federal Characteristic Testing for hazardous waste as defined in 40 CFR Part 261 Subpart C-Characteristics of Hazardous Waste. This Federal regulation would apply to any material intended for off-Site disposal including: grubbing, MGP wastes, and excess fill materials. In addition to Federal testing requirements, supplemental analysis may be required under specific disposal facilities' state and local permits. Any material to be disposed of off-Site would require full analysis in accordance with Federal regulations and the facility's operating permits. Chemical-specific SCGs would also include 6 NYCRR Part 375 cleanup criteria for commercial or industrial end use.

While the 6 NYCRR Part 375 Commercial criteria are applicable to the Site, the importation of fill material from NYSDEC-designated recycling facilities should be accounted for. Current NYSDEC-registered recycling facilities can operate and provide recycled material including asphalt. Under the existing regulatory definitions, the recycled material has no limit as it relates to polycyclic aromatic hydrocarbons (PAH) concentration. Prior to the importation of backfill, the exclusion of material should be discussed to prevent confusion regarding the importation of proper fill and the application of NYSDEC cleanup criteria to material already defined under NYCRR as uncontaminated and unregulated as defined in NYCRR Part 360.

*3.1.2 **Location-Specific SGCs***

The location-specific SCGs for the remedial alternatives described and the final development may include: DSNY permits for fill importation, New York City Department of Buildings (NYCDOB) construction permits and New York City Department of Environmental Protection (NYCDEP) permits for stormwater handling, detention and discharge.

*3.1.3 **Action-Specific SCGs***

Action-specific SCGs may include health and safety requirements set forth in 29 CFR, requirements regarding United States Environmental Protection Agency (EPA) RCRA hazardous waste transport and disposal and Community Air Monitoring Plan (CAMP) action levels for VOCs and airborne particulates.

3.2 Evaluation of Remedial Alternatives Against Selection Criteria

The following subsections evaluate the remedial alternatives against the criteria presented in 6 NYCRR Part 375-3.8 as well as the sustainability of each option.

*3.2.1 **Protection of Human Health and the Environment***

In Alternative 1, the installation of an engineering cap approximately 1-foot thick, including; geotextile fabric, venting layer, impermeable barrier and sub-base, mitigates future contact and exposure to residual MGP waste and contamination. Alternative 1, in addition to mitigating any future contact exposure, also removes a significant volume of MGP waste leaving only limited areas of impacted material. Groundwater in the Hunts Point area is not used for domestic consumption.

Alternative 1 removes approximately 2,500 yds^3 of waste material from the surface to the groundwater table for off-Site disposal. The off-Site disposal does not reduce the net volume of waste in the environment; it does, however, consolidate it at a controlled, permitted facility with similar types of waste. The engineering cap placed above the remaining fill will dramatically reduce and in some areas will completely eliminate downward migration of surface water through fill material. Alternative 1 excavates significantly impacted MGP waste and removes it for off-Site disposal. Additionally, this remedy places only approved material into the excavation, greatly reducing the contact of MGP waste with the groundwater. Impacted groundwater that is exposed and required to be removed for construction will be pumped for treatment or off-Site disposal during excavation activities.

Alternative 2 would mitigate future impacts to the groundwater by removing the source material for off-Site disposal and pumping exposed groundwater for treatment or disposal during excavation activities. Similar to the disposal in Alternative 1, movement of the waste from the Site to another location does not reduce the net volume of waste in the environment; however, it does consolidate it at a controlled, permitted facility with similar types of waste. Groundwater beneath the Site could be re-contaminated due to the potential migration of MGP related plumes from off-site areas.

Both Alternatives 1 and 2 meet the RAOs specified in Section 2. While there will be contaminated material left at the site under Alternative 1, the engineering cap solutions as well as institutional controls act to mitigate contact, ingestion and inhalation of any remaining contamination. Alternative 2 removes all material impacted by MGP operations as well as historic fill to the water table. This will leave historic fill containing contamination below the water table and the same engineering controls employed in Alternative 1will act to mitigate impacts from any material remaining at the site.

*3.2.2 **Compliance with SCGs***

Compliance with SCGs described above in Section 3.2 will be achieved, as encountered, through the following tasks applicable under all alternatives:

- All contractors working on the project and taking an active role in the remediation will be 40-hour OSHA-trained under HAZWOPER.

- Each individual contractor or subcontractor working on the Site or in contact with the MGP materials will perform work under his/her own Health and Safety Plan, which will be prepared following review of all available Site-specific data.
- All material taken off-Site will be characterized, classified and properly transported under applicable federal and state regulations.
- All material removed from the Site will be disposed of at properly licensed and permitted facilities following a full review of facility permits and material classification data.
- All disposal facility owners and/or operators will submit written acceptance of any waste that will be transported for disposal at their facility. Proper paperwork documenting all such removal activities will be maintained and presented in the final Site closure report.
- All community air monitoring data will be available and retained in Site records.

Alternative 1 will result in the removal of a significant quantity of soils that exceed SCGs. Although some soils that exceed SCGs will remain on-site, an engineered cap approximately one (1) foot in total thickness will be installed that will limit the potential for contact with the contaminated material.

*3.2.3 **Short-Term Effectiveness and Impacts***

In both Alternatives, short-term impacts will be limited to workers in and around the Site as well as people who work or travel in the immediate vicinity of the project. The greatest exposure risk will be to the workers on-Site during the implementation of the remedy with some additional potential during the construction phase of Alternative 1. Health and Safety Plans, personal protective equipment (PPE) and air monitoring in the immediate area of excavations and the Site perimeter will be used to mitigate potential impacts.

Air monitoring will be maintained during remedial actions of Alternatives 1 and 2 and through construction of Alternative 1 to address short-term high level discharges of dust and vapors. Perimeter monitoring will be used to mitigate releases and impacts, during remedial implementation, on the areas immediately surrounding the Site. The impacts to adjacent parcels would primarily be to workers in the existing Con Edison Compressor Station located at the extreme southern end of the parcel. Both Alternatives 1 and 2 will displace large volumes of waste for treatment, disposal or encapsulation. Alternative 2 would result in the greatest exposure as all MGP waste and historic fill would be exposed and removed.

Geotechnical studies may need to be completed as part of the redevelopment facility design.

*3.2.4 **Long-Term Effectiveness and Permanence***

Alternative 1 incorporates an engineered cap placed on the site surface. The remedy for Alternative 2 will not require an engineering cap due to the removal of all site material to the water table. The cap under Alternative 1 will require annual certification and institutional controls. A deed restriction and Site Management Plan (SMP) detailing procedures for any future intrusive work at the Site would also be required.

Alternative 2 will not require annual inspections and certifications due to the full removal of material from the site, treatment of groundwater and backfill with acceptable material.

3.2.5 ***Reduction of Toxicity, Mobility, or Volume***

Alternatives 1 and 2 would result in a significant reduction in toxicity or volume of the waste present at the Site. The installation of the cap and completion of construction will prevent or dramatically reduce infiltration through the vadose (unsaturated) zone reducing the mobility of contaminants in the unsaturated soils. Excess material removed as a result of clearing, grading and construction activities may result in an additional reduction of volume at the Site.

Alternative 2 would result in a greater removal of material from the site than Alternative 1 based on the total volume. However, the disposition of total waste in the environment is dependent upon the disposal facility's treatment of that waste. If the waste is excavated and transported for landfilling, even at a properly permitted facility, there would be a reduction of volume at the Site but within the larger environment, there would be no net change in the volume of waste. If the material is treated during disposal, there may be a reduction in toxicity, mobility and/or volume. For example, thermal treatment can drastically lower the organic components of the waste, but may not reduce the inorganic components. The removal of soluble compounds can also lower the availability for chemicals to become mobile.

3.2.6 ***Implementability***

The relatively shallow nature of the MGP waste at the Site, and the Site's current unoccupied condition, allow for the implementation of either of the alternatives. In Alternative 2, an engineering evaluation will be required to evaluate the limitations to excavating waste and fill adjacent to the existing roadway and utilities that exist beneath it. Additionally, groundwater is shallow and can be easily removed during open excavations.

Evaluation would also be required to determine long term settlement that could result after backfilling of the substantial volume required in Alternative 2.

There is a potential for the need to design and install a groundwater pump and treatment system to handle exposed groundwater during remedial construction in Alternative 2. Discharge to the nearby treatment plant could be evaluated and chemical restrictions would have to be evaluated to ensure limits would be consistently met. Added complications of a large treatment system would include the power supply that would be necessary to maintain all of the systems, as well as heating and air conditioning the containers. The large scale and complete excavation required in Alternative 2 poses a significant logistical challenge. Due to the site location and configuration there are limited areas available for staging of material for disposal off-site. Additional space for imported fill materials to be used for backfill, contractor's trailers, equipment and the sheeting necessary to support the adjacent land and prevent collapse is also limited. Under Alternative 2 it may be necessary to perform the excavation and backfill in stages which would lengthen the project schedule and increase the level of overall effort necessary to complete the remedy.

3.3 Selected Remedial Action

Alternative 1 is the proposed Remedial Alternative for the Site. It is believed that Alternative 1, in combination with the redevelopment plan, associated engineering controls and deed restrictions, will achieve the Site RAOs. Alternative 1 will result in the removal of significant quantities of MGP waste and impacted materials (approximately 2500 cubic yards).

4 REMEDIAL ACTION AND CONSTRUCTION ACTIVITIES

4.1 Introduction

The design for Alternative 1 has been incorporated into the IRM (Attachment 3) and will be completed during the first phase of redevelopment. The installation of required underground facility components and utilities will begin following the completion of the remedial excavation in a given area. If additional areas can be secured for staging excavated material and backfill, the entire remedial excavation may be completed in a single phase. Coordination of the facility design and excavation will be required. For example, the collection and discharge of Site storm drainage is regulated by the New York City Department of Environmental Protection (NYCDEP) and may require excavation of site fill materials.

The following are general descriptions of specific activities that may occur in order to complete the Alternative 1 remedy and redevelopment.

4.2 Excavation

*4.2.1 **Remedial Excavation***

Remedial excavation for Alternative 1 will begin with the removal of surficial material (grubbing). Surficial materials will be segregated into material consisting of 100% organic plant material that was growing above grade and material that includes root (subsurface) material. The upper plant material can be removed as such while the material containing root and ground level organics will require testing prior to disposal for classification.

During removal of MGP waste that contacts and extends into the water table, precipitation or perched groundwater seeping into excavations will be allowed to drain in the excavation or at the surface in an area where the water can be controlled and collected (i.e. via SWPPP measures or via gravity). Waste removal will be in accordance with the areas identified in Figure 6 and the IRM and additionally limited by the metes and bounds of Site E-OU2 and restrictions on excavations adjacent to the existing roadway and fence lines. It is anticipated that some form of slope stabilization will be used to prevent collapse of unstable areas adjacent to the roadway and fence lines. The specific stabilization methods will be determined during remedial design or by the contractor. Following removal and treatment of groundwater, if necessary, liquid waste may be trucked off-Site and disposed of, reintroduced into an area adjacent to the excavation, or discharged into the sanitary sewer. Treatment may be required if waste is reintroduced into an excavation or discharged into the sewer, as per NYC permit.

Fill material removed from the excavation will be tested for waste characterization in increments of every 100 to 500 yds^3, depending on permitted disposal facility requirements. In-situ testing may allow direct loading for off-Site disposal of hazardous or excess material without stockpiling or reducing work space. Such pre-excavation testing will also allow for better volume estimations of the amount of material to be disposed of off-Site and the volume of backfill needed. Post excavation documentation sampling will be conducted to characterize the condition of remaining material. The above activities will assist in defining the final engineering and institutional controls that may be required for the Site.

An engineered cap will be placed on top of the waste material and is discussed in detail in Section 4.3.

*4.2.2 **Remedial Excavation Confirmatory Sampling***

If shoring or stabilization is performed along the perimeter of the Site, sampling will be conducted at the bottom of the excavation where material has been removed. Once waste has been removed from a specific area, a sample of the remaining fill material will be collected to document the conditions. The number of samples will be reflective of the dimensions of the excavation. Samples for waste classification will be obtained from stockpiles or collected in a grid pattern if in-situ sampling occurs.

4.3 Surface Capping

The details of the engineered cap for the Site will vary depending on the final redevelopment layout. Open, landscaped areas as well as utility trenches and below grade structures that can be expected to require maintenance, inspection and/or replacement will have a geotextile fabric placed at the historic fill interface. Backfill will be placed above this fabric. The geotextile fabric placed at the base of the engineered cap (in open areas) will serve as a barrier against the upward migration of any remaining or replaced waste materials and as a demarcation barrier for any future intrusive work.

Buildings or structures will have at least 6 inches of clean material containing a passive venting system beneath the slab. The passive venting layer will be covered by an impermeable barrier and base slabs will be poured directly onto the barrier. If final building designs require modifications that reflect a change in this approach, the change will be presented to NYSDEC for approval prior to implementation.

Details for the passive venting system will be included in the remedial design. The passive venting system will allow vapors, which may accumulate due to the change in pore pressure created by changes in water table elevation, to be vented away from the buildings. The thickness of the barrier will be, at a minimum, 20 millimeters or meet the puncture resistance of a standard 20 mil liner.

Parking areas or areas where active vehicle traffic will occur will have an engineered sub-base placed on the surface of the historic fill. An engineered pavement that meets the facility requirements will be installed on top of the sub-base. The total thickness will be a minimum of 0.75 feet.

Specifications for capping materials will be included in the remedial design.

4.4 Site Management

A SMP will be instituted for the post-construction handling and management of the Site as well as the remedial and construction phases. The plan will govern basic importation of fill material from off-Site sources as well as the reuse of materials on-Site. Following construction of the surface cap and engineering controls, the SMP will be used to inspect and manage the cap in the event that any repair or intrusive work is performed. The SMP will cover all procedures for handling excess material, importation of replacement fill and other aspects related to disturbance of the cap.

*4.4.1 **Site/Soil Management Plan***

Site soils will be managed in accordance with the SMP referenced above.

*4.4.2 **Site Access and Control***

Site access will need to be coordinated with the Site tenant and their engineering and construction team. Prior to RAWP implementation, the Site will be fenced, preventing access for the duration of the remediation and construction project. The surrounding Con Edison Compressor Station is currently operating on a full-time basis and access is controlled at the main entrance. This Site access control is anticipated to remain in-place into the future. Following completion of the remedy and redevelopment, the Site will be under the control of the tenant. Con Edison will maintain control of the easement area immediately adjacent to the southern Site boundary.

Personnel working on the remedial and redevelopment aspects of the project will enter the Site through protective zones as established by OSHA 29 CFR 1910 until actual entry into the exclusion zone. Health and safety procedures will be strictly enforced and all personnel will be required to adhere to the wearing of appropriate and specified PPE. All requirements of the approved health and safety plans will be enforced.

*4.4.3 **Erosion Control***

A SWPPP will be prepared and submitted to NYSDEC prior to commencing work at the Site. A SWPPP is required for construction sites greater than 1 acre. The overall effort will require the prevention of stormwater runoff into the excavation or off of stockpiled materials. Stormwater will be routed in a direction where it can be detained or controlled. Typical controls include silt fences, grading, hay bales and trackoff pads to prevent erosion and flooding into the excavations, onto other properties or into surface waters.

*4.4.4 **Dust/Odor Control***

The Site is located adjacent to a food distribution center and, therefore, it is imperative that dust and odors be kept to a minimum. All stockpiled materials will be covered when not being worked and, when conditions dictate, the piles will be moistened with water as a dust suppression measure. Any amendments to materials will be attempted to done under conditions that prevent the creation of dust. A CAMP will be maintained at the Site and is detailed in Section 4.5.

*4.4.5 **Dewatering***

Dewatering may be one of the components of the project, and will be addressed during final design. There are no volume or rate estimates available at this time for dewatering at the Site. If NYCDEP sanitary discharge is desired, all permits will be in-place prior to dewatering. It is not anticipated that water will be treated and discharged to storm sewers and ultimately the East River. Following the design and coordination with the tenant, a location for staging of dewatering systems and equipment will be provided.

*4.4.6 **Decontamination***

All material, equipment and workers will be required to use proper decontamination methods prior to leaving the exclusion area. Workers will remove all contaminated PPE and equipment will be decontaminated at a properly constructed decontamination pad. The location and configuration of the

decontamination stations will be coordinated with the tenant and cannot be specifically shown at this time. Decontamination of vehicles will consist of pressure washing of wheels, tires, buckets and other parts that have been in contact with waste materials.

Water used in decontamination will be collected and pumped into a holding vessel where it will be treated and properly discharged or trucked off-Site for disposal.

4.5 Community Air Monitoring Plan (CAMP)

NYSDOH requires, as part of the remediation effort where intrusive activities are performed or where particulates can become airborne, real-time air particulate and VOC monitoring. Monitoring stations will be set up on perimeter fencing and meters will be used at the excavation site for personnel health and safety. Wind direction and measurement data will be collected from a weather station that will be in a fixed position.

VOC monitoring will be conducted using a photoionization detector (PID) capable of logging samples over the entire work day and allowing download of the data. During excavation activities, downwind monitoring will be performed continuously to monitor air quality. The readings will be used to trigger response actions that may be necessary in order to mitigate vapors.

Community monitoring for particulates will also be conducted using real time equipment capable of measuring the concentration of airborne respirable particles less than 0.1 micron in size. The monitor will also be capable of calculating 15-minute running average concentrations and will be equipped with an audible alarm. Monitoring will begin each day when excavation will occur and will change location based upon prevailing wind direction. Downwind monitoring will be performed using a continuously logging recorder to collect measurements at a minimum of every hour during the operation.

The response factors will be made in accordance with materials to be used and will be provided following final remedial design. Following the final remedial construction, the Final Engineering Report will contain all records of measurements, actions, mitigation and responses during the project. Copies of field logs, data sheets, recordings and calibration information will also be included in an appendix to that report.

4.6 Quality Assurance Project Plan

Following the completion of the final design, a Quality Assurance Project Plan will be prepared and submitted for review and approval by NYSDEC.

4.7 Health and Safety Plan

All contractors and subcontractors responsible for on-Site intrusive activities or for handling waste material will be responsible for completing and implementing their own individual Site-specific Health and Safety Project Plan that represents their specific work. Copies of all plans will be maintained on-Site and will be submitted to NYSDEC and NYSDOH for their records prior to the start of that particular contractor's duty.

4.8 Citizen Participation Plan

Under the NYSDEC VCP there are specific public notice requirements that will be followed for this project. They include:

- Following the approval of the final RAWP, AAR and NYSDEC Decision Document by NYSDEC and NYSDOH, a notice of its availability for review and public comment will be distributed or mailed to local elected officials, nearby residents, businesses, and the local community board.
- This notice will begin the mandatory 30-day comment period during which written comments may be submitted to NYSDEC. The notice itself is required to be filed by NYSDEC.
- Notice that the RAWP/AAR and Decision Document is available for review will be provided by NYSDEC to each municipality within which a site is located. The Site is located in the Hunts Point Neighborhood of the Bronx.
- A fact sheet will be prepared summarizing the proposed Site activities and anticipated schedule and will provide key project contact information. The fact sheet will be distributed or mailed to local elected officials, nearby residents, businesses, and the local community board.

4.9 Remedial Action Report

Following completion of both the remedial action and the final construction activities, a Final Engineering Report (FER) will be prepared to document the activities described in the RAWP. If approved modifications occur, they will also be documented in the FER. The Final Engineering Report will include the following information:

- A summary of the remedial action and construction activities;
- A description of modifications and the approvals of modifications as they relate to the remedy - if there are specific changes to the construction that do not impact the remedy but were also mentioned in the RAWP, they will also be clarified;
- A listing and description of the quantities of material removed from the Site for disposal, along with manifests and facility information to document the removal;
- A summary of the CAMP information, data and logs from the project;
- A summary of all material sampling, classification and in-situ or end-point sampling performed during the remediation and construction efforts; and
- Appendices containing copies of pertinent logs, photographs documenting the work, and analytical data.

4.10 Maintenance of Engineering and Institutional Controls

The Engineering controls for the chosen alternative will include an engineered cap, as described above, which will include: a geotextile fabric, a passive vapor layer, an impermeable barrier, asphalt cap and sub-base material. The surface cap will be required to be inspected annually in order to maintain certification that the Site has been satisfactorily closed under the VCP. A Periodic Review Report (PRR) will be submitted on an annual basis to document the condition of the surface cap, indicate any work that has been performed since the previous PRR and that all procedures specified in the SMP were followed. The PRR will serve to document that the SMP has been complied with.

