COST TO CURE REPORT
MARITIME USE

MOTIVA ENTERPRISES LLC / BUSHWICK CREEK INLET
KENT AVENUE BETWEEN SOUTH SHORELINE OF BUSHWICK CREEK AND QUAY STREET
BLOCK 2590, LOT 25 & 100
BROOKLYN, NEW YORK

DDC PROJECT NO. – BEGS2005027
CONTRACT REGISTRATION NO. 20040028082
TASK 3099

Prepared for:

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

City of New York Department of Design and Construction
Bureau of Environmental and Geotechnical Services
30-30 Thomson Avenue
Fifth Floor
Long Island City, New York 11101

PREPARED BY:

METCALF & EDDY | AECOM

METCALF & EDDY OF NEW YORK, INC.
1140 ROUTE 22 EAST – SUITE 101
BRIDGEWATER, NEW JERSEY 08807

OCTOBER 2006

WOL NOS. 3099-M&E2R-3253, 3099-M&E2R-3515, 3099-M&E2R-3923

Table of Contents

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

On behalf of the City of New York Department of Design & Construction ("DDC"), Metcalf & Eddy of New York, Inc. ("M&E") has prepared this Cost to Cure ("CTC") report for the property owned by Motiva Enterprises LLC (Block 2510, Lot 100), also known as the Bushwick Creek Inlet ("the Site"), located along Kent Avenue (also identified as Franklin Street) between the southern shoreline of the Bushwick Creek and Quay Street in Greenpoint-Williamsburg section of the Borough of Brooklyn, New York (Figure 1). A portion of the Site located along Quay Street is owned by the Greenpoint Monitor Museum (Block 2590, Lot 25). This property was donated to the Greenpoint Monitor Museum by Motiva Enterprises LLC for the future construction of a museum. For the purposes of this report, the Site will refer to both properties.

The purpose of this CTC report is to provide the DDC with an order of magnitude cost estimate to remediate contaminated soil and groundwater that may be encountered as part of the construction of a generic recreational boat launch on the subject property.

This CTC report is based on the findings of the Site Investigation ("SI") report prepared by M&E dated October 2006. The investigation conducted at the Site is representative of the type of environmental investigation that a purchaser would undertake prior to acquiring real property.

This report is divided into the following sections:

- Section 1 - Introduction
- Section 2 – Site Description
- Section 3 – Investigation Activities and Results
- Section 4 – Conceptual Site Development
- Section 5 – Conceptual Remedial Measures
- Section 6 – Remedial Cost Estimate

1.1 Background

Recognized environmental conditions ("RECs") related to historic fill at the site have been identified by several previous investigations of the Site and surrounding area. M&E reviewed a

Phase I Environmental Site Assessment ("ESA") report prepared by Fleming Lee Shue ("FLS") in 2003 for the subject Site and surrounding area prior to conducting the SI. In addition, M&E reviewed an SI Report prepared by TRC dated November 2002 for the Bayside Fuel Oil Company ("BFOC") property located adjacent and south of the Site. M&E also conducted its own SI of the BFOC property on behalf of the DDC. The results of M&E's investigation are presented in a separate document dated October 2006.

A review of the Sanborn Fire Insurance Maps and aerial photographs dating back to 1916 indicate that the inlet of the Site was used for the loading and offloading of petroleum products from the petroleum bulk storage facility. The BFOC property has been developed as a petroleum distillery / bulk oil storage terminal for at least 100 years. Further south of the Site, a former manufactured gas plant ("MGP") was owned and operated by the Brooklyn Union Gas Company. Based upon our review of Sanborn Fire Insurance Maps, the MGP facility appears to have ceased operations sometime during the 1920s or 1930s.

M&E conducted a SI of the property from February 21, 2006 to March 22, 2006. The purpose of the SI, as requested by the New York City Office of Environmental Coordination ("OEC") and DDC was to evaluate the lateral and vertical extent of potential on-site contamination in the subsurface soils and sediment as a result of historic and current on-site and off-site operations for the potential redevelopment of the area.

2.0 SITE DESCRIPTION

2.1 General Physical Setting

The property owner is identified by the City of New York Department of Finance ("DOF") as Motiva Enterprises LLC ("Motiva") on Block 2590, Lot 100. Motiva previously owned Block 2590, Lot 25, but donated the property to the Greenpoint Monitor Museum. This property is located south of the end of Quay Street next to the property occupied by the New York City Transit Authority. For the purposes of this report, both lots are considered part of the Site and are being evaluated for use as a recreational boat launch.

The shoreline topography of the Site ranges from flat to a moderate slope towards the Bushwick Creek. According to the property survey conducted in early 2006 by the DDC, the elevation ranges from 0 to 7 feet above mean sea level ("msl") (see Figure 1). The shoreline of the Site is covered with material including riprap and overgrown vegetation. The Site is bounded by the BFOC property to the south, the East River to the west, Kent Avenue/Franklin Street to the east, and Quay Street to the north. A sewer easement is located along North 12th Street south of the Site that terminates at the East River. Property utilized by the New York City Transit Authority is located north of the inlet and properties located east of the inlet are generally utilized for light commercial operations.

2.2 Geology

Two major stratigraphic units were identified during the SI drilling program which include, in order of increasing depth, fill and native soil. Bedrock was not encountered during this investigation

2.2.1 Fill Material

Based on the findings of the SI performed by M&E, the subsurface consists of a layer of fill material to depths of 11 to 19 feet below ground surface ("bgs"). Fill was encountered in each of the soil boring advanced during the SI. The fill generally consists of sand and silty sand with crushed stone, wood, concrete, ash, cinders, and brick. The thickness of the fill decreases from south to north at the Site.

2.2.2 Native Soils

Along the shoreline of the Site, the fill is underlain by black organic silt ranging in thickness from 4 to 15 feet. The silt has alternating strata of fine sandy silts and silty clays to depths of approximately 60 to 70 feet below grade, at which point a gray to reddish brown stiff silty clay occurs. Within the Site, the organic silt layer extends to a depth of 10 to 26 feet below the mud line which is located approximately 10 to 15 feet below the water line. A layer of sandy silts and silty clays is present under the organic silty layer to depths of 36 to 54 feet below the mud line, at which point reddish brown stiff silty clay occurs.

2.3 Hydrogeology

The Site hydrogeology is discussed in terms of closest surface water body (East River) and the groundwater aquifers located beneath the Site. Based on information obtained from M&E's investigations conducted on the Site and the adjacent BFOC property, groundwater is present at depths ranging from five (5) to nine (9) feet bgs and flows in a northern direction towards the Bushwick Creek and a western direction towards the East River.

3.0 INVESTIGATION ACTIVITIES AND RESULTS

The purpose of the SI as requested by the DDC was for the initial evaluation of the lateral and vertical extent of contamination in subsurface soil and sediment that may exist from the historic and current on-site and off-site operations prior to the proposed redevelopment of the Site.

The investigation was performed in general accordance with New York State Department of Environmental Conservation ("NYSDEC") Draft DER-10 Technical Guidance for Site Investigation and Remediation dated December 2002. The investigation findings were evaluated based on the Technical and Administrative Guidance Memorandum ("TAGM") No. 4046 for Recommended Soil Cleanup Objectives ("RSCOs") and Soil Cleanup Objectives to Protect Groundwater Quality ("SCOPGQs"), and the Spill Technology and Remediation Services ("STARS") Memorandum No.1, Toxicity Characteristic Leachate Procedure ("TCLP") Alternative Guidance Values.

3.1 Summary of Site Investigation Activities

The SI field activities were conducted from February 21, 2006 to March 22, 2006 and consisted of the advancement of soil borings along the shoreline of the Site and the advancement of sediment borings from within Bushwick Creek (Figure 2). Soil and sediment samples were collected from the borings and submitted for laboratory analysis.

The SI field work included:

- Advancement of eight (8) soil borings utilizing a track mounted hollow stem auger drill rig (BC-1 through BC-8);
- Advancement of eleven (11) sediment borings using rotary drilling methods with a drill rig mounted on a barge (BCS-1 through BCS-11);
- Containment of drill cuttings and decontamination water in 55-gallon drums; and,
- Survey of all soil and sediment boring locations.

The following samples were collected from each of these investigation points.

- Eighteen (18) soil samples were collected from eight (8) boring locations advanced along the shoreline of the Site;
- Twenty-two (22) sediment samples were collected from eleven (11) borings advanced within Bushwick Creek; and,
- Three (3) composite soil samples and two (2) water samples were collected from the drill cuttings and groundwater generated during the field program for the purposes of waste classification.

3.2 Results of the Investigation Activities

3.2.1 Soil Borings

The samples collected from borings advanced along the shoreline were compared to the following NYSDEC regulatory standards:

- TAGM No. 4046 RSCO, SCOPGQ; and Eastern U.S. Background Concentrations; and,
- STARS Memo No.1, TCLP Alternative Guidance Values.

The laboratory results of the samples are summarized in Tables 1 through 5 and on Figure 3. The analytical data revealed the following:

- Based on field screening methods and visual observations made during the field drilling program, petroleum odor and contamination was encountered in soil from borings BC-1, BC-2, and BC-3 at depths ranging from 5 feet to 27 feet bgs. These borings were advanced along the southern boundary of the Site adjacent to the BFOC property. Previous environmental investigations conducted at the BFOC identified the presence of petroleum contamination within the soil and groundwater at depths ranging from approximately five (5) to fifty (50) feet bgs;
- Target Compound List ("TCL") Volatile Organic Compounds ("VOCs") consisting of isopropylbenzene, n-propylbenzene, tert-butylbenzene, sec-butylbenzene, n-butylbenzene, and naphthalene were detected in three (3) of the eighteen (18) soil samples collected along the shoreline of the Site at concentrations above the TAGM RSCOs, TAGM

SCOPGQs, and/or STARS TCLP Alternative Guidance Values in borings BC-2, BC-3, and BC-5. These VOCs were encountered at depths ranging from 11 to 19 feet bgs. The elevated concentrations of VOCs detected are likely the result of historical petroleum releases at the BFOC site and possibly from historical releases at the former MGP;

- TCL Semivolatile Organic Compounds ("SVOCs") consisting predominantly of polyaromatic hydrocarbons ("PAHs") were detected in six (6) of the 18 soil samples collected from the shoreline of the Site. These PAHs were encountered at depths ranging from nine (9) to 21 feet bgs, with one sample containing elevated PAHs at a depth of 60 to 62 feet bgs. The concentrations of the SVOCs were detected above the TAGM RSCOs, TAGM SCOPGQs, and/or STARS TCLP Alternative Guidance Values in borings BC-2, BC-3, BC-4 and BC-5. The elevated concentrations of SVOCs are likely the result of historical petroleum releases from the BFOC site and potential historical releases from the former MGP. The concentrations of SVOCs in the remaining soil borings may be attributed to both the previously identified petroleum releases from the BFOC site; however, it is more likely that they are associated with contaminants in historic fill placed at the Site;
- No PCBs were detected in the soil samples above the NYSDEC TAGM criteria;
- Target Analyte List ("TAL") Metals consisting of arsenic, cadmium, chromium, copper, mercury, lead, nickel, and zinc were detected in 16 of the 18 soil samples above NYSDEC RSCO and Eastern U.S. Background criteria in borings BC-1 through BC-8. The metals are likely attributed to contaminants from the historic fill placed at the Site;
- The detections of VOCs and SVOCs above the NYSDEC TAGM and STARS TCLP Alternative Guidance Values indicate that the soil has been impacted by historical petroleum releases from the BFOC facility or is the result of contaminants in historic fill material at the Site which typically contains elevated levels of SVOCs. Though SVOCs were detected in majority of the soil samples, elevated levels of SVOCs were detected in the four (4) borings, BC-2, BC-3, BC-4 and BC-5. Thus, there is a limited potential

exposure risk during construction activities, especially in the areas where elevated concentrations of SVOCs were detected; and,

- A limited exposure risk is also posed by metals such as arsenic, cadmium, chromium, mercury, lead, nickel, and zinc which were detected above the RSCO and Eastern U.S. Background criteria. The presence of these compounds, along with other metals detected below NYSDEC criteria suggests that the source of these metals is from contaminants in historic fill material placed at the Site.

The Site is surrounded by a chain link fence on the northern, southern, and eastern sides and the East River is present on the western side. Since access to the Site is restricted and no subsurface excavation activities are occurring, there are no direct pathways for contact with contaminants by local residents or employees at adjacent sites. Additionally, there are no subsurface structures such as basements present at the Site and therefore, concentrations of VOCs in the soil gas may not pose a concern. Therefore, the current condition of the Site does not appear to a pose a significant health risk for local residents and the employees of neighboring commercial and industrial facilities.

3.2.2 Sediment Borings

The samples collected from the borings advanced within Bushwick Creek were also compared to the NYSDEC TAGM criteria and STARS TCLP Alternative Guidance Values. The laboratory results of the samples are summarized in Tables 6 through 8 and on Figure 4. The results of the sample indicate the following:

- Based on field screening methods and visual observations made during the field drilling program, petroleum odor and contamination was encountered in borings BCS-1, BCS-2, BCS-3, BCS-4, BCS-6, BCS-9, BCS-10, and BCS-11 from depths ranging from approximately 4 to 22 feet below the mud line;
- TCL VOCs consisting of benzene, ethylbenzene, m&p-xylene, o-xylene, isopropylbenzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, sec-butylbenzene, n-butylbenzene, and naphthalene were detected in eight (8) of the 22 samples above either

the TAGM RSCOs, TAGM SCOPGQs, and/or STARS TCLP Alternative Guidance Values in borings BCS-1, BCS-2, BC-3, BCS-5, BCS-6, BCS-8, BCS-9, and BCS-11. The detection of elevated VOCs are likely the result of historical petroleum releases from the BFOC site, although undocumented historic discharges from the former MGP and the industrial uses along the East River may also have impacted the sediments within the creek;

- TCL SVOCs consisting predominantly of PAHs were detected in 11 of the 22 samples above the TAGM RSCOs, TAGM SCOPGQs, and/or STARS TCLP Alternative Guidance Values in borings BCS-1 through BCS-11. The elevated concentrations of SVOCs were detected in the shallow samples collected from each borings at depths ranging from approximately 10 to 26 feet bgs. SVOCs were not detected in any of the deeper samples collected from the creek at depths of approximately 50 to 60 feet bgs. The elevated concentrations of SVOCs are likely the result of petroleum releases from the BFOC and possibly from the former MGP, contaminants in historic fill material used to backfill the creek, surface water runoff containing contaminants entering the creek, and historic impacts due to the industrial operations along the East River;
- No PCBs were detected in sediment samples above the NYSDEC TAGM criteria;
- TAL metals consisting of arsenic, cadmium, chromium, copper, mercury, lead, nickel, selenium, and zinc were detected in all the 22 sediment samples above NYSDEC RSCO and Eastern U.S. Background criteria in borings BCS-1 through BCS-11 collected at the Site. The metals are likely attributed to contaminants in historic fill used placed at the Site as well as undocumented discharges from historic industrial operations along the East River;
- The detection of VOCs and SVOCs above their respective NYSDEC TAGM criteria and/or STARS TCLP Alternative Guidance Values indicates that the majority of the contamination detected in the southern portion of the Site is likely from historical petroleum releases from the BFOC and possibly from the former MGP operations. Additional sources of contamination may include contaminants in historic fill material used

to backfill the area, surface water runoff containing contaminants from the historic fill entering the creek, and undocumented discharges from historic operations along the East River. However, since these contaminants are located underwater, they do not pose a significant health risk for local residents and the employees of neighboring commercial and industrial facilities;

- A limited exposure risk is also posed by metals such as arsenic, cadmium, chromium, mercury, lead, nickel, and zinc which were detected above the NYSDEC TAGM criteria and Eastern U.S. Background criteria. The presence of these metals, along with metals detected below NYSDEC criteria suggests that the source of these metals is likely from contaminants in historic fill used to backfill the area and historic industrial operations along the East River, and;
- Since the samples were collected beneath Bushwick Creek and there are no dredging or excavation activities occurring, the creek does not appear to pose a significant health risk for local residents.

3.3 Conclusions

3.3.1 Soils along the Bushwick Creek Shoreline

The data collected during this SI indicate that while the Site contains contaminated historic fill, there is an area of contamination that is associated with petroleum located along the southern boundary of the Site in the vicinity of soil borings BC-1, BC-2 and BC-3. This area has likely been impacted by historic petroleum releases at BFOC located to the south of the Site.

Based upon the contamination detected in soil borings installed along the southern portion of the Site and the Site's physical setting, three (3) receptors may be impacted as follows:

- Impacts to the surface waters of the Bushwick Creek and the East River;
- Impacts to human receptors from direct dermal contact, ingestion, and inhalation; and,
- Impacts to the groundwater.

The Bushwick Creek and the East River may be impacted through several means of transport including surface water runoff from the Site which could potentially contain contaminated sediments, contaminated fill material carried by the wind, and discharge of contaminated groundwater to these surface water bodies.

Human receptors may be exposed to contaminants via dermal contact and ingestion through swimming or wading in the Bushwick Creek or the East River or through contact with the historic fill by digging or other invasive activities at the Site. Exposure by inhalation of dust blown from contaminated areas also provides an additional path to human receptors.

Since sufficient information was provided in previous environmental investigations and by M&E's investigation at the adjacent BFOC, no monitoring wells were installed at the Site to verify groundwater quality. A significant amount of groundwater data was obtained from the BFOC property to evaluate the quality of groundwater within the Site. Based on the soil and sediment samples collected at the Site, groundwater may be impacted by petroleum contamination along the southern portion of the Site, and metals that were detected throughout the Site.

3.3.2 Sediments Within Bushwick Creek

The detection of contamination along the southern portion of the Site is likely from the historical petroleum releases from the BFOC and possibly from the former MGP operations on property to the south of the Site. Additional sources of contamination may include contaminants in historic fill material used to backfill the area, surface water runoff containing contaminants from the historic fill entering the creek, and undocumented discharges from industrial operations along the East River.

Based upon the contamination detected in sediment borings installed within the eastern and western portion of the Bushwick Creek, two (2) receptors may be impacted as follows:

- Impacts to the surface waters of the Bushwick Creek and the East River; and,
- Impacts to human receptors from direct contact and ingestion.

The Bushwick Creek and the East River may be impacted by contaminants leaching from the subsurface soils and contaminants in groundwater discharging to both surface water bodies.

Human receptors may be exposed to contaminants via dermal contact and ingestion through swimming or wading in the Bushwick Creek and the East River. Contact with contaminated sediments may occur through dredging activity at the Site; however, dredging activities do not occur at the Site.

4.0 CONCEPTUAL SITE DEVELOPMENT

The DDC and the OEC have requested that M&E develop a conceptual site plan associated with the redevelopment of the Site incorporating maritime use. The development of a conceptual site plan will assist M&E in preparing an order of magnitude cost estimate for the remediation of contaminated soil and groundwater that may be encountered should redevelopment of the Site occur.

In order to prepare the conceptual site plan, M&E made the following assumptions based upon information provided by the DDC, OEC, and information collected during the field investigation:

- The area of the Site is approximately 243,200 square feet ("SF"), which consists of approximately 75,500 SF of upland and approximately 167,700 SF of land underwater (as reported by the City of New York Department of Citywide Administrative Services ["DCAS"]). For the purposes of this report, the upland portion of the Site will be mostly impacted by the conceptual development. Limited impacts will likely occur to sediments within the inlet.
- The property is zoned M3-1 heavy manufacturing (per the New York City Department of City Planning ["DCP"]). The City restricts manufacturing operations that may have potentially noxious uses in the M3-1 Zone; however, some commercial operations located along Kent Avenue between North 10th and North 12th Streets are allowed in these zones. Since both the DDC and OEC have directed M&E to develop this CTC report for maritime use, it is assumed that the zoning requirements will be waived should this conceptual design be implemented.
- The Floor Area Ratio in the M3-1 Zone is 2.0 which allows for a maximum of 151,000 SF of floor space to be developed within the 75,500 SF upland portion of the Site. However, since the conceptual plan is for maritime use, only one structure will be proposed for the conceptual plan.