The annual inspections will include a visual inspection of the Site to identify any cuts or repairs visible in the cap or parking lot laid above it. The inspection will also look to identify any areas where repair may be needed to maintain the cap's integrity. Depending on the amount of waste remaining or encapsulated at the Site, post closure testing that may be necessary at the venting exhaust ports. In addition, if there are any monitoring wells remaining following excavation work, water level monitoring as well as sampling and analytical testing may be conducted.

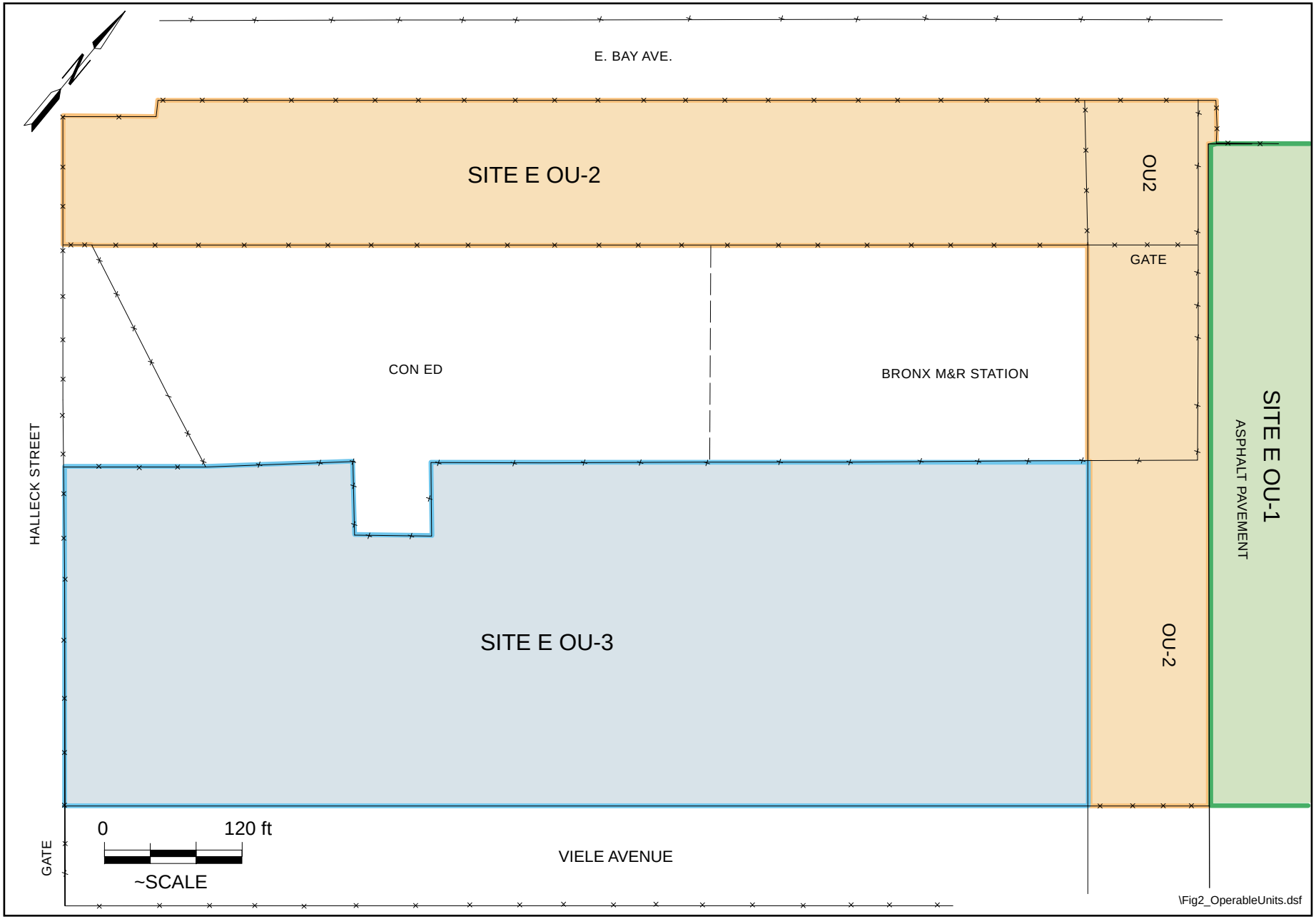
Institutional controls including a deed restriction will be filed with the City Clerk in order to attach the future recertification effort and remedial cap information to the property. Since this property is owned by the City of New York and not intended to be sold in the foreseeable future it is not anticipated that the deed restriction will require transfer; however, if the property is leased to any new tenant, all information and requirements will be transferred in the lease agreement.

4.11 Schedule

The schedule is dependent upon the preparation of non-VCP documents related to City Land Use approvals and following those efforts, design will be advanced. The remedy portion of the project is anticipated to take place in 2012.

FIGURES

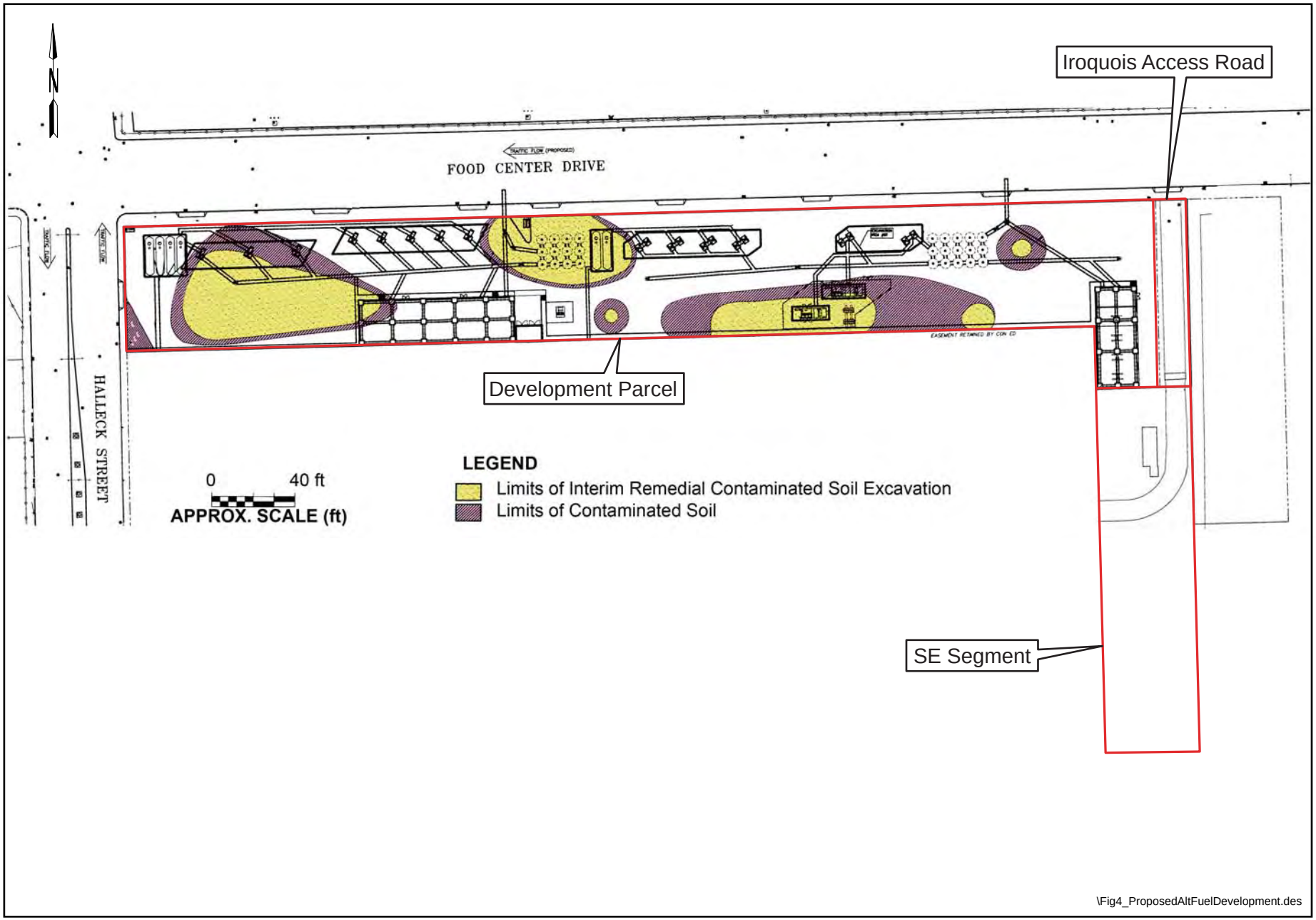
HDR Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Site Location Map** **Hunts Point • Site E OU-2**	**Figure 1**



Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Site E Operable Units** **Hunts Point • Site E OU-2**	**Figure 2**

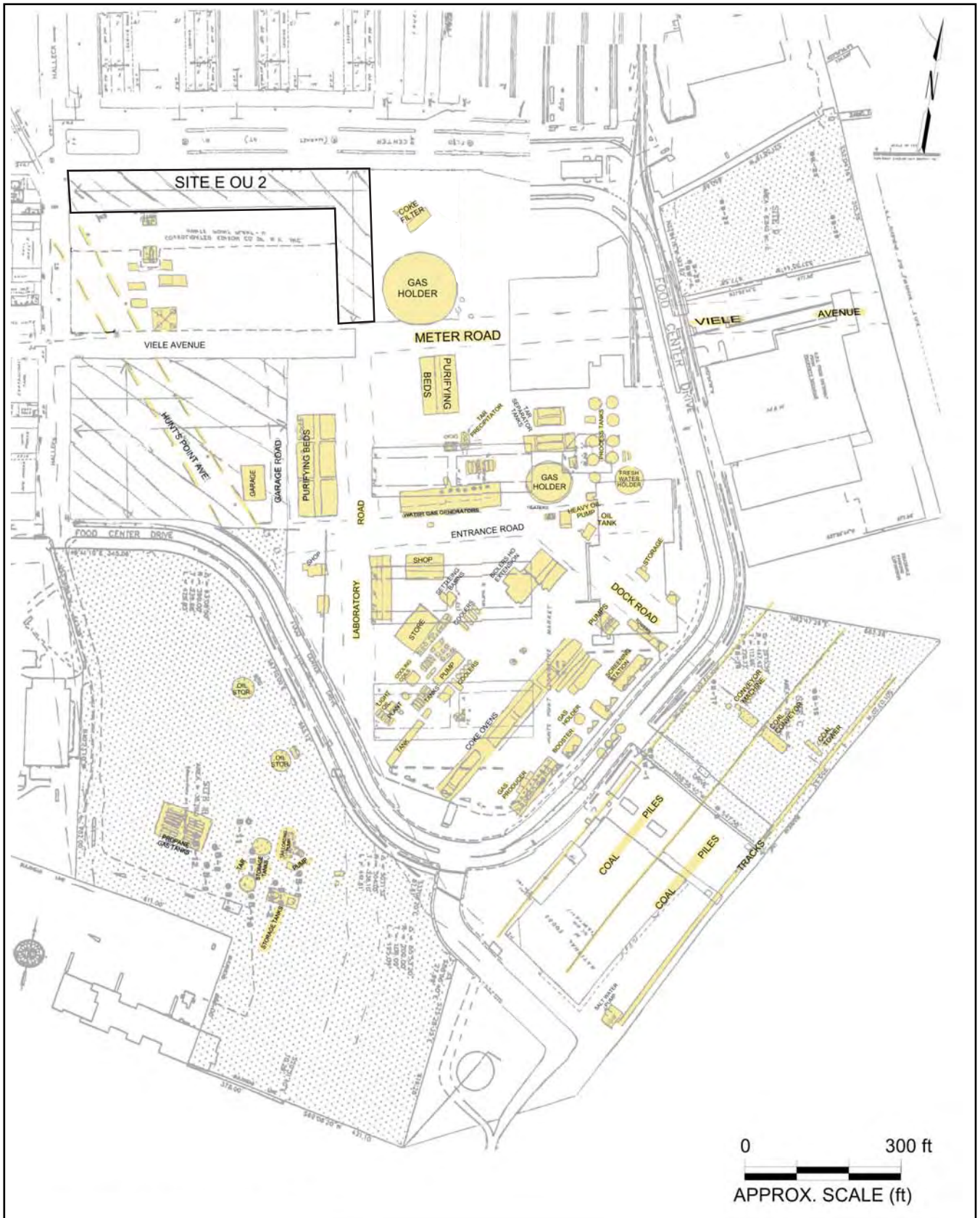
\Fig3_HZP2004AerialPhoto.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Hunts Point - 2004 Aerial Photograph** **Hunts Point • Site E OU-2**	**Figure 3**



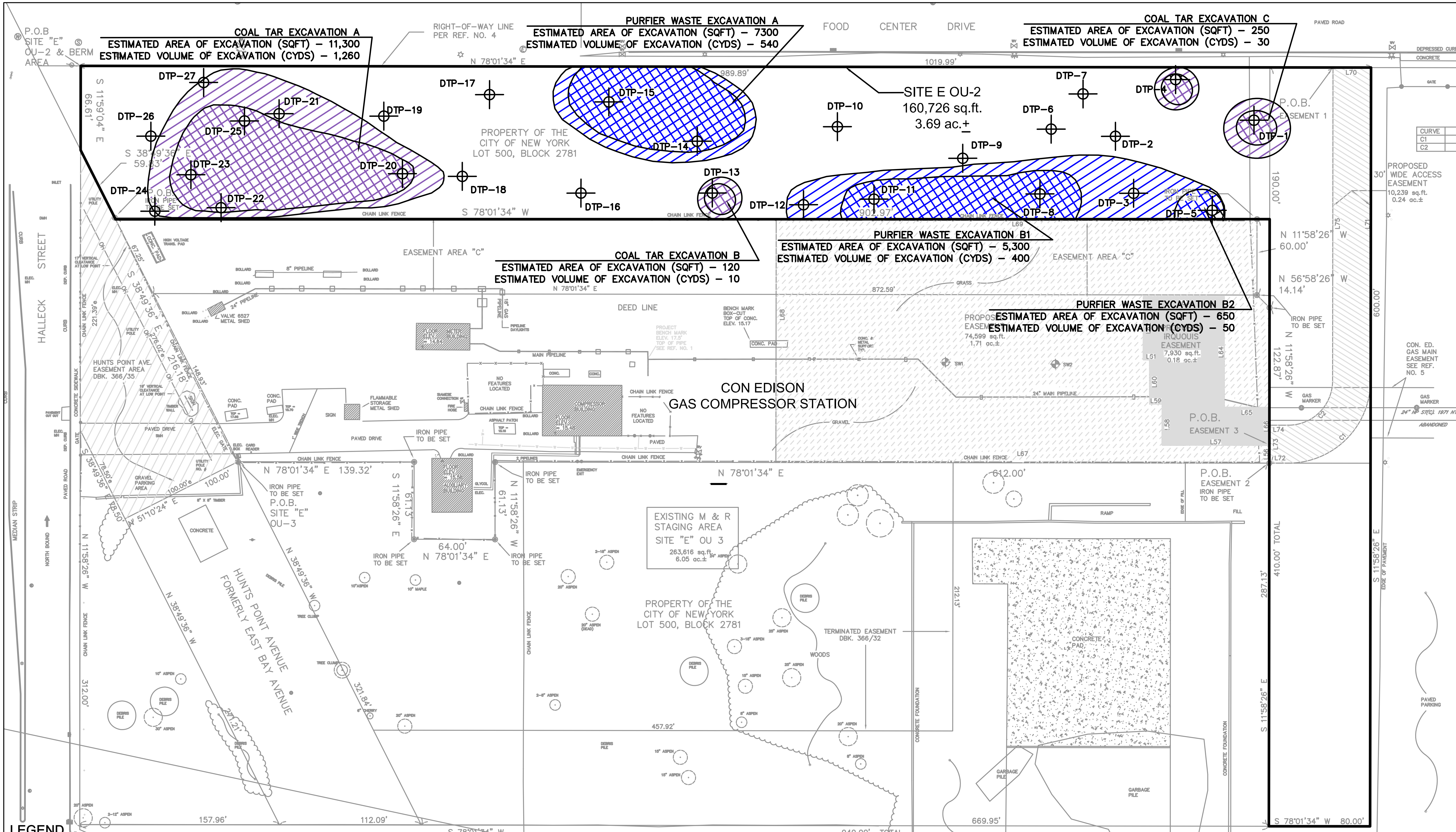
\Fig4_ProposedAltFuelDevelopment.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Proposed Alternative Fuel Development** **Hunts Point • Site E OU-2**	**Figure 4**



\Fig5_FormerMEPstructures.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Former MEP Structures** **Hunts Point • Site E OU-2**	**Figure 5**



LEGEND

- PURIFIER WASTE LENS
- COAL TAR LENS
- TEST PIT LOCATION
- ESTIMATED PURIFIER WASTE EXCAVATION
- ESTIMATED COAL TAR EXCAVATION

Note: All area and volume quantities are approximate

Base Survey Source: The Reynolds Group Inc., Site "E" OU-2 & OU-3 & Berm Area, Boundary Survey of Con Ed Property Lot 500 Block 2781, 11/15/2002

HDR

Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc.

WASTE REMOVAL AREAS

SITE E OU-2

HUNTS POINT, NEW YORK

DATE 02/24/2011

FIGURE 6

ATTACHMENT 1

The Reynolds Group Inc.

State Certificate of Authorization
No. GA-276945

Engineers
Landscape Architects
Land Surveyors
Planners
Environmental Specialists

Legal Description
Of a Portion
Of
Lot 500 Block 2781 & Farragut Street
Site "E" OU –2 & Berm Area
Borough of the Bronx
County of the Bronx
State of New York
TRG No. 03-024

Beginning at a point, said point being the intersection of the southerly sideline of Food Center Drive and the easterly sideline of Halleck Street (100' wide); thence

1. Along the southerly sideline of Food Center Drive North 78° 01' 34" East a distance of 1,019.89' to a point on the easterly sideline of Farragut Street; thence

2. Leaving Food Center Drive and running southerly along the easterly sideline of Farragut Street South 11° 58' 32" East a distance of 600.00' to a point on the northerly sideline of Viele Avenue; thence

3. Along said sideline of Viele Avenue South 78° 01' 34" West a distance of 80.00' to the westerly sideline of Farragut Street; thence

4. Running northerly along said sideline North 11° 58' 26" West a distance of 410.00' to a point; thence

5. Leaving said sideline and running along lands now or formerly of Con Edison North 56° 58' 26" West a distance of 14.14' to a point; thence

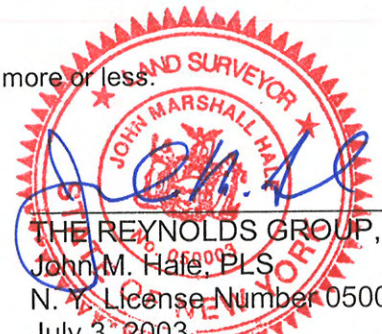
6. Still with said lands and easement area "C" North 11° 58' 26" West a distance of 60.00'; thence

7. Still with said lands and easement South 78° 01' 34" West a distance of 902.97' to the easterly sideline of Hunts Point Avenue; thence

8. Along said sideline North 38° 49' 36" West a distance of 59.83' to the easterly sideline of Halleck Street; thence

9. Along said sideline North 11° 59' 04" West a distance of 66.61' to the point and place of beginning.

Containing 160,695 square feet or 3.69 acres of land, more or less.



THE REYNOLDS GROUP, INC.
John M. Hale, PLS
N. Y. License Number 050003
July 3, 2003
Revised August 11, 2003

Block 2781, Lot 500 & Farragut St.leg

ATTACHMENT 2

New York State Department of Environmental Conservation
Division of Environmental Enforcement
625 Broadway, Albany, New York 12233-5500
Phone: (518) 402-9507 • FAX: (518) 402-9019
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

Assignable Release and Covenant Not to Sue

August 25, 2003

Kay Zias
New York City Economic Development Corp.
110 William Street
New York, New York 10038

Mark McIntyre, Esq.
New York City Law Department
100 Church Street, Room 3-125
New York, New York 10007

Re: Voluntary Cleanup Agreement
Hunts Point Food Distribution Center
Site E, Operable Unit 1
Site Number V00414-2
Index No. D3-0004-99-04

Dear Ms. Zias and Mr. McIntyre:

Unless otherwise specified, all terms used in this letter shall have the meaning assigned to them under the terms of the Voluntary Agreement entered into between the New York State Department of Environmental Conservation ("Department") and the City of New York ("Volunteer") regarding the Hunts Point Food Distribution Center, Site E, Operable Unit 1.

The Department is pleased to report that it is satisfied that the Agreement's Work Plan, covering the remediation of the Existing Contamination as defined by the Agreement at Operable Unit 1 of Parcel E of the Site located in the northern portion of the Hunts Point Food Distribution Center in the Bronx has been successfully implemented, and, except as otherwise provided below, no further remedial action by Volunteer is required.

The Department and the Trustee of New York's natural resources ("Trustee"), therefore, hereby release, covenant not to sue, and shall forbear from bringing any action, proceeding, or suit against Volunteer and Volunteer's lessees, sublessees, successors, and assigns, and their respective secured creditors, for the further investigation and remediation of the Site based upon the release of Covered Contamination, provided that (a) timely payments of the amounts specified in Paragraph

VI of the Agreement continue to be or have been made to the Department, (b) appropriate notices and deed restrictions, if any, have been recorded in accordance with Paragraphs IX and X of the Agreement, and (c) Volunteer and/or Volunteer's lessees, sublessees, successors, or assigns promptly commence and diligently pursue to completion the Department-approved O&M Plan, if any. Nonetheless, the Department and the Trustee hereby reserve all of their respective rights concerning, and such release, covenant not to sue, and forbearance shall not extend to any further investigation or remedial action the Department deems necessary:

- due to off-Site migration of petroleum;
- due to environmental conditions or information related to the Site which were unknown at the time this Release and Covenant Not to Sue was issued and which indicate that the contemplated use cannot be implemented with sufficient protection of human health and the environment;
- due to Volunteer's failure to implement the Agreement to the Department's satisfaction; or
- due to fraud committed by Volunteer in entering into or implementing this Agreement.

Additionally, the Department and the Trustee hereby reserve all of their rights concerning, and any such release, covenant not to sue, and forbearance shall not extend to Volunteer nor to any of Volunteer's lessees, sublessees, successors, or assigns who cause of allow a release or threat of release at the Site of any hazardous substance (as that term is defined at 42 USC 9601[14]) or petroleum (as that term is defined at Navigation Law 172[15]), other than Covered Contamination; or cause or allow the use of the Site to change from the Contemplated Use to one requiring a lower level of residual contamination before that use can be implemented with sufficient protection of human health and the environment; nor to any of Volunteer's lessees, sublessees, successors, or assigns who are otherwise responsible under law for the remediation of the Existing Contamination independent of any obligation that party may have respecting same resulting solely from the Agreement's execution.

Notwithstanding the above, however, with respect to any claim or cause of action asserted by the Department or the Trustee, the one seeking the benefit of this release, covenant not to sue, and forbearance shall bear the burden of proving that the claim or cause of action, or any part thereof, is attributable solely to Covered Contamination.

Notwithstanding any other provision in this release, covenant not to sue, and forbearance:

- if with respect to the Site there exists or may exist a claim of any kind or nature on the part of the New York State Environmental Protection and Spill Compensation Fund against any party, nothing in this release shall be construed, or deemed, to preclude the State of New York from recovering such claim.
- except as provided in Subparagraph I.H of the Agreement and in this letter, nothing contained in the Agreement or in this letter shall be construed as barring, diminishing,

adjudicating, or in any way affecting any of the Department's or Trustee's rights (including, but not limited to, the right to recover natural resources damages) with respect to any party, including Volunteer;

- nothing contained in this letter shall prejudice any rights of the Department or Trustee to take any investigatory or remedial action it may deem necessary if Volunteer fails to comply with the Agreement or if contamination other than Existing Contamination or Covered Contamination is encountered at the Site;

- nothing contained in this letter shall be construed to prohibit the Commissioner or her duly authorized representative from exercising any summary abatement powers; and

- nothing contained in this letter shall be construed to affect the Department's right to terminate the Agreement upon notice to Volunteer any time during its implementation if Volunteer fails to comply substantially with the Agreement's terms and conditions.

In conclusion, the Department is pleased to be part of this effort to return the Site to productive use of benefit to the entire community.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND TRUSTEE OF NEW YORK STATE'S NATURAL RESOURCES

By: *Anthony B. Quartararo*

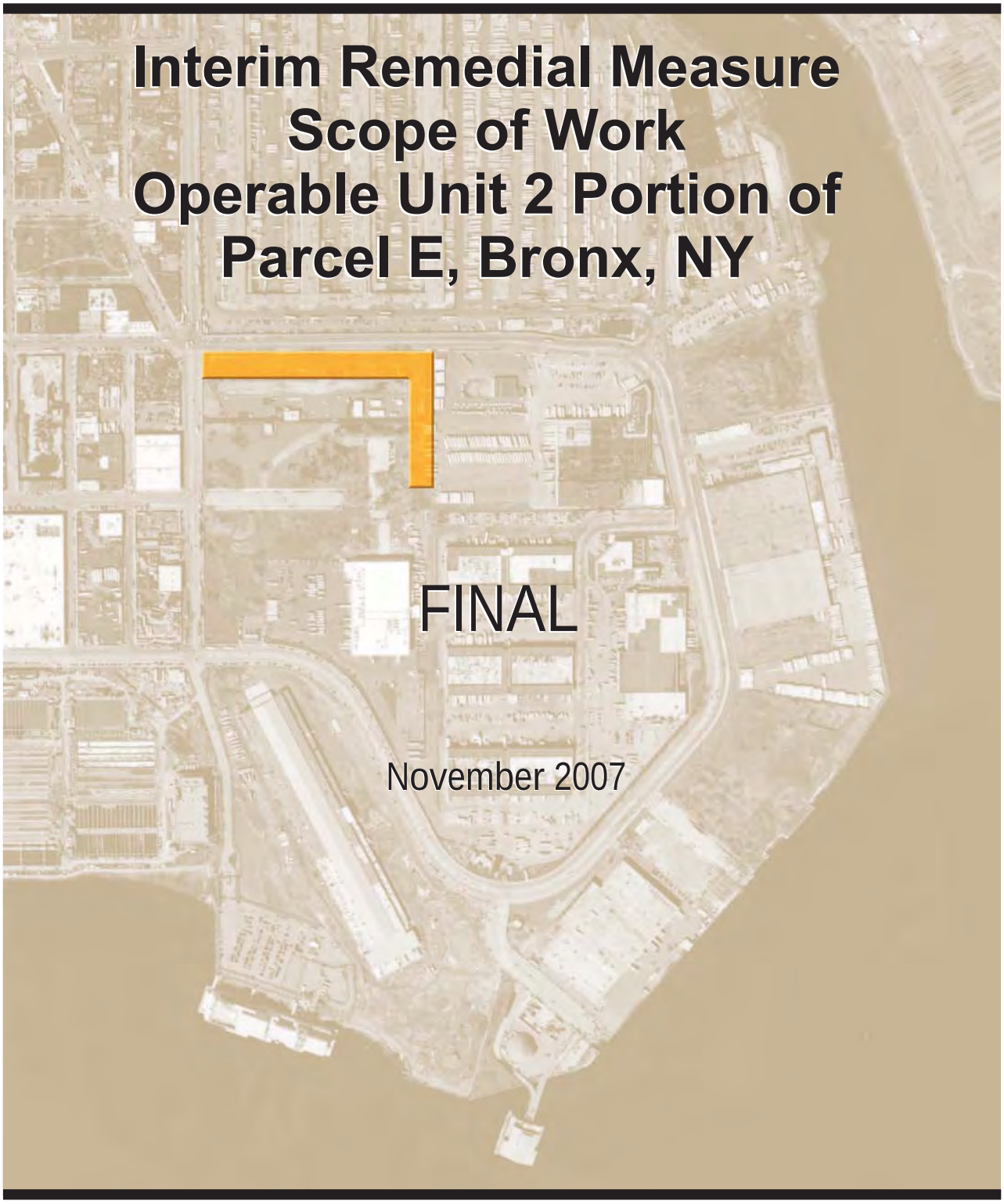
Anthony B. Quartararo
Bureau Chief, State Superfund and Voluntary Cleanup Bureau

cc: D. Weigel
R. Cozzy
R. Lee
E. Armater
G. Litwin
edms 68120

ATTACHMENT 3

Hunts Point Food Distribution Center

Redevelopment Plan



Interim Remedial Measure Scope of Work Operable Unit 2 Portion of Parcel E, Bronx, NY

FINAL

November 2007

HDR | LMS
Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

One Blue Hill Plaza 12th Floor
P.O. Box 1509
Pearl River, NY 10965-8509

Phone (845) 735-8300
Fax (845) 735-7466
www.hdrinc.com

Hunts Point Food Distribution Center Redevelopment Plan

Interim Remedial Measure Scope of Work for the Operable Unit 2 Portion of Parcel E, Bronx, NY

- Final -

Prepared for:

New York City Economic Development Corporation

110 William Street, New York, New York 10038

Prepared by:

HDR | LMS

One Blue Hill Plaza- 12th Floor, Pearl River New York 10965

November 2007

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APPENDICES

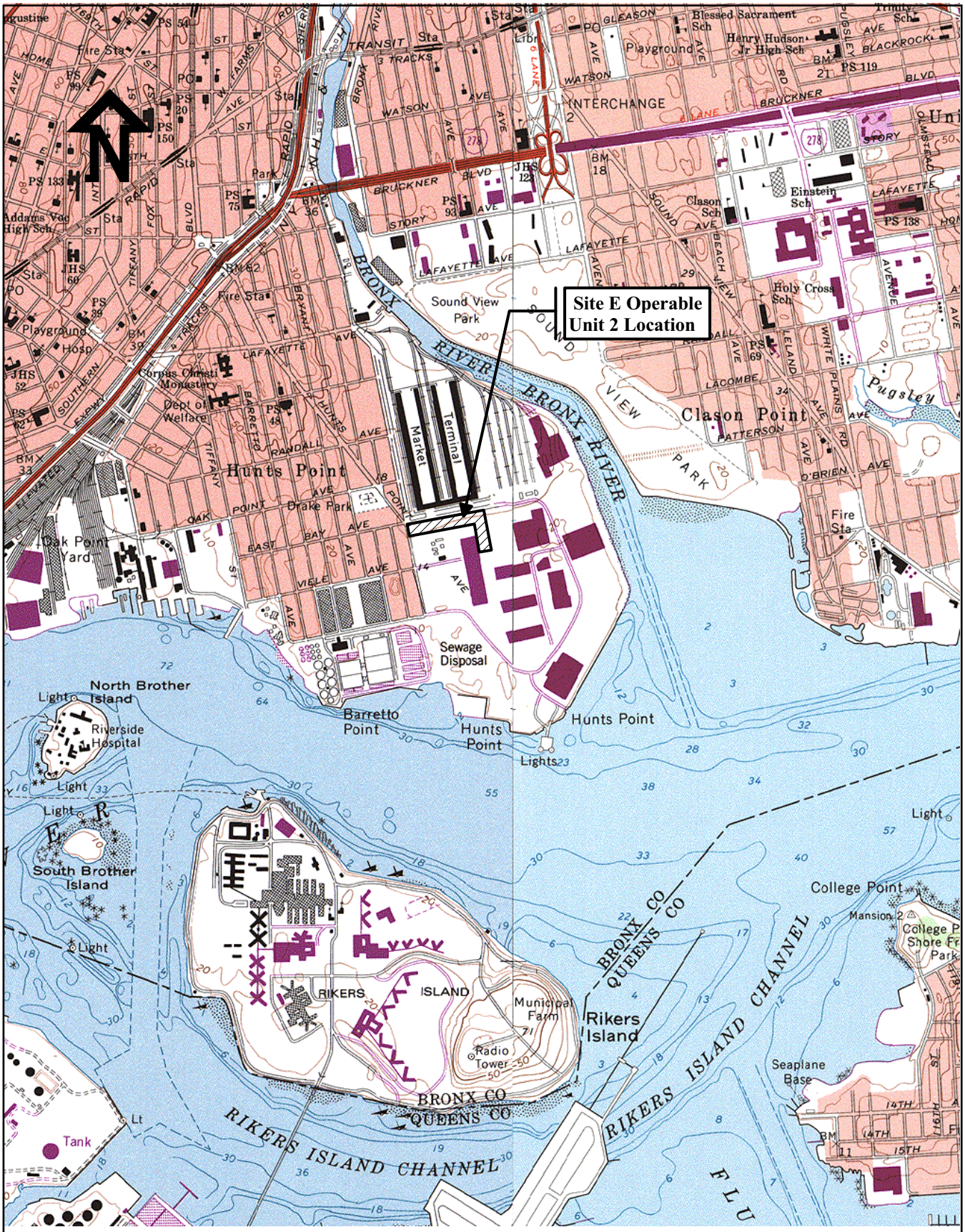
INTRODUCTION

This scope of work outlines the site activites for the Interim Remedial Measure (IRM), which involves the removal of waste material defined as residual coal tar and purifier waste to take place on Operable Unit 2 of Parcel E (Site E OU-2). Site E OU-2 is located in the northwestern portion of the Hunts Point Food Distribution Center (Figure 1). A subsurface investigation and coal tar delineation/characterization have been performed on the Site under a New York State Department of Conservation (NYSDEC) and New York State Department of Health (NYSDOH) approved investigation work plan, under the New York State Voluntary Cleanup Program (VCP). Based on the results, several areas of concern have been identified on the Site. These include coal tar waste, purifier waste and various fill materials believed to be associated with the historic use of the Site as a Manufactured Gas Plant (MGP). The purpose of this IRM will be to provide sufficient removal to remediate the portion of the the MGP waste found in Site E OU-2 prior to the final development as a parking area with an engineered cap.

Site E is rectangular in shape and is bordered by East Bay Avenue to the north, Halleck Street to the West and the former Viele Avenue and Meat Market to the south. The eastern border is located between the former A&P facility and the new truck maintenance facility located on Site E OU-1 (refer to Figures 2 and 3). The total area of the Site, including all three Site E operable units, is approximately 11.6 acres with the Site E OU-2 area approximately 3.69 acres in size.

Site E contains three individual operable units which are each VCP sites. The sites are each shown in Figure 3. Site E OU-1 (not shown in full on Figure 3) was previously investigated, a removal was completed and the site was redeveloped as part of the A&P maintenance truck garage and trailer storage yard. Sites E OU-2 and E OU-3 are both currently in the preliminary redevelopment design phase. While this document covers the actual removal of waste for Site E OU-2, it is the first activity planned for that operable unit. The second activity that will be included will be the land use layout for the parking lot that will occupy Site E OU-2. The proposed use for this space will be for an open-air parking lot that will be used as an employee parking for a food warehouse and distribution center proposed to be constructed on Site E OU-3. The parking lot layout will include descriptions for removal and movement of material necessary to create the grades and elevations for the site.

Site E OU-2 is an inverted and reversed L-shaped parcel formed by two rectangular areas (one oriented east-west and the second oriented north-south). Both converge at the northwest corner of Site E OU-1 along the southern boundary of East Bay Avenue. The northern portion of Site E OU-2 is bounded on the north by East Bay Avenue, on the south by the Consolidated Edison Facility (Con Ed) Bronx Metering and Regulating Facility (M&R Station), on the west by Halleck Street and on the east by Site E OU-1. The southern portion of Site E OU-2 has also been referred to as the “berm area” and historically contained excavated soils generated during the redevelopment and construction of the A&P paved parking area and truck maintenance facility (Site E OU-1). This “berm” material was



0 2000 ft

~SCALE: 1" = 2000'

Map source: USGS 7.5 minute quadrangle series, Central Park, NY-NJ, 1966, photorevised 1988.

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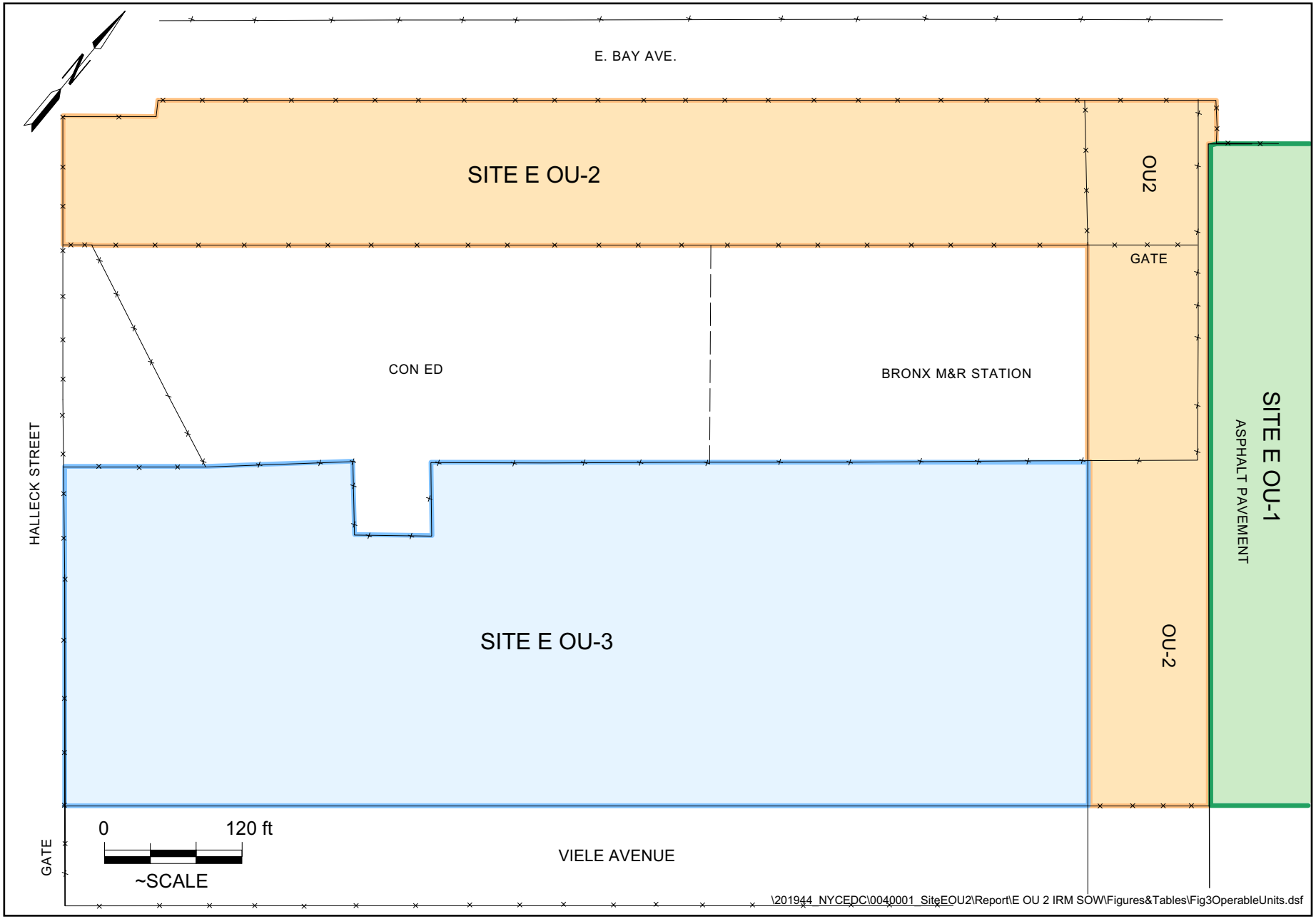
Site Location

Hunts Point • Site E OU-2

Figure 1

\201944_NYCEDC\0040001_SiteEOU2\Report\E OU 2 IRM SOW\Figures&Tables\Fig2AerialOfAllSites.des

HDR | LMS Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. One Blue Hill Plaza Pearl River, NY 10965	**Hunts Point - 2004 Aerial Photograph** **Hunts Point • Site E OU-2**	**Figure 2**



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Site E Operable Units

Hunts Point • Site E OU-2

Figure 3

removed and relocated to Site A OU-2, another Hunts Point Voluntary Cleanup Program (VCP) site, following approval from NYSDEC (refer to Figure 2).

As part of the initial Site E OU-2 subsurface investigation, historic Sanborn and topographic maps were reviewed as well as historic aerial photograhs, and Consolidated Edison Company of New York (Con Ed) site maps. Overall, this parcel was part of a Con Ed coal gassification Plant that was constructed between 1924 and 1932 and operated until the early 1960s. A total of approximately 46 buildings or structures existed on the site that were actively involved in gas production. The plant was constructed to manufacture both oven gas and carburetted water gas as major products and coke, ammonium sulphate, coal tar, water gas tar, and light oil as by products.