- Due to the configuration of the shoreline property, the presence of the Bushwick Creek, and the adjacent buildings, there are only limited areas of the Site where buildings could potentially be constructed. For the purposes of this report, we have assumed that the northern portion of the Site is suitable for construction.
- Height and setback requirements for residential, commercial, or manufacturing facilities will not be required since conceptual design is for maritime use.
- The topographic map prepared for the Site indicates that the northern portion of the site is classified as an A5 Flood Zone. This means that the area will be inundated by 100 year flooding, for which no base flood elevations ("BFE") have been established. For the purposes of this report, we have assumed that flooding will not exceed four (4) feet above msl.
- Based upon the soil lithology, and depth to groundwater, it is anticipated that any structure constructed on the Site would be built upon a concrete slab at grade, supported by concrete piles (if necessary). Thus, no basement would be constructed and there would be no need for the excavation of soil or dewatering activities to take place. The number and depth of the piles would be determined as part of a final design. However, for the purposes of this report such information is not required.
- The historic fill remaining on-site will be structurally suitable for construction purposes.
- The historic fill remaining on-site will be environmentally suitable for construction purposes based upon the results of the soil samples collected from the Site.
- All subsurface utilities entering the conceptual building would be obtained from the underground utilities located along Kent Avenue and Franklin Street.

Based upon these assumptions, M&E's conceptual site plan for the Site is as follows:

- The Site will be used as a boat launching area to allow privately owned boats to enter the East River.

- The boat launch area is proposed to be located at the end of Quay Street on the property presently owned by the Greenpoint Monitor Museum. The boat launch would occupy approximately 24,000 square feet (SF) and would include a turn-around area for cars with boat trailers to enter and exit the launch. The area would likely be paved with either asphalt or concrete. The ramp would extend approximately 10 feet into the Bushwick Creek and would occupy approximately 1,600 SF within the creek.
- One small support building is proposed for the boat launch and would be located next to the existing property occupied by the New York City Transit Authority. The building would be a simple one story structure occupying approximately 3,200 SF.
- An asphalt open parking lot would comprise of 38,000 SF of the Site. In addition to providing parking for employee and visitors using the boat launch, the parking lot would act as a cap to limit any direct contact of the contaminated fill to employees, visitors, and/or trespassers.
- The remaining portions of the property would be re-vegetated open space, with rip-rap and/or a bulkhead placed along the shoreline of Bushwick Creek. For the purposes of the CTC report, this area would remain as vegetated open space and be capped with a minimum of two (2) feet of certified clean fill.

Figure 5 provides a conceptual site plan for the Site. Please note that this is a simple conceptual design for the development of a generic recreational boat launch based upon the assumptions previously identified. This conceptual design was developed only as a means to evaluate the potential costs to manage contaminated soil and groundwater at the Site should the property be developed. There are numerous other development plans that could be pursued on this Site. However, it is likely that any costs associated with managing contaminated soil and groundwater at the Site would be similar to the costs that M&E has identified in this conceptual plan.

5.0 CONCEPTUAL REMEDIAL MEASURES

The majority of the remedial activities would be associated with excavation and off-site disposal of contaminated historic fill. Based on the findings of the SI report, petroleum contaminated, non-hazardous soil may be present in the southeastern portion of the site. Depth to groundwater ranges from five (5) to nine (9) ft bgs at the Site. Dewatering may be minimal since the conceptual design assumes construction of the boat ramp support building on an at-grade slab. Additionally, excavations for utilities would likely extend less than five (5) ft bgs.

For the purposes of this CTC Report, we have assumed that the entire site will be capped with a minimum of two (2) feet of clean fill or one (1) foot of clean fill/one (1) foot of pavement to act as a barrier to reduce potential employee, visitor, and trespasser contact with contaminated historic fill and petroleum contamination detected in the soil. In order to maintain existing grades for drainage and access purposes, this would result in the excavation of historic fill across some portions of the Site to be redeveloped, and reuse of some of the cut material to bring low lying areas up to developed grade. This will reduce the costs for off-site disposal of the historic fill. Figure 6 provides a generalized site elevation illustrating the present topographic profile of the Site and a profile illustrating the conceptual design.

The conceptual remedial measures have been divided into four (4) construction categories:

- Boat Launch Ramp/Trailer Turnaround Area;
- Site Buildings;
- Parking Area; and
- Open Space.

5.1 Boat Launch Ramp and Trailer Turnaround Area

The boat launch ramp and trailer turnaround area would be located off the end of Quay Street and serve as the main operational area for the Site. This is where automobiles could back their trailer down the ramp in order to unload their boat in the Bushwick Creek. Upon unloading a boat from the trailer, the vehicle and the trailer would park in the proposed parking area located along

Franklin Street/Kent Avenue. In addition, the boat ramp and turnaround area would also serve to cap the historic fill at the Site.

The conceptual boat ramp and turnaround area would be approximately five (5) feet msl. This would require off-site removal and disposal of approximately 1,800 CY of historic fill prior to the construction of the area. The area would be backfilled with 900 CY of imported clean fill and placed in a one (1) foot lift, overlain by six (6) inches of crushed stone and six (6) inches of asphalt and/or concrete. The ramp for the boat launch would extend approximately 10 feet into the Bushwick Creek. It is assumed that approximately 180 cubic yards of sediment and mud will need to be removed prior to the construction of the ramp.

5.2 Support Building

The elevation of the support building would be approximately five (5) to six (6) feet above msl along the northern perimeter of the Site. If the foundations slabs are set at the present elevation, 240 CY of historic fill would need to be removed and replaced with clean fill (Figure 6).

5.3 Parking Area

In addition to providing vehicular parking for those who are using the boat ramp, the parking lot would also serve to cap the historic fill outside the building floor plate. The conceptual parking area for the boat launch ramp would be located along the northern portion of the Site, with the entrance located on Franklin Street. The conceptual design grade of the parking area would be approximately six (6) to eight (8) feet msl. This would require no off-site removal and disposal of historic fill since the elevation of the area would need to be raised in several areas of the conceptual parking lot. To balance the grade in the parking lot, approximately 700 CY of clean fill would be imported and placed in a one (1) foot lift, overlain by six (6) inches of crushed stone and six (6) inches of asphalt.

5.3 Open Space

An area of open space would act as a buffer between the Bushwick Creek, the East River, adjacent areas, and the developed areas of the Site.

The elevation of this area is fairly flat (5 to 6 feet above msl), with the exception of a few feet from the edge of the Bushwick Creek that grades steeply to approximately one (1) ft above msl. It is estimated that that 740 CY of historic and petroleum contaminated fill would be removed from this area for disposal off-site. A two (2) foot layer of clean fill would replace the historic fill in order to maintain the original grade of the area. Subsequent to regarding, appropriate landscaping measures would be taken to stabilize the soil.

5.4 Potential Remedial Concerns

Based upon our experience with similar sites in New York City, the NYSDEC typically will become involved with cases of significant contamination or if there are petroleum spill indicators at the site. Though there is evidence of a historic petroleum discharge in the southeastern portion of the Site, the petroleum discharge appears to be associated with the adjacent property. In other cases, the New York City Department of Environmental Protection ("NYCDEP") may solicit the efforts of the NYSDEC to become involved with construction activities at the Site. NYSDEC may become involved if there is a vapor intrusion issue at the Site, which may be the case, based upon the results of the soil and sediment samples collected during the SI.

For additional costing purposes, the following tasks may be required for the Site.

5.4.1 Agency Interaction

The possibility exists that interaction with the NYSDEC and/or the NYCDEP may be necessary to provide guidance for the proposed re-use of historic fill at the Site or its off-site disposal. Thus, we have assumed a cost for coordinating construction activities with these agencies.

5.4.2 Additional Investigation

It is our opinion that the SI activities conducted at the Site, along with previous investigation activities fulfill the sampling requirements of the NYSDEC and the NYCDEP. However, once specific site plans have been developed for the Site, additional SI activities may be required by NYSDEC, NYCDEP, or the prospective site developer.

5.4.3 Use of Health and Safety Trained Construction Workers

It is likely that excavation and grading activities will require health and safety trained construction workers. Although it is not difficult to locate construction companies that employ such people, the additional cost may be up to 30% above a laborer cost at a typical construction site.

5.4.4 Health and Safety – Dust Monitoring

Due to the presence of contaminated historic fill, there will likely be a need to monitor the amount of dust that is generated during construction activities at the Site. A Community Air-Monitoring Program ("CAMP") is a regulatory requirement that will need to be developed and implemented during construction activities. A CAMP is employed as a result of the presence of contaminants in site soils. Personnel will need to operate and calibrate air monitoring equipment to assess if levels of dust are exceeding the requirements of the CAMP. For the purposes of this report, we have assumed a cost for monitoring dust generated during construction activities.

5.4.5 Vapor Intrusion

Based upon the shallow depth to groundwater, the presence of VOCs and SVOCs detected in the soil samples obtained from the southeastern portion of the Site, and the known history of petroleum contamination migrating from the BFOC property, the NYSDEC and the NYCDEP will likely require measures to be taken to prevent vapor intrusion into the conceptual support building. If a soil vapor intrusion investigation is performed, it should be conducted in accordance with the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006. Any additional costs required to prevent vapor intrusion are dependent upon the actual design of a building to be constructed at the site.

6.0 REMEDIAL COST ESTIMATE

Based upon the conceptual site plan and remedial measures discussed in Sections 4 and 5, the following table summarizes the order of magnitude costs that could be encountered.

BOAT LAUNCH RAMP / TRAILER TURNAROUND AREA					
Environmental Task	**Quantity**	**Unit**	**Unit Cost ($)**	**Extended Cost ($)**	**Comments**
Excavation, Grading, and Loading of Historic Fill (non-hazardous)	2,500	Ton	$20	$50,000	This is for 1,800 cubic yards of historic fill that can't be reused at the site. It assumes 1.4 tons per cubic yard.
Transportation and Disposal of Historic Fill (non-hazardous)	2,500	Ton	$50	$125,000	This is for 1,800 cubic yards of historic fill that can't be reused elsewhere at the Site. It assumes 1.4 tons per cubic yard.
Clean Fill	1,300	Ton	$30	$ 39,000	A 1 foot lift of clean fill will subsequently be covered by crushed stone and asphalt pavement. It is based upon 900 cubic yards at 1.4 tons per cubic yard.
Crushed stone for ramp and turnaround	700	Cubic Yard	No Cost	No Cost	Normal site development would require the construction of the ramp and turnaround area whether or not contaminated historic fill exists.
Asphalt Pavement – 6 inches thick	23,900	Square Yard	No Cost	No Cost	Normal site development would require the construction of the ramp and turnaround area whether or not contaminated historic fill exists.
SUBTOTAL ESTIMATE				**$214,000**	

SUPPORT BUILDING					
Environmental Task	**Quantity**	**Unit**	**Unit Cost ($)**	**Extended Cost ($)**	**Comments**
Excavation, Grading, and Loading of Historic Fill (non-hazardous)	340	Ton	$20	$6,800	This is for 240 cubic yards of historic fill that can't be reused at the site. It assumes 1.4 tons per cubic yard.
Transportation and Disposal of Historic Fill (non-hazardous)	340	Ton	$50	$17,000	This is for 240 cubic yards of historic fill that can't be reused elsewhere at the Site. It assumes 1.4 tons per cubic yard.
Clean Fill	340	Ton	$30	$10,200	This cost is only for the 2 foot cap that would act as a barrier to the historic fill. It is based upon 240 cubic yards at 1.4 tons per cubic yard.
SUBTOTAL ESTIMATE				**$34,000**	
PARKING AREA					
Environmental Task	**Quantity**	**Unit**	**Unit Cost ($)**	**Extended Cost ($)**	**Comments**

Excavation, and Loading of Historic Fill/Non-Hazardous Petroleum Contaminated Soil	None	N/A	N/A	None	Historic fill/petroleum contaminated soil does not have to be removed from this area.
Transportation and Disposal of Historic Fill/Non-Hazardous Petroleum Contaminated Soil	None	N/A	N/A	None	Historic fill/petroleum contaminated soil does not have to be removed from this area.
Clean Fill	980	Ton	$30	$29,400	A 1 foot lift of clean fill will subsequently be covered by crushed stone and asphalt pavement. It is based upon 700 cubic yards at 1.4 tons per cubic yard.
Crushed stone for parking lot base	700	Cubic Yard	No Cost	No Cost	Normal site development would require the construction of a parking lot whether or not contaminated historic fill exists.
Asphalt Pavement – 6 inches thick	4200	Square Yard	No Cost	No Cost	Normal site development would require the construction of a parking lot whether or not contaminated historic fill exists.
SUBTOTAL ESTIMATE				**$29,400**	

OPEN SPACE					
Environmental Task	**Quantity**	**Unit**	**Unit Cost ($)**	**Extended Cost ($)**	**Comments**
Excavation, and Loading of Historic Fill/ Non-Hazardous Petroleum Contaminated Soil	1,040	Ton	$20	$20,800	This is for 740 cubic yards of historic fill/petroleum contaminated soil that can't be reused at the site. It assumes 1.4 tons per cubic yard.
Transportation and Disposal of Historic Fill/Non-Hazardous Petroleum Contaminated Soil	1,040	Ton	$50	$52,000	This is for 740 cubic yards of historic fill/petroleum contaminated soil that can't be reused at the site. It assumes 1.4 tons per cubic yard.
Clean Fill – 2 foot cap	1,040	Ton	$30	$31,200	Clean fill to limit exposure to historic fill.
Landscaping – Hydroseeding	1,200	Square Yard	$0.50	$600	Hydroseeding for grass cover only.
SUBTOTAL ESTIMATE				**$104,600**	

POTENTIAL REMEDIAL CONCERNS					
Environmental Task	**Quantity**	**Unit**	**Unit Cost ($)**	**Extended Cost ($)**	**Comments**
Agency Interaction	1	Lump Sum	$40,000	$40,000	Estimated cost should involvement by the NYSDEC and/or NYCDEP be required.
Additional Investigation	1	Lump Sum	$60,000	$60,000	Estimated cost should the NYSDEC, NYSDEC, or the developer require further investigation based upon site design.
Use of Health & Safety Trained Construction Workers	1	Lump Sum	$125,000	$81,500	This cost is based upon 30% of the costs associated with the excavation and disposal of historic fill.
Health & Safety Dust Monitoring	1	Lump Sum	$80,000	$80,000	Cost estimated for budgeting purposes only.
Vapor Intrusion	3,200	Square Foot	$5.00	$16,000	This cost would only apply if the NYSDEC or the NYCDEP require the installation of a vapor barrier. This may be required at the Site based upon the field and analytical results from the SI.
SUBTOTAL ESTIMATE				**$277,500**	
TOTAL ESTIMATE				**$659,500**	
CONTINGENCY (25% OF TOTAL ESTIMATE)				**$164,900**	
TOTAL ESTIMATED COST TO CURE				**$824,400**	

This conceptual cost to cure estimate is based upon only those activities that would be outside typical construction activities as a result of contaminated historic fill at the Site. The costs are only to be used for budgeting purposes, as discussed with the DDC. Significant differences may arise between the conceptual and actual costs of managing the historic fill depending upon the actual redevelopment scenario.