Site E OU-1 is located in the northern end of the former facility where several structures were located including the main 15,000,000 cubic foot waterless gas holder, reportedly 254 ft in diameter and 365 ft high. Several additional structures associated with the gas holder were located on the site, including a number of pump tanks, coke filters, a waste oil tank, a centrifuge, a tar separator, and substation structures. The foundation of the former gas holder and some associated tank like structures were confirmed during the initial field investigation on Site E OU-1. The area of focus in this Interim Remedial Measure Scope of Work is the northern portion of Site E OU-2.

SITE INVESTIGATION AND WASTE DELINEATION

HDR|LMS utilized the site specific health and safety plan prepared as part of the initial site investigation and re-confirmed the presence of utilities on the site with respect to the sampling locations.

During the initial site investigation in 2005, several intrusive locations (borings, test pits and/or soil gas installation points) were observed to contain coal tar. Another small area was found to contain a thin seam of what appeared to be purifier waste material. Based upon these initial observations, a delineation of the coal tar was planned and conducted in April 2006 around these areas to identity the limits of waste and allow preparation of this removal scope. All soil analytical results were compared to the cleanup criteria laid out by the NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2), as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006.

Several delineation locations were found to contain coal tar mixed with fill material and some sporadic purifier waste. Fill material was also encountered across the site and in some areas, it was found to have been impacted with varying levels of petroleum. Much of this material consisted of coal, coal ash and granular fill. There were no areas where the fill was found to be saturated with recoverable product but rather water with a noticeable petroleum type odor typical of coal tar. Only one sample exhibited a single-magnitude exceedence of one volatile organic compound (VOCs). The analyte detected above Track 2 thresholds was Benzene in sample location DTP-4. Analyses of samples from these areas showed

that Track 2 semi-volatile organic compound (SVOC) concentrations were exceeded. The odors are believed to be low odor threshold SVOCs in pore space of the granular material. Delineation areas and soil sample locations are further illustrated in Figure 4. The areas containing coal tar were delineated for the proposed removal. This material was also found to be within a similar matrix of coal ash fill.

The shallow groundwater table was observed to be variable as it was encountered at different depths across the site. Due to the variable surface elevation of the underlying clay layer and the ability for shallow drainage to take place through the fill material, the upper groundwater is difficult to measure for consistent groundwater flow direction. Some test pits contained groundwater at much shallower depths than others, even where the surface elevation was found to be similar. It is for this reason that the shallow water table is considered to be perched and not consistently connected to lower saturated materials.

Within the areas where coal tar mixed with fill was encountered, the overall thickness was readily discernable as it was seen in other Hunts Point Voluntary Cleanup Program (VCP) sites. As in other VCP sites, such as Site A OU-2, Site B and Site D, the limits of the coal tar material were fairly easy to visually identify. The general range of thickness for the fill intermingled with coal tar was between 0.5 and 1.5 feet with some isolated locations up to 2.7 feet. Purifier type waste was encountered in a much more limited area and it was seen in thickness of 0.5 to 1.0 feet.

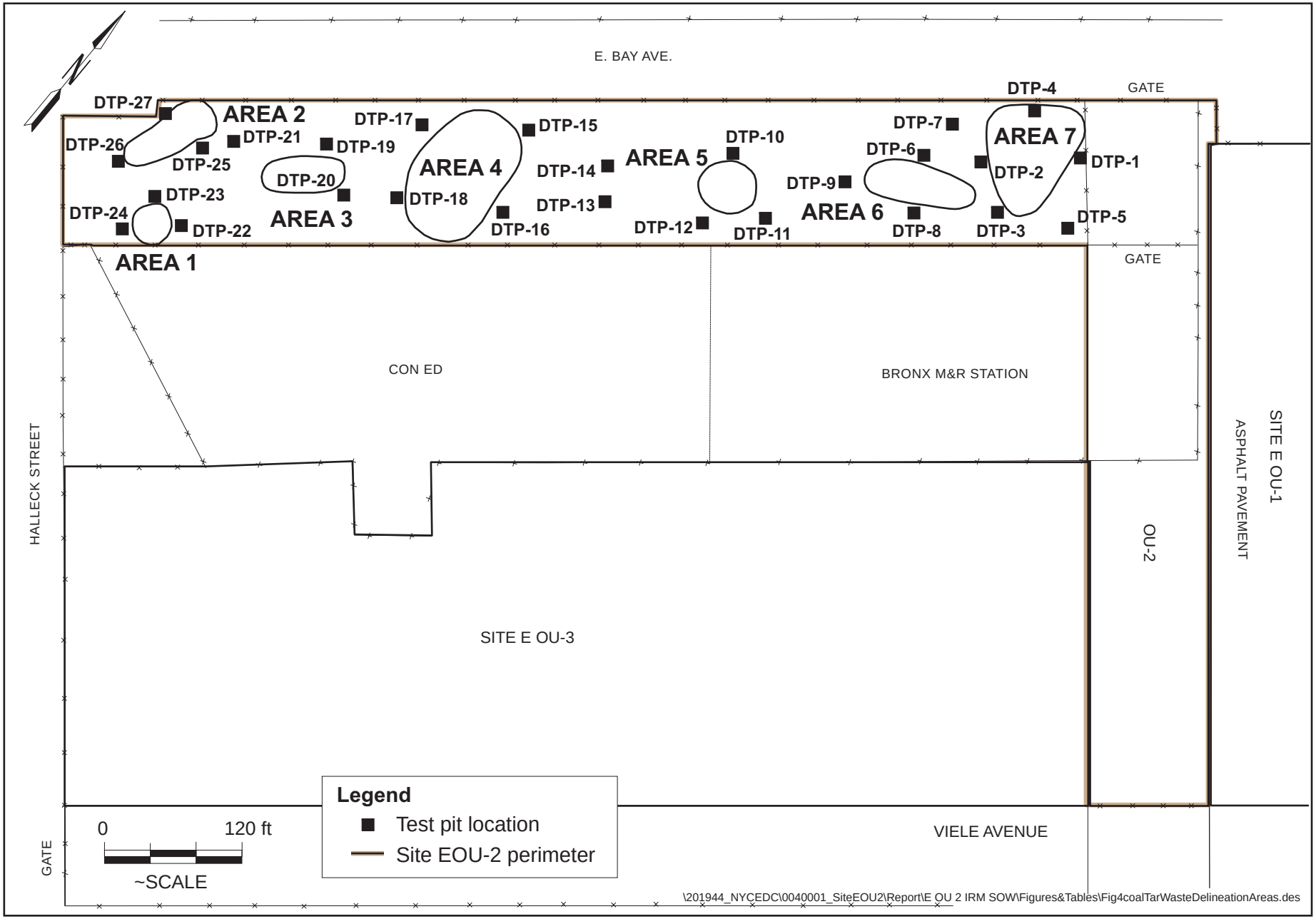
During the investigation and delineation activities, samples of material and waste were collected from test pit excavations. The following parameters were analyzed by a NYSDOH certified laboratory:

- Volatiles Organic Compounds
- Semi-Volatiles Organic Compounds
- RCRA Metals
- Polychlorinated Biphenyls
- Pesticides
- Cyanide
- Diesel-Range Organics
- Gasoline-Range Organics

Depending upon the location and reason for sampling, the samples contained a combination of soil, fill, purifier-contaminated and coal tar-contaminated waste, collected from the most visually contaminated layers of the pit. Table 1 contains the specific analytical results of the waste delineation sampling. These samples were all collected from within areas proposed for removal and therefore represent worst case waste rather than concentrations of material that will remain.

As a result of the delineation activities, a figure was created to show areas of waste material that are proposed to be removed. Figure 5, Figure 6 and Figure 7 show the various locations, thickness, depths, and aerial coverage of the Site E OU-2.

The following is a summary of the data collected from the delineation. It should be noted that all coal tar / purifier-type material removed as a result of this IRM will be submitted to facilities permitted to accept such material for thermal destruction. NYSDEC currently maintains an exemption for characteristic hazardous waste material, such as this, specifically for Toxicity Characteristic Leachate Procedure (TCLP) Benzene in the way it is



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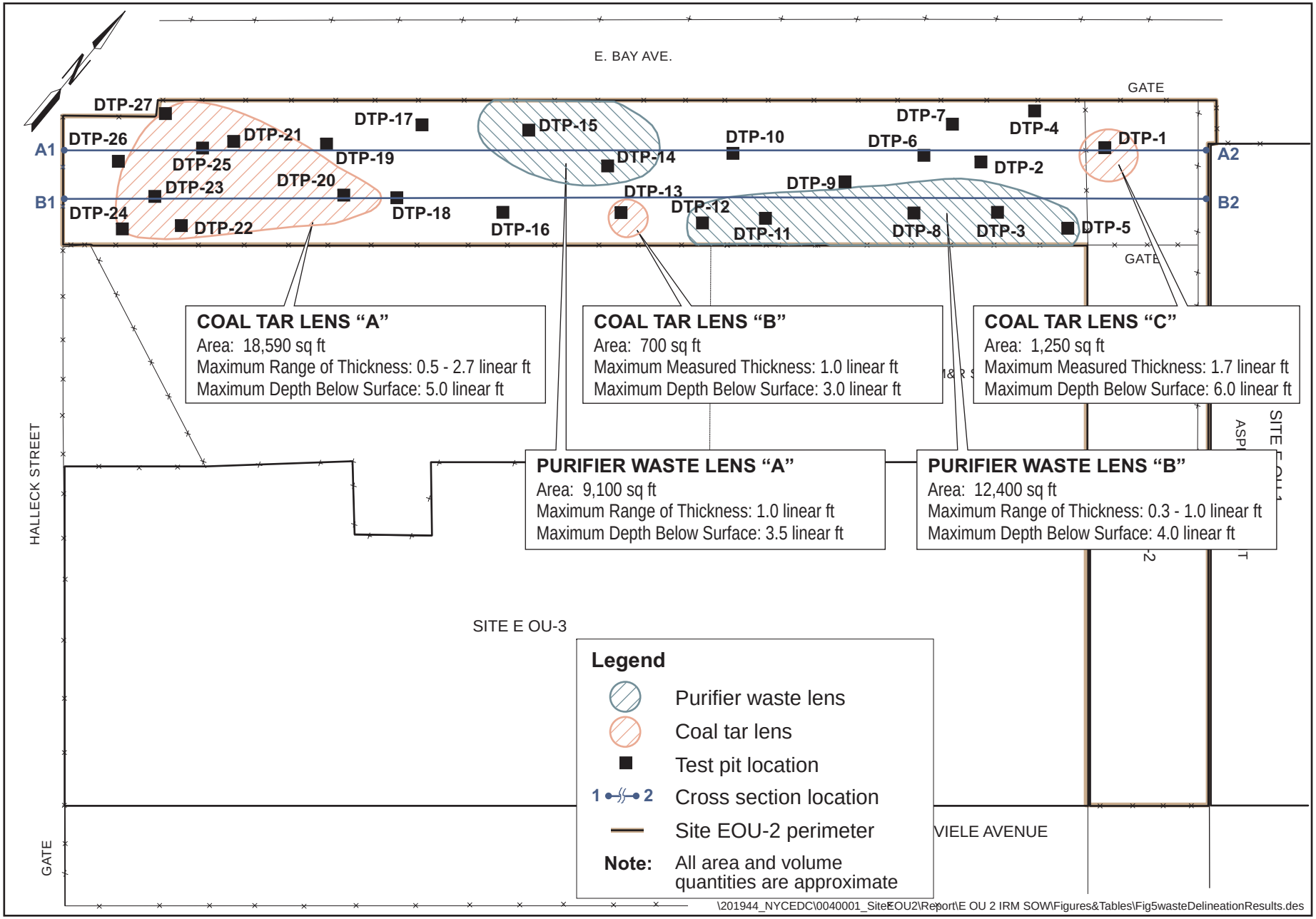
Coal Tar Waste Delineation Areas and Test Pit Locations

Hunts Point • Site E OU-2

Figure 4



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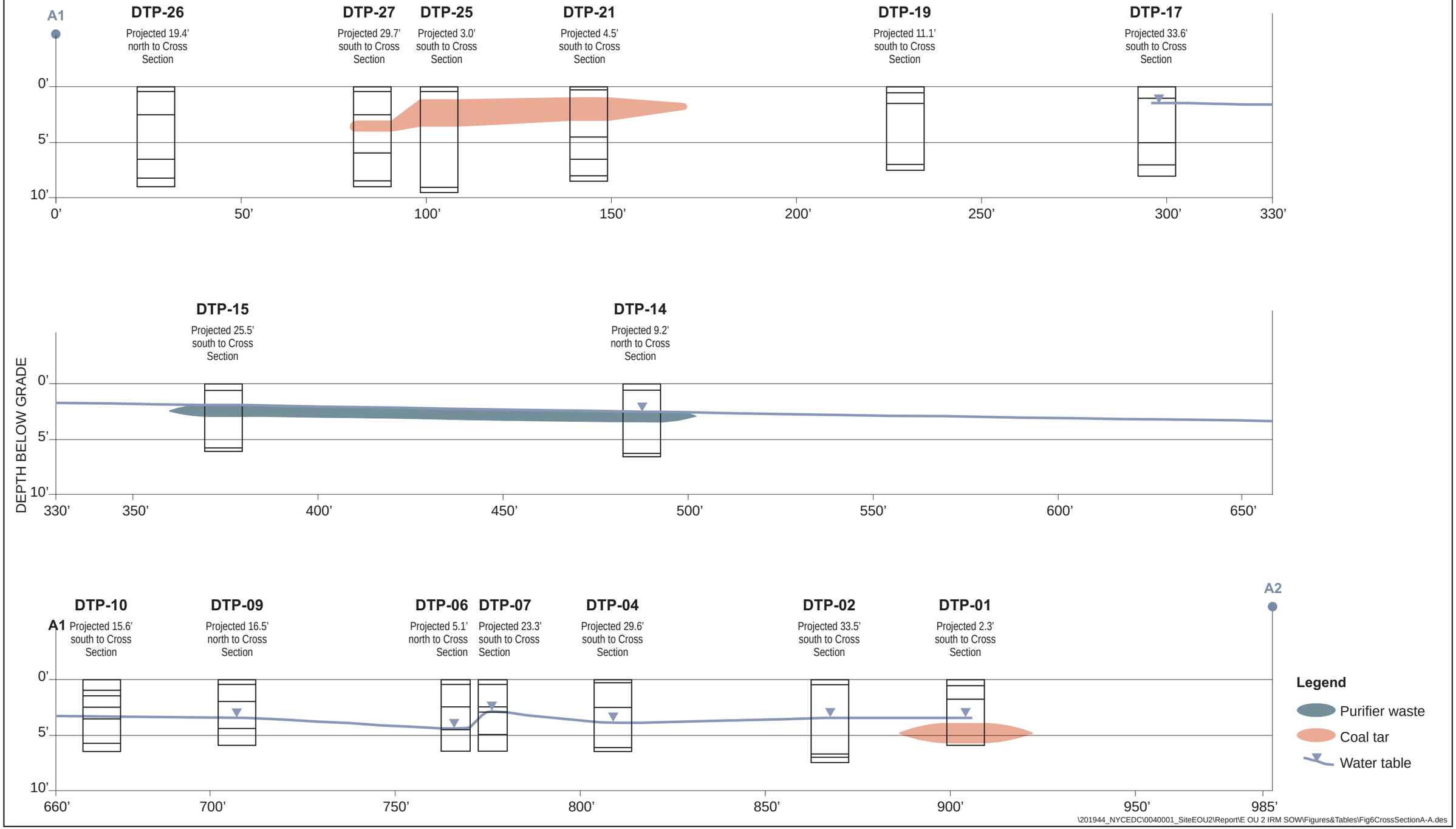
Waste Delineation Results (Plan View)

Hunts Point • Site E OU-2

Figure 5



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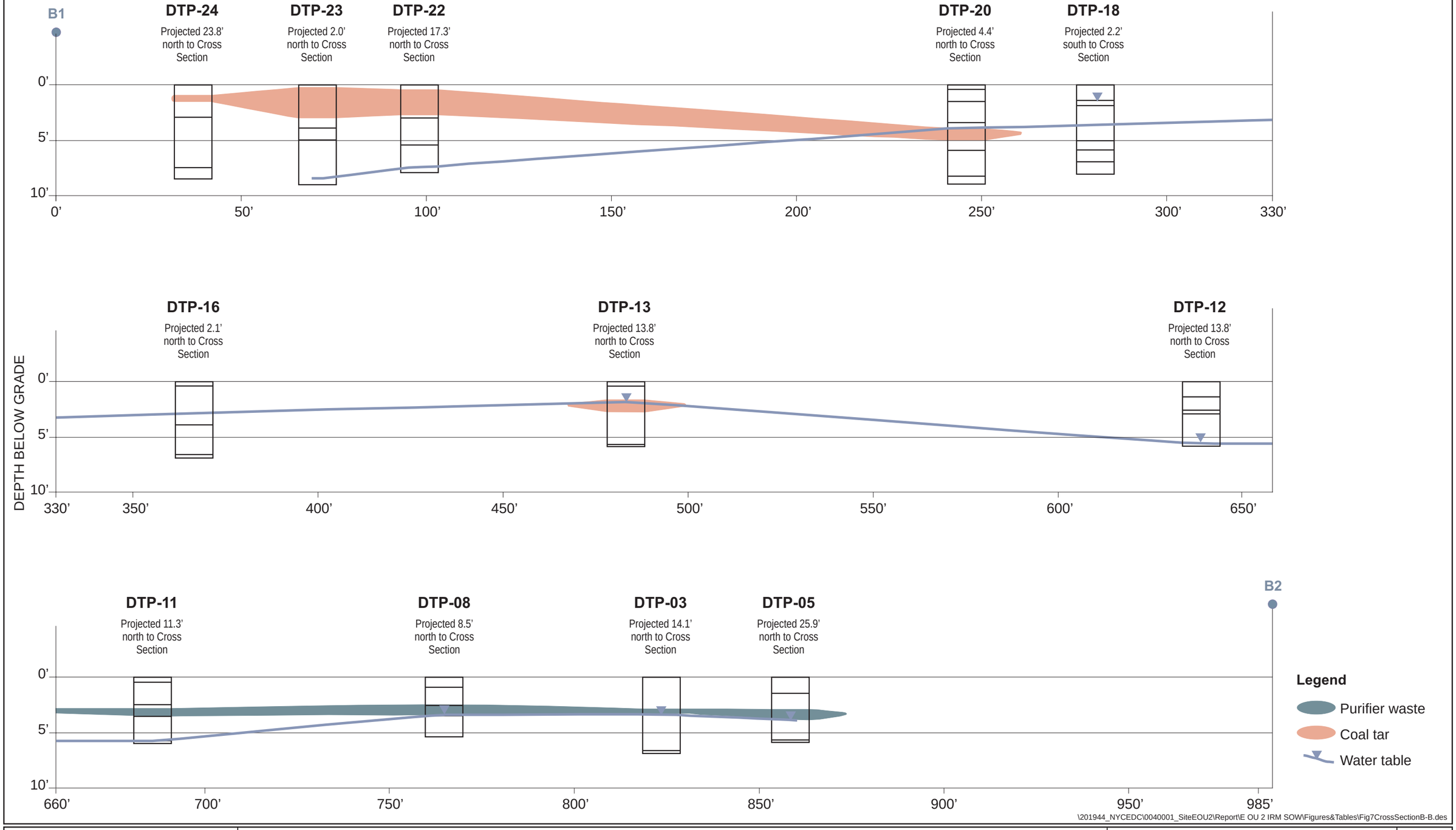
Cross Section A_1-A_2