FIGURES

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS

VOLATILE ORGANIC COMPOUNDS

TABLE 2

SOIL ANALYTICAL RESULTS

SEMI-VOLATILE ORGANIC COMPOUNDS

TABLE 3

SOIL ANALYTICAL RESULTS

POLYCHLORINATED BIPHENYLS

TABLE 4

SOIL ANALYTICAL RESULTS

TARGET ANALYTE LIST METALS

TABLE 5

SEDIMENT ANALYTICAL RESULTS

VOLATILE ORGANIC COMPOUNDS

TABLE 6

SEDIMENT ANALYTICAL RESULTS

SEMI-VOLATILE ORGANIC COMPOUNDS

TABLE 7

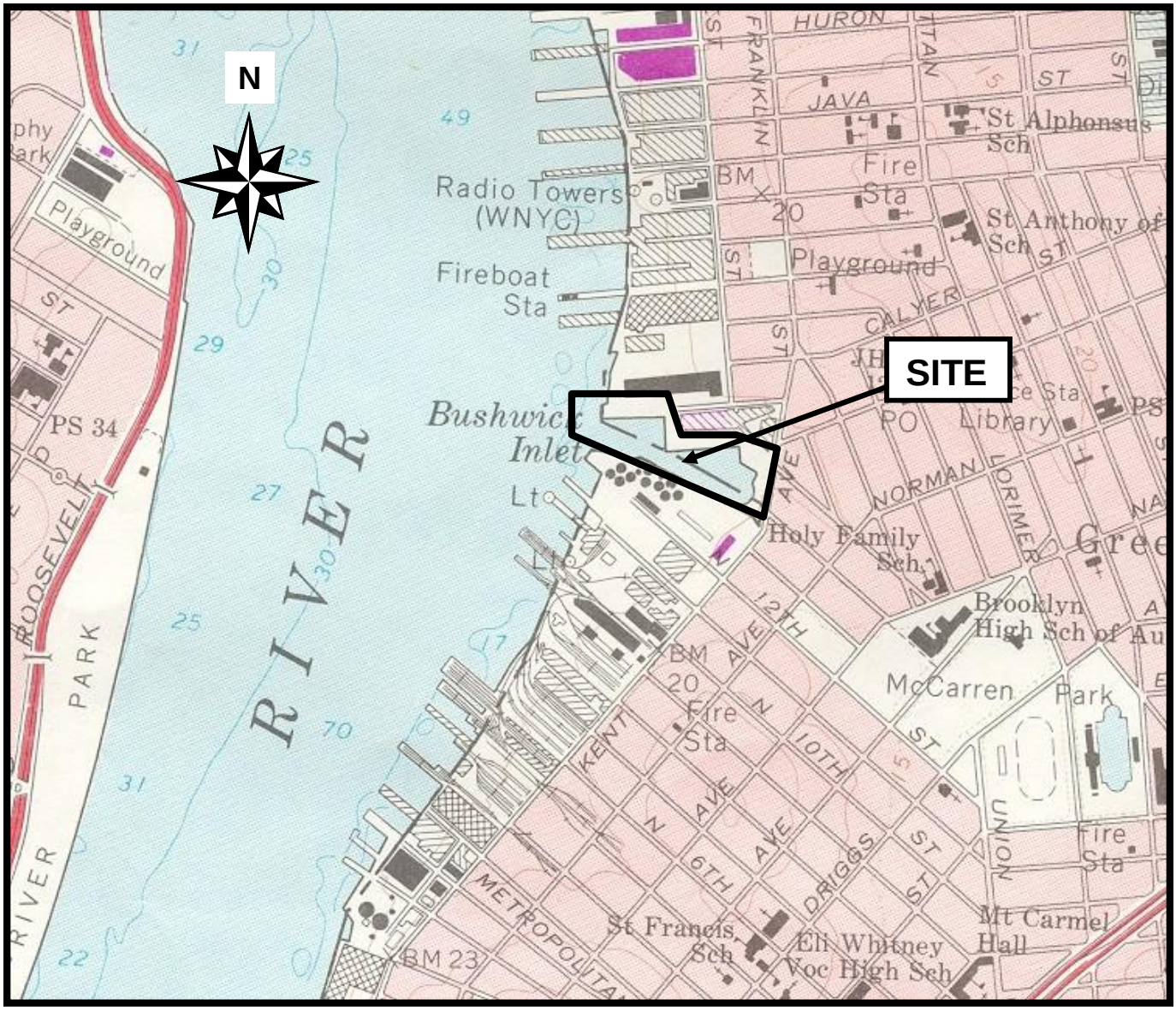
SEDIMENT ANALYTICAL RESULTS

POLYCHLORINATED BIPHENYLS

TABLE 8

SEDIMENT ANALYTICAL RESULTS

TARGET ANALYTE LIST METALS

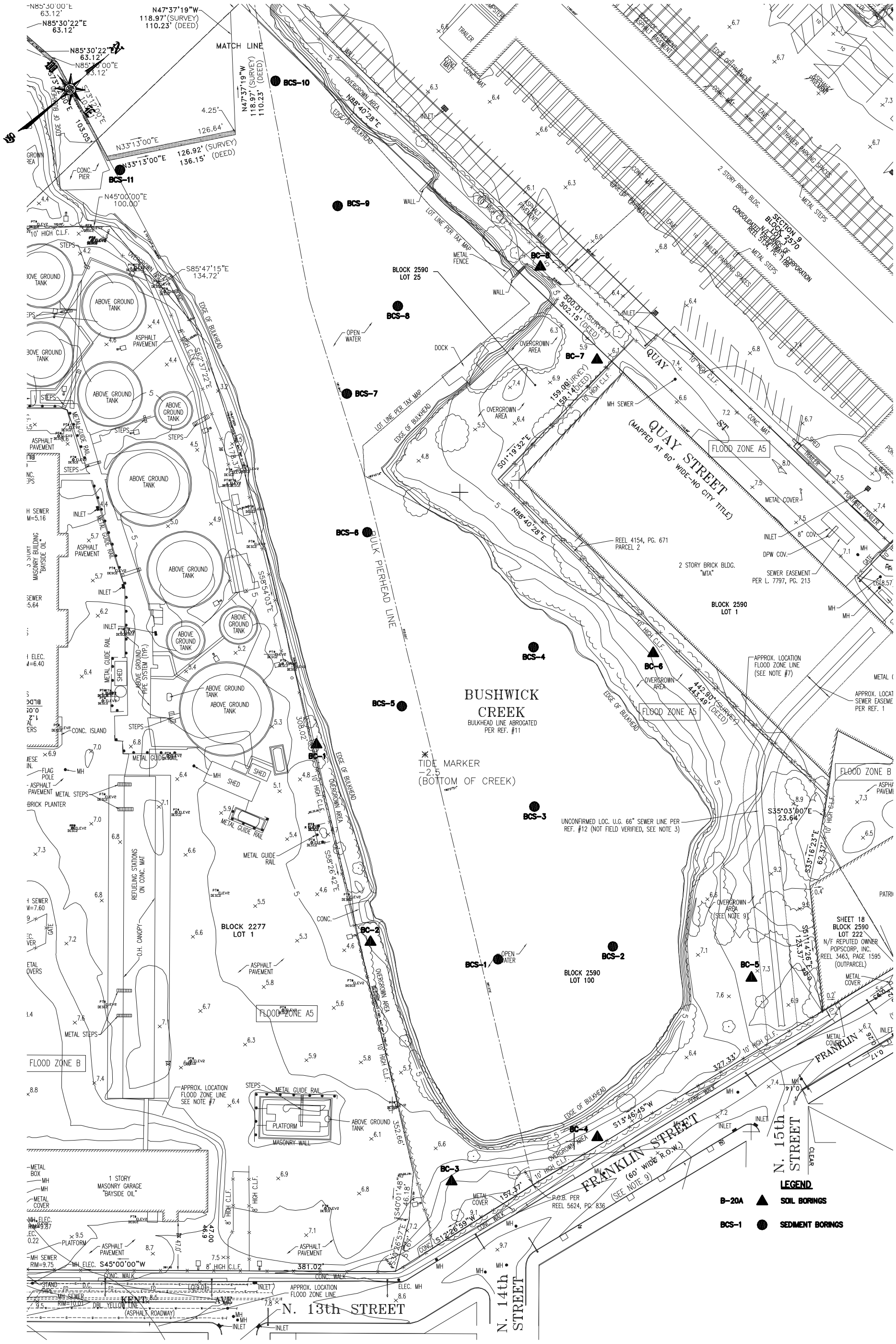


Brooklyn, NY
7.5 Minute U.S.G.S. Quadrangle – 1967, photorevised 1979

METCALF & EDDY | AECOM

WOL NOS. 3099-M&E2R-3252
3099-M&E2R-3515
3099-M&E2R-3923

Figure 1
Site Location Map
Motiva Enterprises LLC/Bushwick Creek Inlet
86 Kent Avenue
Brooklyn, New York



METCALF & EDDY | AECOM

DESIGNED BY:	E. ACS
DRAWN BY:	B.PAPA
DEPT. CHECK:	S.MUSTHYALA
PROJ. CHECK:	N. ABRAMS

SCALE:

0 40 80 120

SCALE IN FEET

SCALE:1"=40'-0"

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION

COST TO CURE REPORT–MARITIME USE

MOTIVA ENTERPRISES LLC/BUSHWICK CREEK INLET, BROOKLYN, N.Y.

SOIL AND SEDIMENT BORING LOCATIONS

WOL NOS. 3099–M&E2R–3253

3099–M&E2R–3515

3099–M&E2R–3923

CIVIL

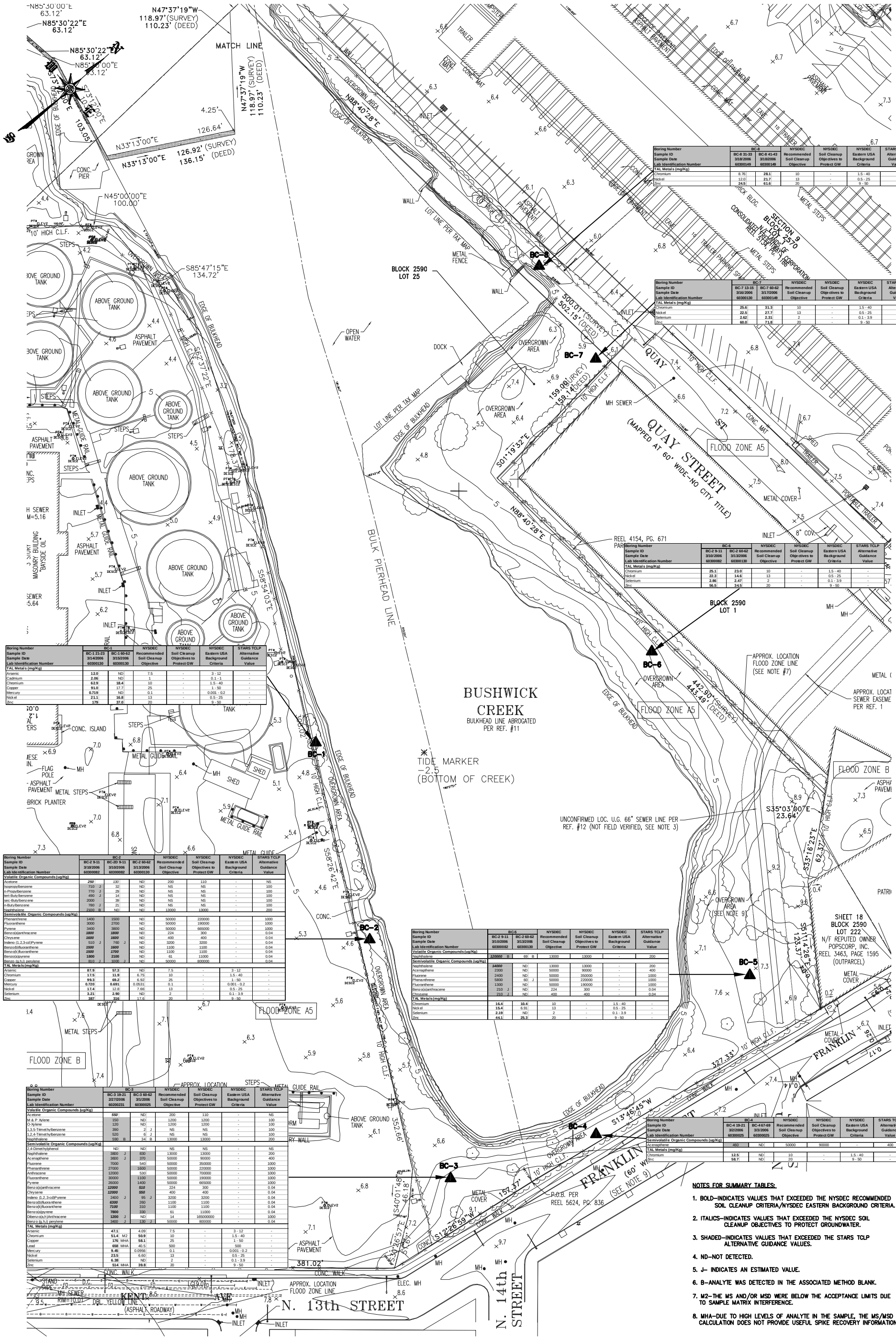
OCTOBER 2006

JOB 60004495

FILE NO.