Hunts Point • Site E OU-2

Figure 6



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Cross Section B_1-B_2

Hunts Point • Site E OU-2

Figure 7

Table 1
Page (1 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID **Lab Sample ID** **Date Sampled**	**DTP-2 (7-7.5')** **E0451-07B** **4/10/2006** DF 1:1	**DTP-4 (3-5')** **E0451-06B** **4/10/2006** DF 1:1	**DTP-5 (3-4')** **E0451-02E** **4/10/2006** DF 1:1	**DTP-6 (2-4')** **E0451-05B** **4/10/2006** DF 1:1	**DTP-8 (1-3')** **E0451-03E** **4/11/2006** DF 1:1	**NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) ***
VOCs (mg/kg)						
Acetone	ND	0.063	ND	0.052	0.025	500 [a]
Carbon Disulfide	ND	0.023	ND	0.021	0.009	NS
2-Butanone	ND	ND	ND	ND	ND	500 [a]
Chloroform	0.002 J	0.002 J	ND	ND	ND	350
Benzene	ND	**71 UD [DF 100:1]**	ND	0.005 J	0.002 J	44
Toluene	ND	0.12	ND	0.007 J	0.004 J	500 [a]
Ethylbenzene	ND	18 DJ [DF 100:1]	ND	0.088	0.002 J	390
m,p-Xylene	ND	15 DJ [DF 100:1]	ND	0.02	0.005 J	NS
o-Xylene	ND	17 DJ [DF 100:1]	ND	0.037	0.004 J	NS
Xylene (Total)	ND	32 DJ [DF 100:1]	ND	0.057	0.009	500 [a]
Styrene	ND	ND	ND	0.002 J	ND	NS
Isopropylbenzene	ND	0.17	ND	0.025	ND	NS
n-Propylbenzene	ND	0.15	ND	0.026	ND	500 [a]
1,3,5-Trimethylbenzene	ND	71 UD [DF 100:1]	ND	0.063	0.003 J	190
1,2,4-Trimethylbenzene	ND	35 DJ [DF 100:1]	ND	0.17	0.006	190
4-Isopropyltoluene	ND	0.11	ND	ND	0.003 J	NS
Naphthalene	0.003 JB	**1700 DB [DF 100:1]**	0.013 B	21 DB [DF 1:1]	12 DB [DF 1:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (2 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-13 (0-1.5') E0451-01E 4/11/2006 DF 1:1	DTP-14 (1.5-3') E0451-04B 4/11/2006 DF 1:1	DTP-18 (2-3.5') E0466-03B 4/12/2006 DF 1:1	DTP-19 (5-6') E0466-05B 4/12/2006 DF 1:1	DTP-20 (3-4') E0466-04B 4/12/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Restricted
VOCs (mg/kg)						
Acetone	ND	ND	0.08	0.062	0.057	500 [a]
Carbon Disulfide	ND	ND	ND	ND	ND	NS
2-Butanone	ND	ND	ND	ND	ND	500 [a]
Chloroform	0.002 J	0.001 J	ND	ND	ND	350
Benzene	0.003 J	ND	0.017	0.026	0.014	44
Toluene	0.005 J	ND	0.027	0.038	0.011	500 [a]
Ethylbenzene	ND	ND	0.24	0.043	0.12	390
m,p-Xylene	0.004 J	ND	0.066	0.057	0.037	NS
o-Xylene	0.002 J	ND	0.08	0.051	0.045	NS
Xylene (Total)	0.006 J	ND	0.15	0.11	0.082	500 [a]
Styrene	ND	ND	ND	ND	ND	NS
Isopropylbenzene	ND	ND	0.036	0.006	0.017	NS
n-Propylbenzene	ND	ND	ND	0.005 J	0.007	500 [a]
1,3,5-Trimethylbenzene	0.003 J	ND	0.056	0.021	0.021	190
1,2,4-Trimethylbenzene	0.003 J	ND	0.12	0.051	0.056	190
4-Isopropyltoluene	ND	ND	0.054	ND	ND	NS
Naphthalene	0.016 B	0.016 B	110 DB [DF 10:1]	47 DB [DF 8:1]	65 DB [DF 8:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (3 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-21 (2-4') E0466-06B 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02B 4/13/2006 DF 1:1	DTP-24 (0-4') E0466-01B 4/13/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Restricted
VOCs (mg/kg)				
Acetone	ND	0.13	ND	500 [a]
Carbon Disulfide	ND	ND	ND	NS
2-Butanone	ND	0.002	ND	500 [a]
Chloroform	ND	ND	ND	350
Benzene	0.004 J	ND D [DF 50:1]	0.02	44
Toluene	0.002 J	ND D [DF 50:1]	0.042	500 [a]
Ethylbenzene	0.001 J	0.15	0.038	390
m,p-Xylene	0.003 J	5.8 DJ [DF 50:1]	0.097	NS
o-Xylene	0.002 J	ND D [DF 50:1]	0.091	NS
Xylene (Total)	0.005 J	5.8 DJ [DF 50:1]	0.19	500 [a]
Styrene	ND	ND D [DF 50:1]	ND	NS
Isopropylbenzene	ND	0.011	0.003 J	NS
n-Propylbenzene	ND	0.011	ND	500 [a]
1,3,5-Trimethylbenzene	0.004 J	0.1	0.044	190
1,2,4-Trimethylbenzene	0.006	4.2 DJ [DF 50:1]	0.099	190
4-Isopropyltoluene	ND	ND	ND	NS
Naphthalene	2.1 DB [DF 1:1]	450 DB [DF 50:1]	59 DB [DF 8:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (4 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07A 4/10/2006 DF 1:1	DTP-4 (3-5') E0451-06A 4/10/2006 DF 10:1	DTP-5 (3-4') E0451-02A 4/10/2006 DF 1:1	DTP-5 (3-4') RE E0451-02ARE 4/10/2006 DF 1:1	DTP-6 (2-4') E0451-05A 4/10/2006 DF 10:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	ND	0.059 J	ND	ND	500 [a]
2-Methylphenol	ND	ND	ND	ND	ND	NS
4-Methylphenol	ND	ND	0.09 J	ND	ND	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	17	**1000 D [DF 20:1]**	3.2	2.8	140	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	3.1 J	76	2.1	3.8	23 J	NS
Acenaphthylene	4.5 J	54	2.5	3.3	84	500 [a]
Acenaphthene	2.9 J	150	0.6	0.86 J	190	500 [a]
Dibenzofuran	4.3 J	130	0.74	1.2 J	120	350
Fluorene	8.1	240	2.4	4.9	230	500 [a]
Phenanthrene	27	**670**	130 D [DF 4:1]	22	**760 D [DF 20:1]**	500 [a]
Anthracene	8.1	210	3.6	4	260	500 [a]
Carbazole	2.5 J	77	0.47 J	0.47 J	66	NS
Di-n-butylphthalate	ND	ND	120 J	ND	ND	NS
Fluoranthene	25	450	18 D [DF 4:1]	26	**580**	500 [a]
Pyrene	20	350	23 D [DF 4:1]	21	490	500 [a]
Benzo(a)anthracene	**11**	**180**	**9.6 D [DF 4:1]**	**11**	**270**	5.6
Chrysene	10	**170**	10 D [DF 4:1]	12	**240**	56
bis(2-Ethylhexyl)phthalate	ND	ND	0.35 J	0.98 J	ND	NS
Benzo(b)fluoranthene	**11**	**170**	**12 D [DF 4:1]**	**12**	**280**	5.6
Benzo(k)fluoranthene	4.8	**78**	3.8	5.1	**110**	56
Benzo(a)pyrene	**10**	**160**	**7.8**	**8.6**	**260**	1 [b]
Indeno(1,2,3-cd)pyrene	**6**	**74**	3.7	**5.6**	**110**	5.6
Dibenzo(a,h)anthracene	**1.8 J**	**26 J**	**1.2**	**1.7 J**	**38 J**	0.56
Benzo(g,h,i)perylene	7.7	79	4.1	6.2	120	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID **Lab Sample ID** **Date Sampled**	**DTP-8 (1-3')** **E0451-03A** **4/11/2006** DF 5:1	**DTP-13 (0-1.5')** **E0451-01A** **4/11/2006** DF 10:1	**DTP-14 (1.5-3')** **E0451-04A** **4/11/2006** DF 5:1	**DTP-18 (2-3.5')** **E0466-03A** **4/12/2006** DF 10:1	**DTP-18 (2-3.5') RE** **E0466-03ARE** **4/12/2006** DF 4:1	**NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) ***
SVOCs (mg/kg)						
Phenol	ND	ND	ND	0.82 J	ND	500 [a]
2-Methylphenol	ND	ND	ND	ND	ND	NS
4-Methylphenol	0.54 J	ND	ND	980 J	ND	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	30	43	13 J	110 D [DF 40:1]	150	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	13 J	15 J	2.7 J	15	34	NS
Acenaphthylene	29	78	18 J	13	27	500 [a]
Acenaphthene	5 J	8.3 J	3.4 J	18	35	500 [a]
Dibenzofuran	9.6 J	17 J	6.3 J	27	48	350
Fluorene	23	36 J	12 J	46	90	500 [a]
Phenanthrene	120	220	66	130 D [DF 40:1]	260	500 [a]
Anthracene	39	78	21	44	77	500 [a]
Carbazole	4.3 J	8.4 J	4.2 J	19	34	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	150	370	85	98 D [DF 40:1]	190	500 [a]
Pyrene	120	270	75	79 D [DF 40:1]	160	500 [a]
Benzo(a)anthracene	**72**	**160**	**44**	**46**	**81**	5.6
Chrysene	**68**	**160**	44	37	**81**	56
bis(2-Ethylhexyl)phthalate	ND	18 J	ND	ND	ND	NS
Benzo(b)fluoranthene	**76**	**180**	**53**	**42**	**70**	5.6
Benzo(k)fluoranthene	32	**84**	20 J	20	28	56
Benzo(a)pyrene	**62**	**160**	**46**	**36**	**61**	1 [b]
Indeno(1,2,3-cd)pyrene	**34**	**78**	**27**	**16**	**27**	5.6
Dibenzo(a,h)anthracene	**11 J**	**24 J**	**8.8 J**	**5.7**	**9.8 J**	0.56
Benzo(g,h,i)perylene	37	85	31	16	29	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-19 (5-6') E0466-05A 4/12/2006 DF 10:1	DTP-19 (5-6') RE E0466-05ARE 4/12/2006 DF 4:1	DTP-20 (3-4') E0466-04A 4/12/2006 DF 1:1	DTP-20 (3-4') RE E0466-04ARE 4/12/2006 DF 4:1	DTP-21 (2-4') E0466-06A 4/12/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	ND	0.53 J	ND	0.058 J	500 [a]
2-Methylphenol	ND	ND	ND	ND	0.19 J	NS
4-Methylphenol	ND	ND	0.63 J	ND	0.18 J	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	24	27	80 D [DF 4:1]	63	20 D [DF 4:1]	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	4.3	6.5 J	20	19	4.2	NS
Acenaphthylene	10	11 J	17	14 J	2.5	500 [a]
Acenaphthene	5.8	7.2 J	22	30	1.4	500 [a]
Dibenzofuran	7.3	9 J	24	24	1.5	350
Fluorene	16	22	45	51	3.6	500 [a]
Phenanthrene	59	74	200 D [DF 4:1]	190	12 D [DF 4:1]	500 [a]
Anthracene	22	23	63	60	3.3	500 [a]
Carbazole	4.6	7.5 J	24	20	1.2	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	59	59	180 D [DF 4:1]	180	8.9 D [DF 4:1]	500 [a]
Pyrene	49	54	140 D [DF 4:1]	160	9.4 D [DF 4:1]	500 [a]
Benzo(a)anthracene	**27**	**26**	**75 D [DF 4:1]**	**76**	4.7	5.6
Chrysene	26	25	**65**	**78**	4.6	56
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	0.096 J	NS
Benzo(b)fluoranthene	**29**	**25**	**61**	**72**	3.9	5.6
Benzo(k)fluoranthene	13	11 J	21	29	1.4	56
Benzo(a)pyrene	**26**	**22**	**53**	**66**	**3.4**	1 [b]
Indeno(1,2,3-cd)pyrene	**13**	**13 J**	**26**	**30**	1.7	5.6
Dibenzo(a,h)anthracene	**3.9**	**3.7 J**	**8.3**	**9.3 J**	**0.58**	0.56
Benzo(g,h,i)perylene	14	16	28	34	2.1	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-21 (2-4') RE E0466-06ARE 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02A 4/13/2006 DF 10:1	DTP-22 (0-3') RE E0466-02ARE 4/13/2006 DF 5:1	DTP-24 (0-4') E0466-01A 4/13/2006 DF 10:1	DTP-24 (0-4') RE E0466-01ARE 4/13/2006 DF 10:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	4.9	ND	ND	ND	500 [a]
2-Methylphenol	ND	3.5 J	2.1 J	ND	ND	NS
4-Methylphenol	ND	8.4	5.6 J	ND	ND	NS
2,4-Dimethylphenol	0.63 J	5.1	ND	ND	ND	NS
Naphthalene	21	290 D [DF 50:1]	**690 D [DF 20:1]**	220	59	500 [a]
4-Chloroaniline	ND	ND	ND	73	ND	NS
2-Methylnaphthalene	8.8	76 D [DF 50:1]	160	49	23 J	NS
Acenaphthylene	5.7	61	110	82	81	500 [a]
Acenaphthene	3 J	12	24	19 J	12 J	500 [a]
Dibenzofuran	2.3 J	52	96	38	30 J	350
Fluorene	7.8	78 D [DF 50:1]	140	64	54	500 [a]
Phenanthrene	29	220 D [DF 50:1]	400 D [DF 20:1]	210	210	500 [a]
Anthracene	7.8	70 D [DF 50:1]	130	81	78	500 [a]
Carbazole	2 J	32	55	21 J	19 J	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	24	150 D [DF 50:1]	270	260	310	500 [a]
Pyrene	26	120 D [DF 50:1]	210	230	270	500 [a]
Benzo(a)anthracene	**14**	**61**	**110**	**160**	**170**	5.6
Chrysene	14	**58**	**96**	**120**	**160**	56
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	NS
Benzo(b)fluoranthene	**13**	**48**	**94**	**160**	**190**	5.6
Benzo(k)fluoranthene	4.8	23	40	**64**	**80**	56
Benzo(a)pyrene	**11**	**45**	**86**	**140**	**170**	1 [b]
Indeno(1,2,3-cd)pyrene	5.1	**18**	**37**	**67**	**86**	5.6
Dibenzo(a,h)anthracene	**1.8 J**	**6.4**	**12 J**	**22 J**	**29 J**	0.56
Benzo(g,h,i)perylene	6	18	39	70	91	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Diesel-Range and Gasoline-Range Organics Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-5 (3-4') E0451-02 4/10/2006	DTP-8 (0-3') E0451-03 4/11/2006	DTP-13 (0-1.5') E0451-01 4/11/2006	DTP-18 (2-3.5') E0466-03D 4/12/2006	DTP-20 (3-4') E0466-04D 4/12/2006	DTP-21 (2-4') E0466-06D 4/12/2006	DTP-22 (0-3') E0466-02D 4/13/2006
DRO (mg/kg)	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1
Diesel-Range Organics	2000	3900	7100	6300 B	4000 B	1000 B	6300 B
GRO (mg/kg)	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1
Gasoline-Range Organics	15 B	14 B	10 B	69 B	53 B	15 B	130 B

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

DF - Dilution Factor e.g., 10:1.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Heavy Metals Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07 4/10/2006 DF 1:1	DTP-4 (3-5') E0451-06 4/10/2006 DF 1:1	DTP-5 (3-4') E0451-02 4/10/2006 DF 1:1	DTP-6 (2-4') E0451-05 4/10/2006 DF 1:1	DTP-8 (1-3') E0451-03 4/11/2006 DF 1:1	DTP-13 (0-1.5') E0451-01 4/11/2006 DF 1:1	DTP-14 (1.5-3') E0451-04 4/11/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Metals (mg/kg)								
Arsenic	**24.2 ****	**72.4 ****	**17.6 ****	14.7 **	14.3 **	10.6 **	6.8 **	16 [a]
Barium	207	120	287	104	110	112	110	400
Cadmium	0.75 E **	0.12 BE **	0.27 BE **	0.21 BE **	ND	0.051 BE **	ND	9.3
Chromium	25.5	25.2	29.2	20.9	16.2	20.9	17.3	1500 [b]
Lead	554 E **	488 E **	679 E **	492 E **	426 E **	386 E **	522 E **	1000
Selenium	1.5	6.4	1 B	0.39 B	1.4	ND	0.67 B	1500
Silver	ND	ND	ND	ND	ND	ND	ND	1500
Mercury	2 N	2.5 N	**3 N**	2.5 N	2.6 N	**2.9 N**	1.7 N	2.8 [c]
Cyanide	NA	NA	**95.6**	NA	11.6	21.4	NA	27 [b]

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

H - Parameter analyzed outside of hold time

N - Matrix spike recovery falls outside of the control limit.

E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

DF - Dilution Factor e.g., 10:1.

NA - Not Analyzed

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - For consituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

b - The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

c - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts) (refer to NYSDEC TSD table 5.6-1).

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

** - Relative Percent Difference for duplicate analyses is outside of the control limit.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Heavy Metals Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-18 (2-3.5') E0466-03D 4/12/2006 DF 1:1	DTP-19 (5-6') E0466-05A 4/12/2006 DF 1:1	DTP-20 (3-4') E0466-04D 4/12/2006 DF 1:1	DTP-21 (2-4') E0466-06D 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02D 4/13/2006 DF 1:1	DTP-24 (0-4') E0466-01D 4/13/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Metals (mg/kg)							
Arsenic	9.8	8.9	8.3	9.4	11.5	11.5	16 [a]
Barium	98.4	129	150	60.8	197	110	400
Cadmium	ND	0.23	0.19 B	ND	0.67	0.14 B	9.3
Chromium	17.3	19.7	23.4	6.4	21.2	19.3	1500 [b]
Lead	216	363	600	94.1	452	385	1000
Selenium	0.48 B	ND	ND	1.9	0.41	0.15 B	1500
Silver	ND	ND	ND	ND	ND	ND	1500
Mercury	1	0.92	2.5	0.32	0.78	0.69	2.8 [c]
Cyanide	14.9	NA	22 H	5.2	2.5	NA	27 [b]

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

H - Parameter analyzed outside of hold time

N - Matrix spike recovery falls outside of the control limit.

E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

DF - Dilution Factor e.g., 10:1.

NA - Not Analyzed

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - For consituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

b - The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

c - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts) (refer to NYSDEC TSD table 5.6-1).

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

** - Relative Percent Difference for duplicate analyses is outside of the control limit.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Pesticide and Polychlorinated Biphenyl Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07A 4/10/2006	DTP-4 (3-5') E0451-06A 4/10/2006	DTP-5 (3-4') E0451-02A 4/10/2006	DTP-6 (2-4') E0451-05A 4/10/2006	DTP-8 (1-3') E0451-03A 4/11/2006	DTP-13 (0-1.5') E0451-01A 4/11/2006	DTP-14 (1.5-3') E0451-04A 4/11/2006	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Pesticides (mg/kg)	DF 1:1	DF 10:1	DF 10:1	DF 10:1	DF 5:1	DF 5:1	DF 5:1	
beta-BHC	ND	ND	ND	ND	0.015 P	ND	ND	3
Heptachlor epoxide	ND	ND	ND	0.025 P	ND	ND	0.017	15
Dieldrin	ND	0.046 P	ND	ND	ND	ND	ND	1.4
4,4-DDE	ND	ND	ND	0.14 P	0.042 P	0.028 P	ND	62
4,4-DDD	0.017 P	ND	0.19 P	0.53 P	0.22 P	ND	0.033 P	92
Endosulfan sulfate	0.005	0.061	ND	0.18 P	0.091	0.063 P	ND	200 [a]
4,4-DDT	0.012	0.1	0.7	0.16 P	0.12	0.11 P	0.045	47
Methoxychlor	ND	ND	ND	ND	ND	ND	0.56	NS
Endrin ketone	0.013	ND	0.11	0.18 P	0.25	0.088 P	0.05	NS
Endrin aldehyde	0.0062	ND	ND	ND	ND	ND	ND	NS
gamma-Chlordane	0.0044 P	0.063 P	ND	0.15 P	0.056 P	0.036 P	0.032 P	NS
PCBs (mg/kg)	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	
Aroclor-1254	0.084	0.6 P	0.4 P	0.61 P	0.66 P	0.44 P	0.76	1
Aroclor-1260	0.064	0.53	0.41	0.4 P	0.66	0.22 P	0.29 P	1

Notes:

P - Pesticide/Aroclor target analyte has > 25% difference for the detected concentrations between the two GC columns.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the Reporting Limit.
NS - No Standard.
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section
b - This SCO is for the sum of Endosulfan I, Endosulfan II and Endosulfan Sulfate.
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Pesticide and Polychlorinated Biphenyl Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-18 (2-3.5') E0466-03D 4/12/2006	DTP-19 (5-6') E0466-05A 4/12/2006	DTP-20 (3-4') E0466-04D 4/12/2006	DTP-21 (2-4') E0466-06D 4/12/2006	DTP-22 (0-3') E0466-02D 4/13/2006	DTP-24 (0-4') E0466-01D 4/13/2006	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Pesticides (mg/kg)	DF 5:1	DF 5:1	DF 5:1	DF 5:1	DF 5:1	DF 5:1	
beta-BHC	0.018 P	ND	ND	ND	ND	ND	3
Heptachlor epoxide	0.045	0.014 P	0.048	ND	ND	ND	15
Dieldrin	ND	ND	ND	ND	ND	ND	1.4
4,4-DDE	ND	ND	0.069	ND	ND	ND	62
4,4-DDD	0.11 P	0.14 P	0.096 P	0.16 PE	ND	0.04 P	92
Endosulfan sulfate	ND	ND	ND	0.023	0.032 P	0.039 P	200 [a]
4,4-DDT	0.033 P	0.084	0.18	0.038	0.032 P	0.029	47
Methoxychlor	0.21 P	0.25	ND	0.11 P	ND	ND	NS
Endrin ketone	0.072	0.038 P	ND	ND	0.043	0.071 P	NS
Endrin aldehyde	0.036 P	ND	ND	0.024 P	ND	ND	NS
gamma-Chlordane	0.082 P	0.032 P	0.083 P	ND	0.032 P	0.033 P	NS
PCBs (mg/kg)	DF 1:1	DF 1:1	DF 5:1	DF 1:1	DF 1:1	DF 1:1	
Aroclor-1254	0.28	0.39	**3.4**	ND	0.2	0.32	1
Aroclor-1260	0.15	0.42	**1.4**	ND	0.12	0.13 P	1

Notes:

P - Pesticide/Aroclor target analyte has > 25% difference for the detected concentrations between the two GC columns.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the Reporting Limit.
NS - No Standard.
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 5
b - This SCO is for the sum of Endosulfan I, Endosulfan II and Endosulfan Sulfate.
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

thermally treated. Any TCLP testing for disposal will be performed post-excavation when material is fully stockpiled.

Volatile Organic Compounds (VOCs): Of the 13 test pit soil samples collected, only one sample was found to contain concentrations of Benzene above NYSDEC BCP Track 2 SCOs (DTP-4). Most of the test pit soil samples submitted for analysis for VOCs had to be diluted because of the heightened concentrations of Naphthalene.

Semi-Volatile Organic Compounds (SVOCs): Of the 13 test pit samples and 7 additional reanalysis of selected samples, all samples were found to contain concentrations of several compounds in exceedence of NYSDEC BCP Track 2 SCOs. The compounds exhibiting the highest concentrations in exceedence of the SCOs included Naphthalene, Phenanthrene, Flouranthene, Benzo(a)anthracene, Chrysene, Benzo(b)anthracene, Benzo(k)anthracene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene. The samples containing the highest total SVOC concentrations (DTP-4, DTP-6, DTP-13, DTP-22 and DTP-24) were located in areas containing either purifier waste or visibly impacted soil.

Diesel range organics (DROs) and gasoline range organics (GROs) were also ran to provide background for some potential disposal options. The analytical results did not indicate the petroleum content would be overly restrictive for material disposal.

RCRA Metals (Metals): Of the 13 samples, 4 were reported to contain metals above the NYSDEC BCP Track 2 SCOs. Arsenic, Mercury and/or Cyanide concentrations exceeded Track 2 thresholds in samples DTP-2, DTP-4, DTP-5 and DTP-13.

Pesticides/PCBs: Of the 13 samples analyzed for PCBs, only one sample (DTP-20) was found to contain concentrations in exceedence of NYSDEC BCP Track 2 SCOs. Aroclor-1254 and Aroclor-1260 were detected at concentrations of 3.4 and 1.4 mg/kg, thus exceeding the SCOs of 1 mg/kg. Although detectable levels of PCBs were obtained in other samples, no other locations exhibited concentrations in exceedence. All of the 13 samples analyzed for Pesticides were found to contain concentrations well below NYSDEC BCP Track 2 SCOs.

REMEDIAL WASTE REMOVAL

Removal Delineation and Feasibility

Two types of waste (purifier and coal tar) are targeted for excavation, removal and treatment from Site E OU-2 to complete the proposed IRM. These areas targeted include all areas identified as areas of concern during the site investigation and waste delineation activities. The determining factors used in this recommendation are based upon conditions and actions that have already been established on previously remediated VCP sites at Hunts Point. Essentially, pockets of waste that are thick enough and continuous, as well as being at a depth where they could be removed without impacting the subsurface clay layer are targeted for removal.

Two purifier waste lenses were encountered. Both deposits were measured to be between 0.5 and 1 foot thick. Removal for buried waste deposits less than approximately 6 inches thick has not been effective and mixes additional fill material that is not proposed for excavation. The removal of waste that is approximately 1 foot thick and meets the conditions described previously is proposed to be targeted for removal. The conditions of the perched and discontinuous water table at this site will also be evaluated during excavation. This is expected to impact the removal of the areas of purifier waste. Essentially, the same procedure that was used during the removal of purifier waste at Site B (Fish Market) will be employed. Based on the area and expected thickness of the purifier waste deposits, it is expected that approximately 990 cubic yards of this material will be removed (refer to Figure 8).

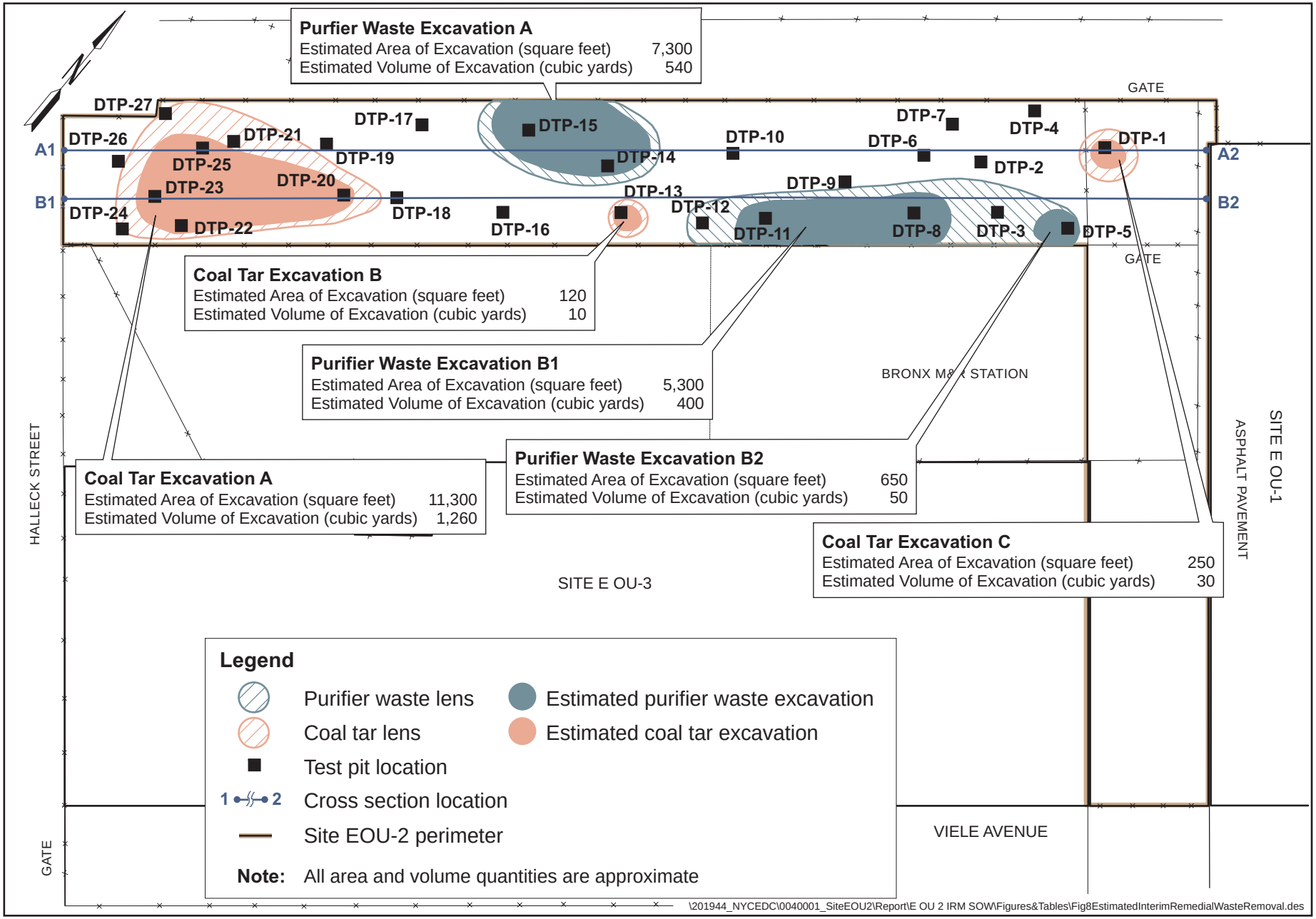
Coal tar was (in-situ) encountered in three areas across the Site. Each of these three coal tar areas are proposed to be removed for treatment and disposal. Excavation in the two smaller areas and a portion of the larger area may occur partially beneath the shallow water table. During the excavation if material is removed beneath the water table it will be temporarily set on the site of the excavation to allow for free water to drain back into the excavation. Efforts at removing coal tar from just below the perched water table have met with reasonable success in several previous Hunts Point VCP remediation efforts. The removal will not extend into the underlying clay deposit of the three lenses and is targeted to excavate and remove off-Site the cohesive portions of fill that have been combined with coal tar.

The largest exists along the western portion of the Site (Coal Tar Lens A), with an approximated area of 18,600 square feet. The second largest coal tar lens was identified near the eastern perimeter of the Site (Coal Tar Lens C), with an approximated area of 1,250 square feet. The smallest coal tar lens was identified along the central portion of the site (Coal Tar Lens B), with an approximated area of 700 square feet (refer to Figure 8).

The following are the calculated estimated volumes of each of the different excavation locations, referenced in Figure 8:

Coal Tar Lens A (western portion of E OU-2)	1,260	cubic yards
Coal Tar Lens B (central portion of E OU-2)	10	cubic yards
Coal Tar Lens C (eastern portion of E OU-2)	30	cubic yards
Purifier Waste Lens A (central portion of E OU-2)	540	cubic yards
Purifier Waste Lens B (eastern portion of E OU-2)	450	cubic yards
Total	2,290	cubic yards

Delineation sample DTP-4, taken 3 to 5 feet below ground surface, exhibited a single VOC concentration in exceedence of the Track 2 threshold for Benzene (71 ppm). As per the field log completed during the time of the delineation test pit excavation, the material found at that interval is an unconsolidated mixture of slag, cinders and small amounts of what appeared to be solidified coal tar. As the target of this IRM is the excavation of coal tar and



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Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Estimated Interim Remedial Waste Removal

Hunts Point • Site E OU-2

Figure 8

purifier waste and since this material only contained small amounts of coal tar, this mixture is being added to the excavation.

The final quantity of waste will vary depending upon the expansion, thickness, and the relative percentage of coal tar in the surrounding fill matrix. Disposal of this classification of material is performed by weight (tons) rather than by volume. The total estimated tons expected for removal are based on the 2,290 cubic yards of in-situ material. The fill is then estimated to weigh 1.5 to 1.7 tons per yard depending on moisture and general composition. This will equal between 3,435 to 3,893 tons.

Waste material (coal tar and purifier) will be thermally treated prior to disposal. Coal tar that has been thermally treated (incinerated) requires the residual ash and granular matrix to be disposed of at an appropriate solid waste facility. Purifier material will also be thermally treated. In some cases, metals will be extracted from the residual ash should a sufficient quantity be recovered.

The removal of waste from the site will be evaluated based on the type of facilities permitted to accept this specific material. In previous removal actions, coal tar and purifier wastes were brought to facilities that performed various types of thermal treatment. As previously mentioned, NYSDEC Division of Environmental Remediation DER-8 (TAGM 4060) allows for treatment of coal tar waste to be performed and this also exempts this category of waste from being characteristic hazardous waste based on the benzene concentration.

If during the removal of coal tar, additional fill material is determined to be saturated with other petroleum material (petroleum saturated fill was not encountered in the delineation), then this will also be excavated and stockpiled with the coal tar material. HDR|LMS will document the removal locations by using Global Positioning Satellite (GPS).

The proposed future use of Parcel E OU-2 will be as a paved parking lot associated with the overall Site E OU-3 redevelopment for use as a food distribution facility. The site will require typical upgrades and the installation of utilities including drainage, fencing, entrance and exit cuts and lighting. There are currently no plans for structures or enclosed buildings on Site E OU-2. The removal of the coal tar from this area is based on the need to provide a stable ground surface in addition to removal of as much of the concentrated MGP waste as feasibly possible. The removal is expected to extend into the shallow saturated zone only in several locations as the vast majority of the waste was encountered above groundwater.

Removal of purifier waste will still be performed on areas where the layer can be removed without including significant amounts of fill material. The primary reason for removal of this material will be to prevent exposure to workers during construction and installation of utilities. Based upon field observations during the waste delineation activities, the two purifier waste lenses were seen as existing just at the water table and/or measuring 12 inches or less. In the event purifier material is encountered significantly beneath the water table or it cannot be segregated without including significant additional fill material, it will be marked and left in place. The Site Management Plan and Site Health and Safety Plan will address post

redevelopment exposure hazards and hazard avoidance pertaining to possible future intrusive work involving any residual material.

Any remaining residual material will be encapsulated by the final engineering surface on the site which will include a bituminous paved parking lot. The material used to make asphalt will contain significant quantities and percentages of petroleum hydrocarbons and many of the same compounds bound up in the coal tar will also be built into the asphalt matrix. This allows the parking lot to effectively encapsulate any residual material below the surface and prevent exposure in the future. The encapsulation of residual waste and historic fill will significantly reduce further contact of precipitation with the fill material, preventing migration downward through the soil column. The goal of the removal will be to excavate identified coal tar material that is present in an amount that could liquefy and cause soft areas in the parking lot or actually erupt at the surface.

Excavation, Removal and Disposal Activities

Prior to site entry, HDR|LMS will submit for approval to the NYSDEC and NYSDOH a Site-Specific Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP). A comprehensive project schedule including all IRM activities will be provided as soon as the information becomes available. Prior to excavation commencing, HDR|LMS will mark-out / flag the approximate excavation limitations based upon GPS coordinates obtained during the waste delineation activities. Excavations will be performed by a 40-hour OSHA trained operator using a tire or track-mounted backhoe/excavator.

During excavation activities, all inspection of material will occur from outside the excavation pit. HDR|LMS will monitor and log each excavation operation with a combustible gas indicator (CGI) and either a photo-ionization detector (PID), or flame-ionization detector (FID). Readings will be collected according to depth and location in the excavations and will be used to reconstruct a subsurface profile of the Site. Material that is excavated above water and is intended to be placed back in the excavation will be stockpiled adjacent or as near the excavation as possible. It is expected that this will be removed in increments until the depth of the waste material is encountered. Waste will be removed and stockpiled separately at a location to be determined in the field. The location will be chosen based upon site conditions at the time of the removal, however it is anticipated that a section of the exposed historic paved surface will provide a level supporting location. The temporary storage area will be underlain and covered with polyethylene sheeting. The edges of the polyethylene sheeting in each storage area will be weighed down to ensure the cover will not be accidentally removed. The sheeting will sufficiently prevent the waste from directly contacting the staging area. At the end of each workday, the stockpiles will be surrounded by silt fencing. As work progresses, it is anticipated that separate piles will be created in order to allow for disposal sampling to be conducted. Pile size will be determined in the field based on a combination of logistical access, equipment reach, and disposal facility sampling frequency requirements. Once it has been determined that no further material should be added to a particular pile, classification/disposal samples will be collected according to disposal facility requirements. The pile will be covered and given a specific identification (numerical). Piles will be secured with a polyethylene cover in such a way as to prevent wind and rain from contacting and causing the waste to wash or blow across the site.

Excavations will continue to a point at which no additional waste can be reasonably segregated from the surrounding fill material, as described previously. If an excavation area is to remain open and not backfilled, yellow tape or some other marking instrument will be placed around the perimeter of the area. When conditions at a specific location are completed, the area will be photographically documented and the limits will be recorded with GPS. NYSDEC will be contacted with a basic description of the completed work for that location (approximate area, volume, depth, conditions, any changes from initial and/or sampling plans).

End point samples will be collected at each excavation to document conditions of the material remaining in that area. Sample quantity and depth collected from each excavation pit will vary as dimensions of each excavation can not be determined prior to their completion. The basic proposed plan for sampling will be the collection of at least four (4) sidewall samples from the depth covering the corresponding waste material at the location in the excavation. If groundwater is not present in the excavation two (2) bottom samples will also be collected. It is not proposed that groundwater samples be collected from standing water in excavations as this water has been mixed and in contact with waste that has been removed. It has been determined from previous excavations at other VCP sites in the Hunts Point peninsula that when the excavation has been left exposed to the atmosphere for a short period of time (several days) residual VOCs resulting from the excavation disturbance are volatilized. If the excavations are larger in area than initially determined, HDR|LMS, NYCEDC and NYSDEC will discuss and determine the approximate number of samples to document conditions.

Upon completion of stockpiling and conditions sampling, the stockpiled fill material may be placed back in the excavations. During the waste removal, the following materials will not be permitted to be backfilled:

- Organic matter such as wood, roots, or stumps;
- Waste tires;
- Scrap metal;
- Latex paints;
- Furniture and toys;
- Domestic refuse;
- Discarded appliances;
- Vehicles;
- Empty aerosol cans and paint cans; and
- Compressed gas cylinders.

The conditions of the site that were discovered during the delineation activities indicated fill of varying condition and composition located across the site. Therefore, it is not proposed that specific effort be taken when staging excavated material for backfill so that the material is returned to the same location in the excavation from where it was removed. If there are areas of standing water in excavations, HDR|LMS proposes to backfill with a layer of imported non-regulated material that will have a larger grain size in comparison to what was removed. Material similar to recycled concrete will be acceptable provided it is imported from a NYSDEC solid waste registered facility. Use of this material in saturated zones or zones with standing water will allow drainage to occur rather than the creation of soft areas that will settle at a later date.

Post-Removal Activities

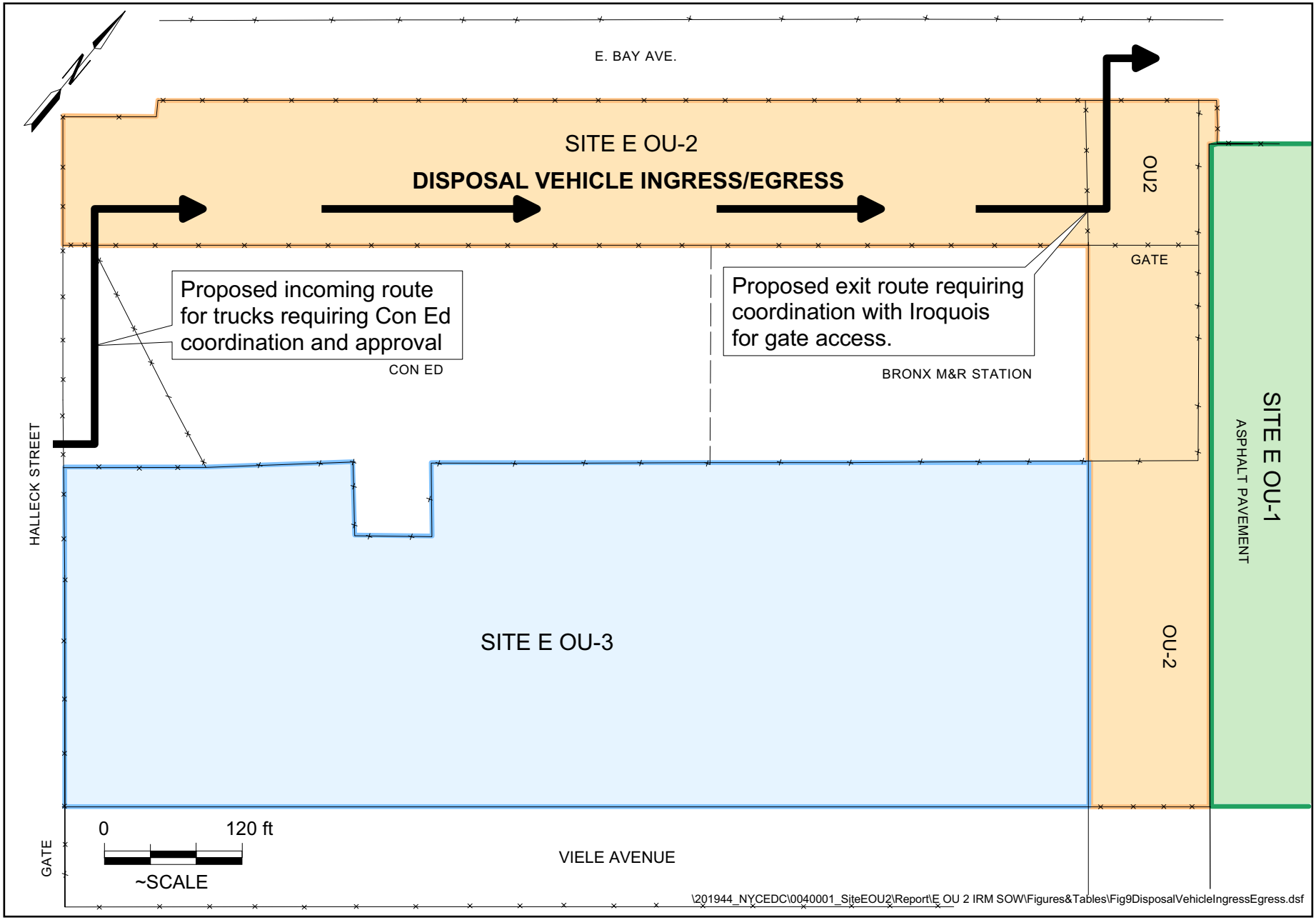
Following removal and stockpiling of the source material from the excavations, the balance of the material will be placed back into the excavation. Understanding that additional material is necessary for the final development of the Site, HDR|LMS is not proposing to bring in fill to replace what is removed for disposal. The remaining backfill will be placed in the excavation as evenly as possible. HDR|LMS's subconsultant performing the excavation operations will be responsible for the erection of yellow warning tape around the post-excavation areas. Upon receipt of the analytical results the material will be loaded onto properly licensed and permitted vehicles and then transported to the final disposal facility. Prior to the commencement of site work, an area where gravel or recycled concrete will be identified. This area will be used for the inspection of disposal vehicles for both tight-fitting covers and to assure that materials from the site will not be taken onto public roadways via tire tracks or overfill before leaving the site. If a vehicle is determined to require washing prior to departing from the site, a truck wash will be erected. Each load of material from a specific pile will be logged and a weight ticket will be submitted from the accepted treatment/disposal facility. Figure 9 shows the proposed disposal vehicle ingress and egress routes from the site.