CAD FILE CZBCCTC2

SHEET FIG.2



Boring Number	BC-8		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-8 31-33	BC-8 41-43	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/18/2006	3/18/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300149	60300149	Objective	Protect GW	Criteria	Value
TAL Metals (mg/Kg)						
Chromium	8.76	**28.1**	10	-	1.5 - 40	-
Nickel	12.0	**21.7**	13	-	0.5 - 25	-
Zinc	**24.5**	**61.6**	20	-	9 - 50	-

Boring Number	BC-7		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-7 13-15	BC-7 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/16/2006	3/17/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300130	60300149	Objective	Protect GW	Criteria	Value
TAL Metals (mg/Kg)						
Chromium	**25.6**	**31.3**	10	-	1.5 - 40	-
Nickel	**22.5**	**27.7**	13	-	0.5 - 25	-
Selenium	**2.62**	**2.31**	2	-	0.1 - 3.9	-
Zinc	**60.0**	**71.8**	20	-	9 - 50	-

Boring Number	BC-1		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-1 21-23	BC-1 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/14/2006	3/15/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300130	60300130	Objective	Protect GW	Criteria	Value
TAL Metals (mg/Kg)						
Arsenic	**12.0**	ND	7.5	-	3 - 12	-
Cadmium	**2.06**	ND	1	-	0.1 - 1	-
Chromium	**62.9**	**18.4**	10	-	1.5 - 40	-
Copper	**91.0**	17.7	25	-	1 - 50	-
Mercury	**0.719**	ND	0.1	-	0.001 - 0.2	-
Nickel	**21.1**	**16.8**	13	-	0.5 - 25	-
Zinc	**179**	**37.0**	20	-	9 - 50	-

Boring Number	BC-2			NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-2 9-11	BC-2D 9-11	BC-2 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/10/2006	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300082	60300082	60300130	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)							
Acetone	***250***	*130*	ND	200	110	-	NS
Isopropylbenzene	710 J	32	ND	NS	NS	-	100
n-Propylbenzene	770 J	29	ND	NS	NS	-	100
tert-Butylbenzene	490 J	14	ND	NS	NS	-	100
sec-Butylbenzene	2000	39	ND	NS	NS	-	100
n-Butylbenzene	780 J	21	ND	NS	NS	-	100
Naphthalene	2100 B	ND	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)							
Phenanthrene	1400	1500	ND	50000	220000	-	1000
Fluoranthene	3400	2700	ND	50000	190000	-	1000
Pyrene	3400	3800	ND	50000	665000	-	1000
Benzo(a)anthracene	***1800***	***1800***	ND	224	300	-	0.04
Chrysene	***1600***	***1600***	ND	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	510 J	760 J	ND	3200	3200	-	0.04
Benzo(b)fluoranthene	***1500***	***1600***	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1500***	***1700***	ND	1100	1100	-	0.04
Benzo(a)pyrene	***1800***	***2100***	ND	61	11000	-	0.04
Benzo (a,h,i) perylene	810 J	1000 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)							
Arsenic	**87.9**	**57.3**	ND	7.5	-	3 - 12	-
Chromium	**17.5**	**11.9**	6.75	10	-	1.5 - 40	-
Copper	**99.3**	**69.2**	6.92	25	-	1 - 50	-
Mercury	**0.720**	**0.691**	0.0531	0.1	-	0.001 - 0.2	-
Nickel	**17.4**	12.8	7.66	13	-	0.5 - 25	-
Selenium	**3.21**	**2.90**	ND	2	-	0.1 - 3.9	-
Zinc	**387**	**316**	17.6	20	-	9 - 50	-

Boring Number	BC-6		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-2 9-11	BC-2 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300082	60300130	Objective	Protect GW	Criteria	Value
TAL Metals (mg/Kg)						
Chromium	**25.1**	**23.0**	10	-	1.5 - 40	-
Nickel	**22.3**	**14.6**	13	-	0.5 - 25	-
Selenium	**2.86**	**2.47**	2	-	0.1 - 3.9	-
Zinc	**56.5**	**34.5**	20	-	9 - 50	-

Boring Number	BC-5		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-2 9-11	BC-2 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300082	60300130	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Naphthalene	***120000*** B	69 B	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
Naphthalene	***14000***	ND	13000	13000	-	200
Acenaphthene	2300	ND	50000	90000	-	400
Fluorene	2400	ND	50000	350000	-	1000
Phenanthrene	5800	60 J	50000	220000	-	1000
Fluoranthene	1300	ND	50000	190000	-	1000
Benzo(a)anthracene	210 J	ND	224	300	-	0.04
Chrysene	210 J	ND	400	400	-	0.04
TAL Metals (mg/Kg)						
Chromium	**16.4**	**10.4**	10	-	1.5 - 40	-
Nickel	**15.4**	6.91	13	-	0.5 - 25	-
Selenium	**2.19**	ND	2	-	0.1 - 3.9	-
Zinc	**44.1**	**25.3**	20	-	9 - 50	-

Boring Number	BC-3		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-3 19-21	BC-3 60-62	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	2/27/2006	3/1/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60200231	60300025	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***550***	ND	200	110	-	NS
M & P Xylene	150	ND	1200	1200	-	100
O-Xylene	120	ND	1200	1200	-	100
1,3,5-Trimethylbenzene	390	2 J	NS	NS	-	100
1,2,4-Trimethylbenzene	520	6 J	NS	NS	-	100
Naphthalene	590 B	34 B	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
2,4-Dimethylphenol	ND	ND	NS	NS	-	NS
Naphthalene	3800 J	830	13000	13000	-	200
Acenaphthene	3600 J	370	50000	90000	-	400
Fluorene	7000	540	50000	350000	-	1000
Phenanthrene	27000	1600	50000	220000	-	1000
Anthracene	12000	530	50000	700000	-	1000
Fluoranthene	30000	1100	50000	190000	-	1000
Pyrene	26000	1400	50000	665000	-	1000
Benzo(a)anthracene	***12000***	***510***	224	300	-	0.04
Chrysene	***12000***	***550***	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	2400 J	95 J	3200	3200	-	0.04
Benzo(b)fluoranthene	***6300***	260	1100	1100	-	0.04
Benzo(k)fluoranthene	***7100***	310	1100	1100	-	0.04
Benzo(a)pyrene	***7800***	330	61	11000	-	0.04
Dibenz(a,h)Anthracene	**1200** J	ND	14	165000000	-	1000
Benzo (g,h,i) perylene	3400 J	130 J	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**47.1**	4.09	7.5	-	3 - 12	-
Chromium	**51.4** M2	**50.9**	10	-	1.5 - 40	-
Copper	**176** MHA	**58.1**	25	-	1 - 50	-
Lead	**658** MHA	40.5	500	-	500	-
Mercury	**9.45**	0.0956	0.1	-	0.001 - 0.2	-
Nickel	**23.5**	6.60	13	-	0.5 - 25	-
Selenium	**6.38**	ND	2	-	0.1 - 3.9	-
Zinc	**514** MHA	**39.8**	20	-	9 - 50	-

Boring Number	BC-4		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-4 19-21	BC-4 67-69	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/2/2006	3/3/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300025	60300025	Objective	Protect GW	Criteria	Value
Semivolatile Organic Compounds (ug/Kg)						
Acenaphthene	460	ND	50000	90000	-	400
TAL Metals (mg/Kg)						
Chromium	**12.5**	ND	10	-	1.5 - 40	-
Zinc	**58.7**	ND	20	-	9 - 50	-

NOTES FOR SUMMARY TABLES:

1. BOLD—INDICATES VALUES THAT EXCEEDED THE NYSDEC RECOMMENDED SOIL CLEANUP CRITERIA/NYSDEC EASTERN BACKGROUND CRITERIA.
2. ITALICS—INDICATES VALUES THAT EXCEEDED THE NYSDEC SOIL CLEANUP OBJECTIVES TO PROTECT GROUNDWATER.
3. SHADED—INDICATES VALUES THAT EXCEEDED THE STARS TCLP ALTERNATIVE GUIDANCE VALUES.
4. ND—NOT DETECTED.
5. J- INDICATES AN ESTIMATED VALUE.
6. B—ANALYTE WAS DETECTED IN THE ASSOCIATED METHOD BLANK.
7. M2—THE MS AND/OR MSD WERE BELOW THE ACCEPTANCE LIMITS DUE TO SAMPLE MATRIX INTERFERENCE.
8. MHA—DUE TO HIGH LEVELS OF ANALYTE IN THE SAMPLE, THE MS/MSD CALCULATION DOES NOT PROVIDE USEFUL SPIKE RECOVERY INFORMATION.

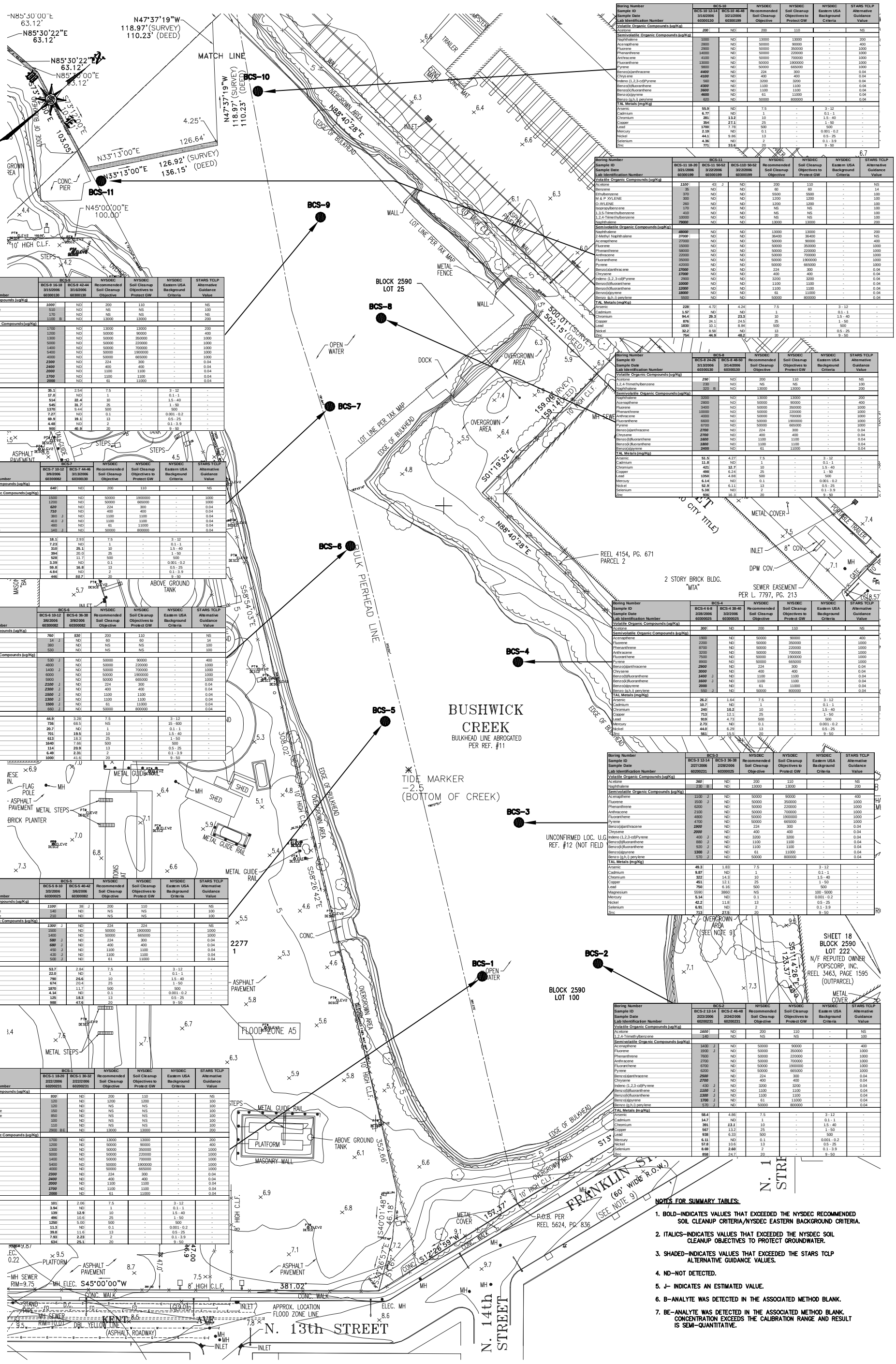
METCALF & EDDY | AECOM

DESIGNED BY: E. ACS
DRAWN BY: B.PAPA
DEPT. CHECK: S.MUSTHYALA
PROJ. CHECK: N. ABRAMS

SCALE: 0 40 80 120 SCALE IN FEET
SCALE:1"=40'-0"

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
COST TO CURE REPORT—MARITIME USE
MOTIVA ENTERPRISES LLC/BUSHWICK CREEK INLET, BROOKLYN, N.Y.
SITE MAP WITH SOIL SAMPLE RESULTS
WOL NOS. 3099-M&E2R-3253
3099-M&E2R-3515
3099-M&E2R-3923
CIVIL
OCTOBER 2006

JOB 60004495
FILE NO.
CAD FILE CZBCCTC3
SHEET FIG.3



Boring Number	BCS-10		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-10 12-14	BCS-10 46-48	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/16/2006	3/21/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300130	60300199	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***200***	ND	200	110	-	NS
Semivolatile Organic Compounds (ug/Kg)						
Naphthalene	1000	ND	13000	13000	-	200
Acenapthene	2800	ND	50000	90000	-	400
Fluorene	2900	ND	50000	350000	-	1000
Phenanthrene	14000	ND	50000	220000	-	1000
Anthracene	4100	ND	50000	700000	-	1000
Fluoranthene	13000	ND	50000	1900000	-	1000
Pyrene	9800	ND	50000	665000	-	1000
Benzo(a)anthracene	***4400***	ND	224	300	-	0.04
Chrysene	***4100***	ND	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	560	ND	3200	3200	-	0.04
Benzo(b)fluoranthene	***4300***	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***3600***	ND	1100	1100	-	0.04
Benzo(a)pyrene	***4600***	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	620	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**55.9**	ND	7.5	-	3 - 12	-
Cadmium	**6.77**	ND	1	-	0.1 - 1	-
Chromium	**281**	**13.2**	10	-	1.5 - 40	-
Copper	**354**	**27.1**	25	-	1 - 50	-
Lead	**1700**	7.78	500	-	500	-
Mercury	**2.19**	ND	0.1	-	0.001 - 0.2	-
Nickel	**44.1**	9.86	13	-	0.5 - 25	-
Selenium	**4.36**	ND	2	-	0.1 - 3.9	-
Zinc	**771**	**33.6**	20	-	9 - 50	-

Boring Number	BCS-11			NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-11 18-20	BCS-11 50-52	BCS-11D 50-52	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/21/2006	3/22/2006	3/22/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300199	60300199	60300199	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)							
Acetone	***1100***	43 J	ND	200	110	-	NS
Benzene	35	ND	ND	60	60	-	14
Ethylbenzene	370	ND	ND	5500	5500	-	100
M & P XYLENE	300	ND	ND	1200	1200	-	100
O-XYLENE	260	ND	ND	1200	1200	-	100
Isopropylbenzene	170	ND	ND	NS	NS	-	100
1,3,5-Trimethylbenzene	410	ND	ND	NS	NS	-	100
1,2,4-Trimethylbenzene	10000	ND	ND	NS	NS	-	100
Naphthalene	***79000***	ND	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)							
Naphthalene	***48000***	ND	ND	13000	13000	-	200
2-Methyl Naphthalene	***37000***	ND	ND	36400	36400	-	NS
Acenapthene	27000	ND	ND	50000	90000	-	400
Fluorene	15000	ND	ND	50000	350000	-	1000
Phenanthrene	58000	ND	ND	50000	220000	-	1000
Anthracene	22000	ND	ND	50000	700000	-	1000
Fluoranthene	35000	ND	ND	50000	1900000	-	1000
Pyrene	42000	ND	ND	50000	665000	-	1000
Benzo(a)anthracene	***17000***	ND	ND	224	300	-	0.04
Chrysene	***17000***	ND	ND	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	2900	ND	ND	3200	3200	-	0.04
Benzo(b)fluoranthene	***10000***	ND	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***12000***	ND	ND	1100	1100	-	0.04
Benzo(a)pyrene	***18000***	ND	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	5500	ND	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)							
Arsenic	**228**	4.72	4.24	7.5	-	3 - 12	-
Cadmium	**1.57**	ND	ND	1	-	0.1 - 1	-
Chromium	**94.4**	**29.3**	**23.3**	10	-	1.5 - 40	-
Copper	**876**	24.1	24.5	25	-	1 - 50	-
Lead	**1830**	10.1	8.84	500	-	500	-
Nickel	**32.2**	8.98	ND	13	-	0.5 - 25	-
Zinc	**754**	**44.9**	**48.2**	20	-	9 - 50	-

Boring Number	BCS-8		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-8 24-26	BCS-8 48-50	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/13/2006	3/14/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300130	60300130	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***290***	ND	200	110	-	NS
1,2,4-Trimethylbenzene	230	ND	NS	NS	-	100
Naphthalene	320 B	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
Naphthalene	3200	ND	13000	13000	-	200
Acenapthene	2800	ND	50000	90000	-	400
Fluorene	3400	ND	50000	350000	-	1000
Phenanthrene	10000	ND	50000	220000	-	1000
Anthracene	4000	ND	50000	700000	-	1000
Fluoranthene	6600	ND	50000	1900000	-	1000
Pyrene	6700	ND	50000	665000	-	1000
Benzo(a)anthracene	***2700***	ND	224	300	-	0.04
Chrysene	***2700***	ND	400	400	-	0.04
Benzo(b)fluoranthene	***1600***	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1800***	ND	1100	1100	-	0.04
Benzo(a)pyrene	**2400**	ND	61	11000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**51.5**	4.27	7.5	-	3 - 12	-
Cadmium	**11.8**	ND	1	-	0.1 - 1	-
Chromium	**421**	**12.7**	10	-	1.5 - 40	-
Copper	**498**	6.24	25	-	1 - 50	-
Lead	**1350**	4.88	500	-	500	-
Mercury	**6.14**	ND	0.1	-	0.001 - 0.2	-
Nickel	**52.9**	6.11	13	-	0.5 - 25	-
Selenium	**5.38**	ND	2	-	0.1 - 3.9	-
Zinc	**936**	16.3	20	-	9 - 50	-

Boring Number	BCS-9		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-9 16-18	BCS-9 42-44	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/15/2006	3/16/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300130	60300130	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***1000***	ND	200	110	-	NS
1,2,4-Trimethylbenzene	510	ND	NS	NS	-	100
4-Isopropyltoluene	170	ND	NS	NS	-	NS
Naphthalene	1100 B	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
Naphthalene	1700	ND	13000	13000	-	200
Acenapthene	1200	ND	50000	90000	-	400
Fluorene	1300	ND	50000	350000	-	1000
Phenanthrene	5000	ND	50000	220000	-	1000
Anthracene	1400	ND	50000	700000	-	1000
Fluoranthene	5400	ND	50000	1900000	-	1000
Pyrene	4000	ND	50000	665000	-	1000
Benzo(a)anthracene	***2300***	ND	224	300	-	0.04
Chrysene	***2400***	ND	400	400	-	0.04
Benzo(b)fluoranthene	***2000***	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1700***	ND	1100	1100	-	0.04
Benzo(a)pyrene	**2000**	ND	61	11000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**35.1**	2.54	7.5	-	3 - 12	-
Cadmium	**17.0**	ND	1	-	0.1 - 1	-
Chromium	**514**	**22.4**	10	-	1.5 - 40	-
Copper	**545**	**31.7**	25	-	1 - 50	-
Lead	**1370**	9.44	500	-	500	-
Mercury	**7.27**	ND	0.1	-	0.001 - 0.2	-
Nickel	**69.9**	**19.1**	13	-	0.5 - 25	-
Selenium	**4.48**	ND	2	-	0.1 - 3.9	-
Zinc	**900**	**40.9**	20	-	9 - 50	-

Boring Number	BCS-7		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-7 10-12	BCS-7 44-46	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/9/2006	3/13/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300082	60300130	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***640***	ND	200	110	-	NS
Semivolatile Organic Compounds (ug/Kg)						
Fluoranthene	1500	ND	50000	1900000	-	1000
Pyrene	1200	ND	50000	665000	-	1000
Benzo(a)anthracene	***620***	ND	224	300	-	0.04
Chrysene	***710***	ND	400	400	-	0.04
Benzo(b)fluoranthene	380 J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	410 J	ND	1100	1100	-	0.04
Benzo(a)pyrene	480	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	140 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**18.1**	2.93	7.5	-	3 - 12	-
Cadmium	**7.23**	ND	1	-	0.1 - 1	-
Chromium	**310**	**25.1**	10	-	1.5 - 40	-
Copper	**394**	20.0	25	-	1 - 50	-
Lead	**528**	11.7	500	-	500	-
Mercury	**3.39**	ND	0.1	-	0.001 - 0.2	-
Nickel	**59.8**	**16.8**	13	-	0.5 - 25	-
Selenium	**4.84**	ND	2	-	0.1 - 3.9	-
Zinc	**446**	**50.7**	20	-	9 - 50	-