HDR|LMS will review permits, sampling frequency and requirements from submitted disposal facilities and based on the criteria that will be the basis for the decision, one or more facilities will be chosen. HDR|LMS will maintain the file for this material and this information will be provided in the Interim Remedial Action Report.

When the material has been removed HDR|LMS will prepare an Interim Remedial Report. The report will be submitted in both hardcopy and in digital format on compact disk to NYSDEC and NYSDOH. The report will outline the following items:

- Figures showing excavations with dimensions, piles, structures, and conditions encountered
- Pile locations, dimensions, sample locations, designation, and results
- Copies of disposal documentation, manifests, weigh tickets (if applicable)
- Written description of the procedure, conditions, or changes

The Interim Remedial Report will precede the Final Engineering Report relating to the overall parking lot construction and site redevelopment.



HDR | LMS Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. One Blue Hill Plaza Pearl River, NY 10965	**Disposal Vehicle Ingress/Egress** **Hunts Point • Site E OU-2**	**Figure 9**

APPENDIX A

HDR|LMS HEALTH AND SAFETY PLAN (HASP)

PROJECT SPECIFIC HEALTH AND SAFETY PLAN

For

INTERIM REMEDIAL MEASURES

On behalf of the

New York City Economic Development Corporation

At

OPERABLE UNIT 2 PORTION OF PARCEL E
HUNTS POINT FOOD DISTRIBUTION CENTER
BRONX, NEW YORK
NYSDEC VCP SITE NO. V00681-2

Dates in Effect
[*MONTH YEAR*] to [*MONTH YEAR*]

HDR | LMS
One Blue Hill Plaza, 12th Floor
Pearl River, New York 10965

Project Number
147-000000000040001-001

Table of Contents

SITE SPECIFIC HEALTH & SAFETY PLAN
TITLE PAGE
HDR|LMS

PROJECT NAME**: NYCEDC Hunts Point Site E OU 2**	PROJECT COMPANY: **HDR**|**LMS**
JOB SITE ADDRESS: **Not Available (southeast corner or Halleck St. & E Bay Av.)**	JOB NUMBER: **147-000000000040001-001**
PROJECT MANAGER: **Kevin P. McCarty**	PHONE NO. : **(845) 735-8300, extension 223**
SITE CONTACT: **Kevin P. McCarty or Stephanie C. Nakai**	PHONE NO. : **(845) 735-8300, extension 223 or extension 263**
(-) AMENDMENT NO. 0	

OBJECTIVES OF FIELD WORK:

Perform interim remedial contaminated soil/fill excavation and removal from site.

Field Activities Include but are not limited to:
1. Flagging of pre-determined remedial areas of excavation
2. Excavation of pre-determined remedial areas
3. Stockpiling of targeted excavated waste for pre-disposal testing
4. Endpoint soil sampling of each pre-determined remedial area of excavation
5. Backfilling of non-targeted material excavated from remedial area
6. Off-site removal and disposal of targeted excavated waste

SITE TYPE: *Check as many as applicable*

( ) Active	( ) Landfill	( ) Natural
(X) Inactive	( ) Uncontrolled	( ) Military
(X) Secure	**(X) Industrial**	( ) Other specify**:**
( ) Unsecured	( ) Residential	
( ) Enclosed space	( ) Well Field	

DESCRIPTION AND FEATURES: *Summarize below. Include principal operations and unusual features (containers, buildings, dikes, power lines, hills, slopes, rivers)*

The Site is located in the urbanized Hunts Point Food Distribution Center in Bronx, New York.

Intrusive sampling and physical inspection of material on the site took place 2005-2006. This phase consisted of installation of 10 test borings and excavation of 20 test pits. Samples from these areas were collected and submitted for analysis. It also included the installation of 2 groundwater piezometers and 7 shallow soil gas sampling points. The final phase was the collection and analysis of samples from the installed piezometers and gas points. It also included the collection of measurement points using a Global Positioning System (GPS) to accurately document the areas where sampling was conducted. Based upon March 16, 2006, comments received from NYSDEC on the Draft Investigative Report for E OU 2, HDR|LMS performed a coal tar waste delineation in April 2006 to supplement the results of the site investigation. Twenty-seven (27) test pits were installed.

Site E OU 2 can be described as an inverted and reversed “L” shaped site. The top section lies parallel and adjacent to the southern boundary of East Bay Avenue from the intersection of Halleck Street approximately 950 ft east. This is referred in this report to the northern portion of Site E OU 2. The bottom leg of the parcel begins at East Bay Avenue at the eastern end of the previously described “northern section” of E OU 2. It continues south approximately 600 ft. This is referred to in this Report as the southern portion of Site E OU 2.

No investigation was performed on the southern section of Site E OU 2 for this Report as this entire area was previously investigated, remediated and given sign off by NYSDEC and NYSDOH under the closure for Site E OU 1.

The results of the investigative tasks and laboratory analyses across the site show that the northern portion of the E OU 2 site contains a significant amount and variety of fill material. Some areas of the site contain mixed soil and demolition material while a significant portion of the remainder of the northern portion of the site contains coal cinders,

SITE SPECIFIC HEALTH & SAFETY PLAN
TITLE PAGE
HDR|LMS

ash, and slag believed to be from the coal gas production process. Several areas within the site contained residual coal tar in the shallow test pits and at the ground surface with boils visible along the southern fence line adjacent to the Con Edison compressor station.

There were a number of locations within the northern portion of the site that were found to contain coal ash that was heavily impacted with what appeared to be coal tar. These areas were identified in the test pitting and in several probes. The southern portion of Site E OU 2 was previously investigated during the initial site E OU 1 investigation and redevelopment of Site E OU 1. During the redevelopment there were several thousand yards of excess material excavated during the construction of the parking area of E OU 1 and that material was placed on the southern portion of E OU 2. This material was referred to in that report as the "berm". The berm amounted to several thousand yards that was relocated to Site A OU 2 to be used for replacement of material for a pending coal tar removal on Site A OU 2.

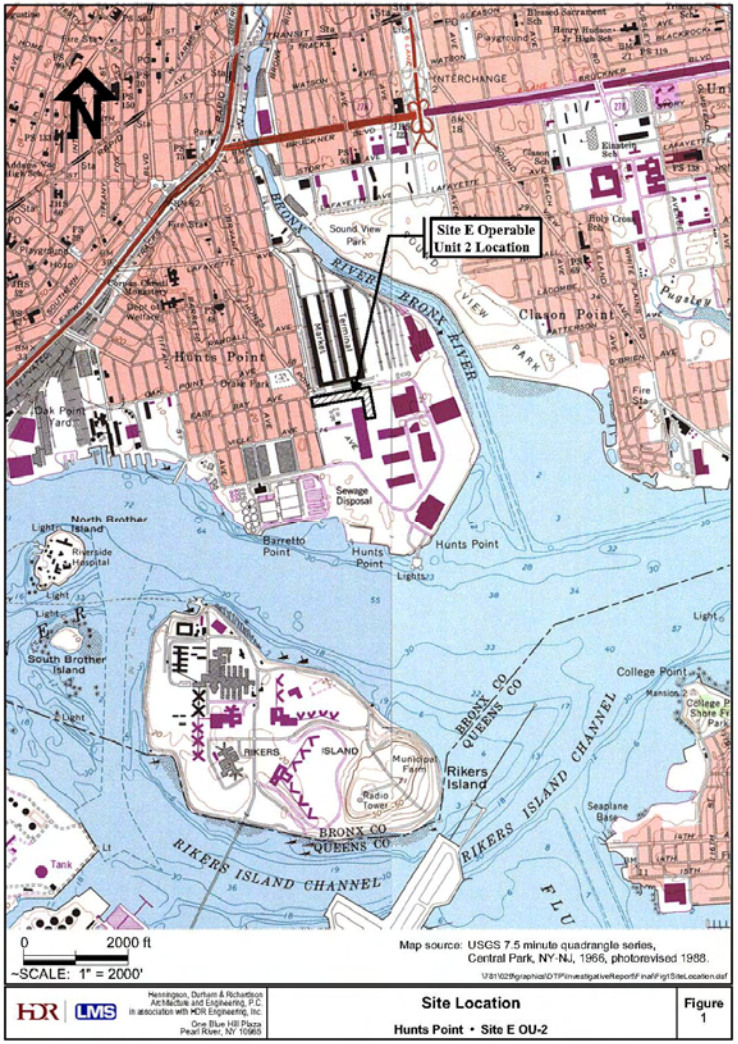
The northernmost section of this piece of E OU 2 lies between the Con Edison compressor site and E OU 1. This area is currently part of an existing right of way for the Iroquois gas pipeline entrance into the Con Edison compressor station. It is surrounded by 8 ft high chain link fences topped with razor wire and the entrance off East Bay Avenue is restricted by an 8 ft high chain link and razor wire topped gate. This area also had material placed on it during site E OU 1 redevelopment but after sampling and analysis, it was determined that some of the material was contaminated with PCBs at a level that required removal and special disposal. The area was delineated and a removal action was performed.

Following the removal and the completion of the Iroquois Gas pipeline project, this entire northerly portion (approximately 200 ft) of Site E OU 2 was paved and surrounded with security fencing, sealing it and, making it completely inaccessible.

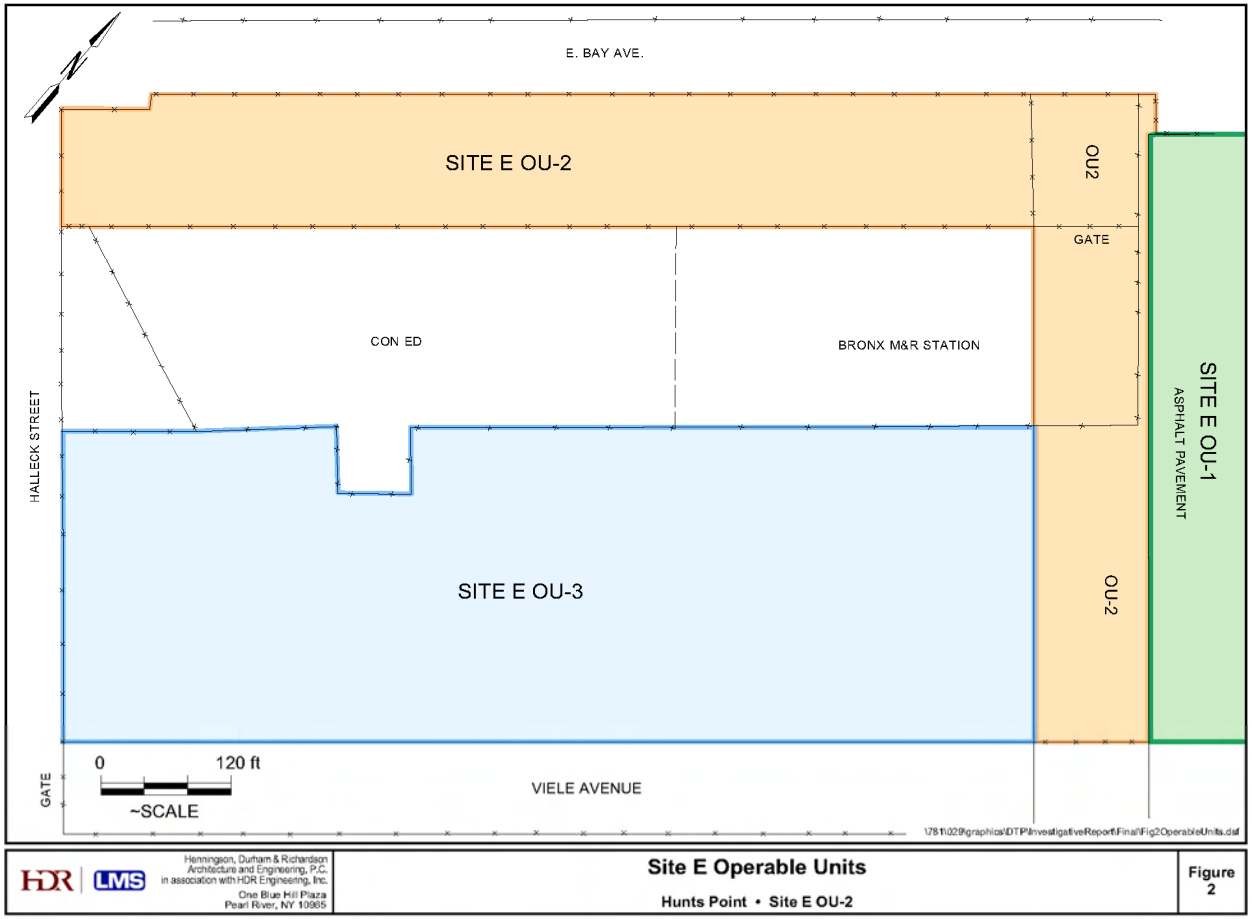
SURROUNDING POPULATION: ( ) Residential **(X) Industrial** ( ) Rural **(X) Urban** **(X) Commercial** ( ) Other:

SITE SPECIFIC HEALTH & SAFETY PLAN
SITE LOCATION PLAN / SITE SKETCH
HDR|LMS

Figure 1 contains the Site Location. Figure 2 contains the Parcel E Operable Unit divisions.



SITE SPECIFIC HEALTH & SAFETY PLAN
SITE LOCATION PLAN / SITE SKETCH
HDR|LMS



Note: The southern portion of Site E OU 2 was previously investigated during the initial site E OU 1 investigation and redevelopment of Site E OU 1. During the redevelopment there were several thousand yards of excess material excavated during the construction of the parking area of E OU 1 and that material was placed on the southern portion of E OU 2. This material was referred to in that report as the "berm". The berm amounted to several thousand yards that was relocated to Site A OU 2 to be used for replacement of material for a pending coal tar removal on Site A OU 2.

SITE SPECIFIC HEALTH & SAFETY PLAN
EMERGENCY CONTACTS & APPROVALS
HDR|LMS

EMERGENCY CONTACTS		**EMERGENCY CONTACTS**	**NAME**	**PHONE**
EPA Region II	(800) 227-8917	Project Manger	Kevin P. McCarty	(845) 735-8300, x223
State EPA Office	(518) 402-8559	Health and Safety Officers	John M. Guzewich Stephanie C. Nakai	(845) 735-8300, x252 (845) 735-8300, x263
Site Telephone	Not Available	State Spill		(845) 256-3000
Poison Control Center	(800) 522-6337	Fire Department		911
Continuum Health Care (Occupational Health Management)	1-800-229-3674 (ext. 440)	Police Department		911
National Response Center	(800) 424-8802	**Number of 24-Hour Ambulance:**		**911**
		Nearest Hospital Emergency Room Number:	St. Barnabus Hospital 1967 Turnbull Avenue Bronx, New York	(718) 409-2633

1. Evacuation Routes will be specified by the HSO and communicated to all personnel on site.
2. Personnel will evacuate under conditions specified by air monitoring or as directed by the HSO.
3. An INCIDENT REPORT form will be completed for all accidents (see Appendix A).

QA REVIEW: _____ Date: _____
HDR|LMS Office Safety Coordinator

HEALTH AND SAFETY PLAN APPROVALS

Project Manager: _____ Date: _____

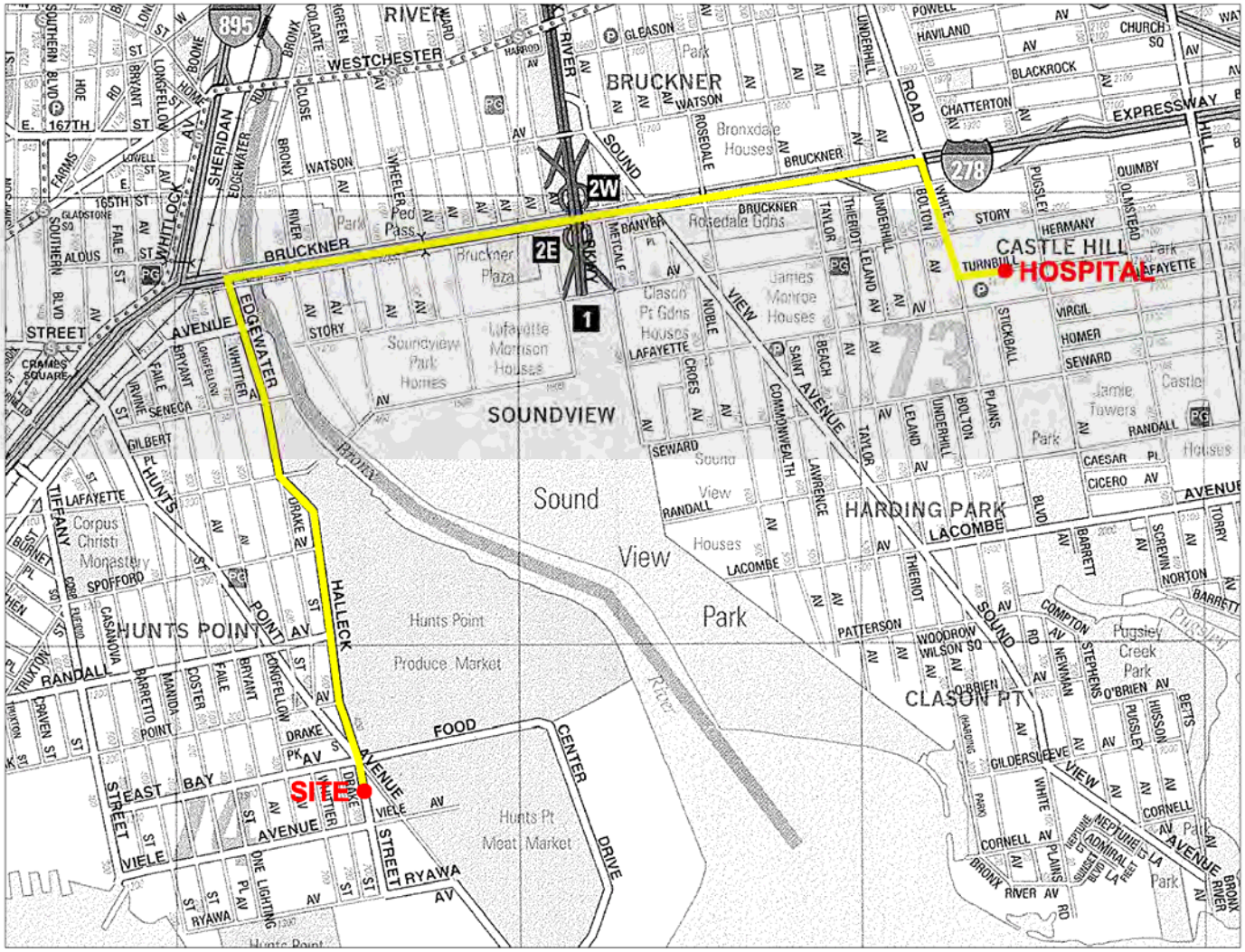
Site Health and Safety Officer _____ Date: _____

Route to Hospital is described on the following page with a map to the hospital on the next page.

SITE SPECIFIC HEALTH & SAFETY PLAN
HOSPITAL MAP ROUTE
HDR|LMS

Directions to St. Barnabus Hospital from the site:

1. Turn right onto Halleck Street
2. Go straight onto Edgewater Road
3. Turn right onto Bruckner Boulevard
4. Take I-278 East/Bruckner Expressway towards the Throgs Neck Bridge
5. Exit at White Plains Road / Castle Hill Avenue
6. Merge onto Bruckner Boulevard
7. Turn right onto White Plains Road
8. Turn left onto Turnbull Avenue.



SITE SPECIFIC HEALTH & SAFETY PLAN
HISTORY AND WASTE CHARACTERIZATION
HDR|LMS

HISTORY: Summarize site specific information below or attach information behind this page.

WASTE TYPES: **(X) Liquid (X) Solid (X) Sludge** ( ) Gas ( ) Unknown ( ) Other specify:

WASTE CHARACTERISTICS: Check as many as applicable.

( ) Corrosive ( ) Flammable ( ) Radioactive

(X) Toxic **(X) Volatile** ( ) Reactive

( ) Inert Gas ( ) Unknown ( ) Other specify:

WORK ZONES: Describe how the Exclusion, Contamination Reduction, and Support Zones will be delineated in terms that on-site personnel will recognize. Work zones will be shown on "WORK ZONE MAP PAGE."

1. Exclusion zone will be considered to be within 20 feet of the sampling location

HAZARDS OF CONCERN: Check as many as applicable.

(X) Heat Stress attach guidelines
( ) Cold Stress attach guidelines
(X) Explosive/Flammable
( ) Oxygen Deficient
( ) Radiological
( ) Biological

(X) Noise
(X) Inorganic Chemicals
(X) Organic Chemicals
(X) Motorized Traffic
(X) Heavy Machinery
(X) Slips, Trips & Falls

(X) Other:
- **First Aid/CPR**
- **Air Monitoring**
- **Personal Protective Equipment**

(X) Other specify: CONFINED SPACES WILL NOT BE ENTERED.
(If confined spaces are to be entered a specific confined space entry plan will be developed)

PRINCIPAL DISPOSAL METHODS AND PRACTICES: Summarize Site Specific Conditions Procedures Below:

All waste generated by Interim Remedial site activities shall be the full responsibility of the subconsultant retained by HDR|LMS.

SITE SPECIFIC HEALTH & SAFETY PLAN
HAZARDOUS MATERIALS SUMMARY
HDR|LMS

HAZARDOUS MATERIAL SUMMARY: Underline and bold waste type and estimate amounts by category (if possible)

CHEMICALS Amounts/Units:	SOLIDS Amounts/Units:	SLUDGES Amounts/Units:	SOLVENTS Amounts/Units:	OILS Amounts/Units:	OTHER Amounts/Units:
Acids	Fly ash	Paint	Halogenated (chloro, bromo) Solvents	**Oily Wastes**	Laboratory
Pickling Liquors	Asbestos	Pigments	**Hydrocarbons**	Gasoline	Pharmaceutical
Caustics	Milling/Mine Tailings	Metal Sludges	Alcohols	Diesel Oil	Hospital
Pesticides	Ferrous Smelter	POTW Sludge	Ketones	Lubricants	Radiological
Dyes/Inks	Non-ferrous Smelter	Aluminum	Esters	**PCBs**	Municipal
Cyanides	**Metals**	Distillation Bottoms	Ethers	**Polynuclear Aromatics**	Construction
Phenols	**Other:**	**Other:**	**Other:**	**Other:**	Munitions
Halogens	**- Solidified Coal Tar**	**- Malleable Coal Tar**	**- VOCs and SVOCs found in GW & soil samples**	**- Site former MGP plant**	Other
Dioxins	**- Coal/Coke Ash/Cinders**				Specify:
Other (Specify):	**- Purifier Waste**				

OVERALL HAZARD EVALUATION: ( ) High **(X) Medium** ( ) Low ( ) Unknown
JUSTIFICATION: Materials and operations on the site pose a moderate threat to site workers.

FIRE/EXPLOSION POTENTIAL: ( ) High ( ) Medium **(X) Low** ( ) Unknown

SITE SPECIFIC HEALTH & SAFETY PLAN
CHEMICAL HAZARD TABLE
HDR|LMS

KNOWN CONTAMINANTS	HIGHEST OBSERVED CONCENTRATION (specify units and media)	PEL/TLV ppm or mg/m^3 (specify)	IDLH ppm or mg/m^3 (specify)	SYMPTOMS/EFFECTS OF ACUTE EXPOSURE	PHOTOIONIZATION POTENTIAL
Benzene	71 ppm(S) (DTP-4 April 2006)	PEL: 1 ppm TLV: 0.5 ppm	500 ppm	Symptoms of acute overexposure include irritation of the eyes, nose, and respiratory tract, breathlessness, euphoria, nausea, drowsiness, headache, dizziness, and intoxication. Severe exposure may lead to convulsions and unconsciousness. Skin contact may cause a drying rash (dermatitis).	9.24
Naphthalene	2,000 ppm (S) (TP-C April 2005)	PEL: 10 ppm TLV: 10 ppm	500 ppm	**Inhalation:** Vapor inhalation causes headache, confusion, nausea, sometimes vomiting, loss of appetite, extensive sweating, dysuria (painful urination), hematuria (blood in the urine), and hemolysis (destruction of red blood cells). **Eye:** Irritation, conjunctivitis, and corneal injury upon prolonged contact. **Skin:** Irritation and hypersensitivity dermatitis. **Ingestion:** Unlikely. However, ingestion causes irritation of the mouth and stomach, hemolytic anemia with hepatic and renal lesions and vesical congestion, kidney failure, hematuria, jaundice, depression of CNS, nausea, vomiting, abdominal pain, blue face, lips, or hands, rapid and difficult breathing, headache, confusion, excitement, malaise, fever, perspiration, urinary tract pain, dizziness, convulsions, coma, and death. Symptoms may appear 2 to 4 hours after exposure.	Insufficient Data

NA = Not Available NE = None Established U = Unknown
S = Soil SW = Surface Water T = Tailings W = Waste SD = Sediment
A = Air GW = Groundwater SL = Sludge D = Drums OFF = Offsite

HAZARD COMMUNICATIONS STANDARD

A notebook containing this Site Specific Health and Safety Plan will be taken to the field with the crew and kept in the vehicle. A current inventory of chemicals to be brought on-site and appropriate MSDSs will accompany these chemicals in the vehicle.

SITE SPECIFIC HEALTH & SAFETY PLAN
TASK DESCRIPTION
HDR|LMS

FIELD ACTIVITIES COVERED UNDER THIS PLAN - **ATTACH ACTIVITY HAZARD ANALYSIS FOR EACH TASK**				HAZARD		
TASK DESCRIPTION/SPECIFIC TECHNIQUE-STANDARD OPERATING PROCEDURES/SITE LOCATION(Attach additional sheets as necessary)	Type	Primary	Contingency	SCHEDULE		
1 Mobilization / Site Preparation	Intrusive	A B C D	A B C D	Hi	Med	**Low**
	Non-intrusive	**Modified D**	**Exit Area**			**X**
2 Interim Remedial Waste Excavation/Stockpiling/Removal Observation	**Intrusive**	A B C D	A B C D	Hi	**Med**	Low
	Non-intrusive	**Modified D**	**Exit Area**		**X**	
3 Interim Remedial Waste Excavation Endpoint Sampling	**Intrusive**	A B C D	A B C D	Hi	**Med**	Low
	Non-intrusive	**Modified D**	**Exit Area**		**X**	
4 Demobilization	Intrusive	A B C D	A B C D	Hi	Med	**Low**
	Non-intrusive	**Modified D**	**Exit Area**			**X**

PERSONNEL AND RESPONSIBILITIES (Include subcontractors) Responsibilities and the reporting organizational structure are described on the following page.

NAME	**PHONE**	**DATE OF LAST TRAINING**	**DATE OF HEALTH CLEARANCE**	**RESPONSIBILITIES**	**ON-SITE? List task numbers**
Kevin P. McCarty	(845) 735-8300, ext. 223	11/12/2004	2002	PROJECT MANAGER	No
John M. Guzewich	(845) 735-8300, ext. 252	01/20/2006	-	HEALTH AND SAFETY OFFICER	No
Stephanie C. Nakai	(845) 735-8300, ext. 263	04/13/2007	08/18/2007	HEALTH AND SAFETY OFFICER, SITE COORDINATOR	Yes, Tasks 1-4

1. Site Safety and Health Personnel.

   The Site Health and Safety Officer (HSO), in conjunction with the Site Coordinator, ensures that the provisions of this HASP are adequate and implemented in the field. The Project Manager is to take all necessary actions to guarantee site safety. Changing field conditions may require decisions to be made concerning adequate protection programs and may require deviations or additions to this HASP. All deviations and/or additions must be documented and approved by the HSO on the DEVIATIONS AND ADDITIONS form, located in Appendix B. Personnel assigned as HSO must be experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120 and this HASP. The HSO is also responsible for conducting site inspections on a regular basis to ensure the effectiveness of this plan.

2. Organizational Structure and Responsibilities.

   Briefly describe the responsibilities of all team members and denote the reporting structure.

   1. Project Manager
   - a. Overall responsibility for project schedule.
   - b. Develop cost estimates for work identified.
   - c. Identify scope of work and estimate schedule for work.
   - d. Determine the technical/field team.
   - e. Will not be on site.

   2. Site Coordinator (reports to "1" when "1" is on-site, otherwise in charge)
   - a. Enforce disciplinary action when unsafe acts or practices occur.
   - b. Grant permission for site access (including visitors, see Appendix C).
   - c. Designate site security.
   - d. Enforce the buddy system.
   - e. Attend all Site pre-entry safety briefings.
   - f. Serve as the facilitator of communications in emergencies.

   3. Site Health and Safety Officer (HSO) (Same as "2")
   - a. Maintain daily field log book and a health and safety file for the project.
   - b. Conduct safety meetings.
   - c. Monitor on-site hazards and conditions.
   - d. Enforce safety procedures.
   - e. Designate facilities, and equipment for health and safety.
   - f. Select, dispense, and ensure availability of Personal Protective Equipment (PPE).
   - g. Maintain copies of instrument operation manuals and maintain records of usage and calibration.
   - h. Periodically inspect PPE and ensure proper storage and maintenance.
   - i. Monitor for heat and cold stress.
   - j. Set up decontamination lines, control decontamination, prepare decontamination solutions, and monitor.
   - k. Train employees on emergency procedures and evacuation routes.
   - l. Control entry and exit at the Access Control Points.
   - m. Confirm an employee's suitability for work based on the physician's recommendation.

   4. Other On-Site Personnel (report to "2")

SITE SPECIFIC HEALTH & SAFETY PLAN
PPE BY TASK
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PROTECTIVE EQUIPMENT: Specify by task. Indicate type and/or material as necessary. Use copies of this sheet if needed.

TASKS: **1** - 2 - 3 - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
( ) Tyvek Coverall:
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - **2** - 3 - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
(x) Tyvek Coverall - OPTIONAL
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - 2 - **3** - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
(x) Tyvek Coverall - OPTIONAL
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - 2 - 3 - **4** **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
( ) Tyvek Coverall:
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

SITE SPECIFIC HEALTH & SAFETY PLAN
AIR MONITORING BY TASK
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MONITORING EQUIPMENT: Specify by task. Indicate type as necessary. Attach additional sheets as necessary.

INSTRUMENT	TASK	ACTION GUIDELINES	COMMENTS (Includes schedules of use)
Combustible Gas Indicator	1 - 2 - 3 - 4	0-10% LEL No explosion hazard 10-25% LEL Potential explosion hazard; notify HSO. >25% LEL Explosion hazard; interrupt task/evacuate 21.0% 02 Oxygen normal <20.5% 02 Oxygen deficient; notify HSO. <19.5% 02 Interrupt task/evacuate	**(X) Not Needed**
Radiation Survey Meter	1 - 2 - 3 - 4	3X Background Notify SHSC >2mR/hr Interrupt task/evacuate	**(X) Not Needed**
Photo ionization Detector ( ) 11.7 ev **(X) 10.2 ev** ( ) 9.8 ev ( ) ___ ev	1 - **2 - 3** - 4	**Specify: If TOTAL VOC's ≥ 5 PPM above background in the breathing zone, sustained for 5 or more minutes, all personnel shall evacuate the site. Contact Project HSO and the site shall be reevaluated after 30 minutes. The HSO will re-enter the site upwind and monitor with the PID. Once the volatile levels are below 1 PPM, work can continue.**	( ) Not Needed
Flame Ionization Detector	1 - 2 - 3 - 4	Specify:	**(X) Not Needed**
Detector Tubes/Monitox	1 - 2 - 3 - 4	Specify:	**(X) Not Needed**
Dust Monitor	1 - **2 - 3** - 4	**Specify: Particulates will be monitored within the work area during intrusive activities. Prior to beginning intrusive work, a background ambient measurement will be collected. If during the work, particulate levels in the work area are 150 ug/m^3 above the background level for a period of fifteen (15) minutes, then downwind perimeter measurements will be collected. If measurements remain 150 ug/m^3 above the background then dust suppression techniques will be employed.**	( ) Not Needed
Other: Specify	1 - 2 - 3 - 4	Specify:	( ) Not Needed

Notes:
1. Personal air samples and area samples taken during unique project activities must be documented on the INDUSTRIAL HYGIENE SAMPLING SHEET (see Appendix D).
2. When area samples are collected for routine project activities, the following information must be recorded in the field log book: date and time; location; air temperature; wind direction and speed; cloud cover and type of precipitation; sampler; instrumentation used; activity being sampled; result; sample duration time; applicable comments.

SITE SPECIFIC HEALTH & SAFETY PLAN
DECONTAMINATION
HDR|LMS

DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, AND SUPPORT ZONES AS PAGE TWO

Personalized Decontamination Summarize below and/or attach diagram; discuss use of work zones. Sampler will wear disposable gloves. No other portion of body should be exposed. Observers will wear disposable PPE. **(X) Not Needed**	Sampling Equipment Decontamination Summarize below and/or attach diagram; discuss use of work zones. For equipment such as spoons, knives, bowls, trowels, hand augers, balers, direct-push samplers and surface water sampling devices (dippers), the following procedures will be used: (1) Initial wash with potable water/alconox soap mixture. Scrub brushes will be used to remove all residual dirt or other debris. (2) Potable water wash to remove all soap residue. (3) Rinse with distilled/deionized water. (4) Wrap decontaminated equipment in plastic or aluminum foil to prevent recontamination. For sampling in areas where free-product petroleum (NAPL) is encountered, the following additional steps will be added between steps 2 and 3 above: 2a) Methanol Rinse 2b) Hexane Rinse 2c) Methanol Rinse For sampling in areas where elevated metal concentrations are a concern, the following additional step will be added between steps 2 and 3 above: 2a) Rinse with diluted (10%) nitric acid (HNO_3). ( ) Not Needed	Heavy Equipment Decontamination Summarize below and/or attach diagram; discuss use of work zones. For equipment such as drill rigs, augers, drill rods, etc. the following procedures will be used: (1) Spray with a hot water/high pressure sprayer (Hotsy) using on-base potable water supply. (2) Stubborn soil or residue may be washed with a potable water/alconox soap mixture. Scrub brushes will be used to remove all residual dirt or other debris. (3) Place decontaminated equipment in a secure location, or wrap in plastic to prevent recontamination ( ) Not Needed
Containment and Disposal Method Disposable PPE will be placed in sealed plastic bags, and disposed of as municipal waste.	Containment and Disposal Method See principal disposal methods and practices.	Containment and Disposal Method See principal disposal methods and practices.

SITE SPECIFIC HEALTH & SAFETY PLAN
WORK ZONE
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THIS PAGE RESERVED FOR MAP (Show Exclusion, Contamination Reduction, and Support Zones. Indicate evacuation and reassembly points.)

To Be Completed On Site.

SITE SPECIFIC HEALTH & SAFETY PLAN
SIGNATURE PAGE
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The following personnel have read and fully understand the contents of this Site Health and Safety Plan and referenced HDR|LMS H&S procedures and further agree to all requirements contained herein. Furthermore, the individuals are fully trained and have required clearances in accordance with HDR|LMS H&S Procedure #20. Attach copies of current HTRW and first aid training, medical clearance, and respiratory fit test records.

Name	Affiliation	Date	Signature

APPENDIX B

HDR|LMS COMMUNITY AIR MONITORING PLAN

(CAMP)

PROJECT SPECIFIC COMMUNITY AIR MONITORING PLAN

For

INTERIM REMEDIAL MEASURES

On behalf of the

New York City Economic Development Corporation

At

OPERABLE UNIT 2 PORTION OF PARCEL E
HUNTS POINT FOOD DISTRIBUTION CENTER
BRONX, NEW YORK
NYSDEC VCP SITE NO. V00681-2

Dates in Effect
June 2007 to June 2008

HDR | LMS
One Blue Hill Plaza, 12th Floor
Pearl River, New York 10965

Project Number
147-000000000040001-001

This Community Air Monitoring Plan (CAMP) is being used for the interim remedial activities to be conducted on behalf of the New York City Economic Development Corporation (NYCEDC) on Operable Unit 2 of Parcel E (Site E OU 2), located in the northwestern portion of the Hunts Point Food Distribution Center at the southeastern corner of Halleck Street and East Bay Avenue, Hunts Point peninsula, Bronx, New York. A CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of a work area when certain activities are in progress at contaminated sites. Continuous monitoring will be required for all ground intrusive activities. For the interim remedial activities being conducted at the site, real-time monitoring for VOCs and background particulate matter at the downwind perimeter of the work area.

Volatile Organic Compound (VOC) Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations shall be measured at the start of each workday and periodically thereafter to establish background concentrations. The monitoring will be conducted using a Minirae 2000 photo-ionization detection (PID), equipped with a 10.2 eV lamp, capable of detecting all site contaminants of concern (COC). The PID shall be calibrated daily. The PID will calculate instantaneous concentrations, which will be compared to the levels specified.

Vapor Emission

If total organic vapors in the work area exceed 5 ppm above background then additional measurements will be collected at the perimeter. If perimeter measurements exceed 5ppm, work activities under the provisions of the Vapor Emissions Response Plan will be performed.

Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will go into effect.

2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

PID readings (detected concentrations, time, date, initials of sampling employee) will be regularly recorded in a field log book. Additional supportive site information shall be recorded if an exceedence above 5 ppm background occurs, such as wind estimation and direction, weather conditions (temperature in degrees Fahrenheit, precipitation, etc.), site activities, possible/likely OVC sources, position of PID when exceedence occurred, etc. All monitoring information shall be available for State (NYSDEC and Department of Health) and federal (OSHA) personnel to review.

Particulate Matter Monitoring, Response Levels, and Actions

Particulates will be monitored within the work area during intrusive activities. Prior to beginning intrusive work, a background ambient measurement will be taken. If during the work, particulate levels in the work area are 150 ug/m^3 greater than the background level for a period of fifteen (15) minutes, then downwind perimeter measurements will be collected. If measurements remain 150 ug/m^3 above the background then dust suppression techniques will be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Generally, open-space background ambient dust levels range from 0.3 mg/m^3 to 0.8 mg/m^3, depending on proximity to exposed soil surfaces, wind speed, recent precipitation, proximity to traffic, farming activities, etc. Even in high winds in agricultural areas, it is rare to exceed background levels above 1.5 mg/m^3. The current occupational inhalation exposure level for nuisance dust (ACGIH TLV) is 10 mg/m^3 as an 8-hour time weighted average (OSHA PEL is 15 mg/m^3).

APPENDIX C

PROJECT SCHEDULE

NOTE:

PROJECT SCHEDULE TO BE SUBMITTED UNDER SEPARATE COVER