Boring Number	BCS-6		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-6 10-12	BCS-6 36-38	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/6/2006	3/9/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300082	60300082	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***760***	***530***	200	110	-	NS
Benzene	14 J	ND	60	60	-	14
1,3,5-Trimethylbenzene	380	ND	NS	NS	-	100
1,2,4-Trimethylbenzene	530	ND	NS	NS	-	100
Semivolatile Organic Compounds (ug/Kg)						
Acenapthene	530 J	ND	50000	90000	-	400
Phenanthrene	4800	ND	50000	220000	-	1000
Anthracene	1400 J	ND	50000	700000	-	1000
Fluoranthene	6000	ND	50000	1900000	-	1000
Pyrene	5900	ND	50000	665000	-	1000
Benzo(a)anthracene	***2100*** J	ND	224	300	-	0.04
Chrysene	***2300*** J	ND	400	400	-	0.04
Benzo(b)fluoranthene	***1500*** J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1300*** J	ND	1100	1100	-	0.04
Benzo(a)pyrene	**1500** J	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	660 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**44.9**	3.28	7.5	-	3 - 12	-
Barium	**736**	68.5	NS	-	15 - 600	-
Cadmium	**20.7**	ND	1	-	0.1 - 1	-
Chromium	**701**	**19.5**	10	-	1.5 - 40	-
Copper	**613**	18.3	25	-	1 - 50	-
Lead	**1640**	7.66	500	-	500	-
Nickel	**114**	**20.9**	13	-	0.5 - 25	-
Selenium	**6.49**	**2.31**	2	-	0.1 - 3.9	-
Zinc	**1000**	41.6	20	-	9 - 50	-

Boring Number	BCS-5		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-5 8-10	BCS-5 40-42	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300025	60300082	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***1100***	38 J	200	110	-	NS
1,3,5-Trimethylbenzene	140	ND	NS	NS	-	100
1,2,4-Trimethylbenzene	210	ND	NS	NS	-	100
Semivolatile Organic Compounds (ug/Kg)						
3&4-Methyl Phenol	***1300*** J	ND	224	224	-	NS
Fluoranthene	1500	ND	50000	1900000	-	1000
Pyrene	1400	ND	50000	665000	-	1000
Benzo(a)anthracene	***580*** J	ND	224	300	-	0.04
Chrysene	***680*** J	ND	400	400	-	0.04
Benzo(b)fluoranthene	450 J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	420 J	ND	1100	1100	-	0.04
Benzo(a)pyrene	500 J	ND	61	11000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**53.7**	2.84	7.5	-	3 - 12	-
Cadmium	**22.0**	ND	1	-	0.1 - 1	-
Chromium	**790**	**26.6**	10	-	1.5 - 40	-
Copper	**674**	20.4	25	-	1 - 50	-
Lead	**1870**	11.7	500	-	500	-
Mercury	**4.14**	ND	0.1	-	0.001 - 0.2	-
Nickel	**125**	**18.3**	13	-	0.5 - 25	-
Zinc	**988**	**47.6**	20	-	9 - 50	-

Boring Number	BCS-4		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-4 6-8	BCS-4 38-40	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	2/28/2006	3/2/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60300025	60300025	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***300***	ND	200	110	-	NS
Semivolatile Organic Compounds (ug/Kg)						
Acenapthene	1900	ND	50000	90000	-	400
Fluorene	2200	ND	50000	350000	-	1000
Phenanthrene	8700	ND	50000	220000	-	1000
Anthracene	3200	ND	50000	700000	-	1000
Fluoranthene	7500	ND	50000	1900000	-	1000
Pyrene	8900	ND	50000	665000	-	1000
Benzo(a)anthracene	***2900***	ND	224	300	-	0.04
Chrysene	***3000***	ND	400	400	-	0.04
Benzo(b)fluoranthene	***1400*** J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1600*** J	ND	1100	1100	-	0.04
Benzo(a)pyrene	**2000**	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	550 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**26.2**	1.64	7.5	-	3 - 12	-
Cadmium	**10.7**	ND	1	-	0.1 - 1	-
Chromium	**240**	**10.2**	10	-	1.5 - 40	-
Copper	**713**	12.1	25	-	1 - 50	-
Lead	**919**	4.73	500	-	500	-
Mercury	**2.73**	ND	0.1	-	0.001 - 0.2	-
Nickel	**44.0**	6.29	13	-	0.5 - 25	-
Zinc	**561**	15.5	20	-	9 - 50	-

Boring Number	BCS-3		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-3 12-14	BCS-3 36-38	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	2/27/2006	2/28/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60200231	60300025	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***360***	ND	200	110	-	NS
Naphthalene	230 B	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
Acenapthene	1100 J	ND	50000	90000	-	400
Fluorene	1500 J	ND	50000	350000	-	1000
Phenanthrene	6200	ND	50000	220000	-	1000
Anthracene	2100	ND	50000	700000	-	1000
Fluoranthene	4800	ND	50000	1900000	-	1000
Pyrene	4700	ND	50000	665000	-	1000
Benzo(a)anthracene	***1800***	ND	224	300	-	0.04
Chrysene	***2000***	ND	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	400 J	ND	3200	3200	-	0.04
Benzo(b)fluoranthene	880 J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	920 J	ND	1100	1100	-	0.04
Benzo(a)pyrene	**1300** J	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	570 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**49.3**	1.83	7.5	-	3 - 12	-
Cadmium	**9.87**	ND	1	-	0.1 - 1	-
Chromium	**322**	14.3	10	-	1.5 - 40	-
Copper	**451**	12.1	25	-	1 - 50	-
Lead	**750**	6.16	500	-	500	-
Magnesium	5590	3860	NS	-	100 - 5000	-
Mercury	**5.14**	ND	0.1	-	0.001 - 0.2	-
Nickel	**42.2**	11.8	13	-	0.5 - 25	-
Selenium	**6.91**	ND	2	-	0.1 - 3.9	-
Zinc	**713**	**27.5**	20	-	9 - 50	-

Boring Number	BCS-2		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-2 12-14	BCS-2 46-48	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	2/23/2006	2/24/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60200231	60200231	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***1600***	ND	200	110	-	NS
1,2,4-Trimethylbenzene	140	ND	NS	NS	-	100
Semivolatile Organic Compounds (ug/Kg)						
Acenapthene	1400 J	ND	50000	90000	-	400
Fluorene	1900 J	ND	50000	350000	-	1000
Phenanthrene	7600	ND	50000	220000	-	1000
Anthracene	2700	ND	50000	700000	-	1000
Fluoranthene	6700	ND	50000	1900000	-	1000
Pyrene	6200	ND	50000	665000	-	1000
Benzo(a)anthracene	***2500***	ND	224	300	-	0.04
Chrysene	***2700***	ND	400	400	-	0.04
Indeno (1,2,3-cd)Pyrene	430 J	ND	3200	3200	-	0.04
Benzo(b)fluoranthene	***1100*** J	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1300*** J	ND	1100	1100	-	0.04
Benzo(a)pyrene	**1700** J	ND	61	11000	-	0.04
Benzo (g,h,i) perylene	570 J	ND	50000	800000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**58.4**	4.86	7.5	-	3 - 12	-
Cadmium	**14.7**	ND	1	-	0.1 - 1	-
Chromium	**391**	**13.1**	10	-	1.5 - 40	-
Copper	**567**	13.2	25	-	1 - 50	-
Lead	**938**	6.33	500	-	500	-
Mercury	**6.11**	ND	0.1	-	0.001 - 0.2	-
Nickel	**57.8**	10.6	13	-	0.5 - 25	-
Selenium	**8.69**	**2.60**	2	-	0.1 - 3.9	-
Zinc	**858**	24.7	20	-	9 - 50	-

Boring Number	BCS-1		NYSDEC	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-1 18-20	BCS-1 30-32	Recommended	Soil Cleanup	Eastern USA	Alternative
Sample Date	2/22/2006	2/22/2006	Soil Cleanup	Objectives to	Background	Guidance
Lab Identification Number	60200231	60200231	Objective	Protect GW	Criteria	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***930***	ND	200	110	-	NS
O-XYLENE	120	ND	1200	1200	-	100
Isopropylbenzene	120	ND	NS	NS	-	100
1,3,5-Trimethylbenzene	150	ND	NS	NS	-	100
1,2,4-Trimethylbenzene	850	ND	NS	NS	-	100
sec-Butylbenzene	100	ND	NS	NS	-	100
n-Butylbenzene	110	ND	NS	NS	-	100
Naphthalene	2900 BE	ND	13000	13000	-	200
Semivolatile Organic Compounds (ug/Kg)						
Naphthalene	1700	ND	13000	13000	-	200
Acenapthene	1200	ND	50000	90000	-	400
Fluorene	1300	ND	50000	350000	-	1000
Phenanthrene	5000	ND	50000	220000	-	1000
Anthracene	1400	ND	50000	700000	-	1000
Fluoranthene	5400	ND	50000	1900000	-	1000
Pyrene	4000	ND	50000	665000	-	1000
Benzo(a)anthracene	***2300***	ND	224	300	-	0.04
Chrysene	***2400***	ND	400	400	-	0.04
Benzo(b)fluoranthene	***2000***	ND	1100	1100	-	0.04
Benzo(k)fluoranthene	***1700***	ND	1100	1100	-	0.04
Benzo(a)pyrene	**2000**	ND	61	11000	-	0.04
TAL Metals (mg/Kg)						
Arsenic	**101**	2.06	7.5	-	3 - 12	-
Cadmium	**3.94**	ND	1	-	0.1 - 1	-
Chromium	**139**	**12.9**	10	-	1.5 - 40	-
Copper	**496**	10.6	25	-	1 - 50	-
Lead	**1250**	5.00	500	-	500	-
Mercury	**11.3**	ND	0.1	-	0.001 - 0.2	-
Nickel	**39.8**	11.6	13	-	0.5 - 25	-
Selenium	**7.93**	**2.23**	2	-	0.1 - 3.9	-
Zinc	**634**	**25.1**	20	-	9 - 50	-

NOTES FOR SUMMARY TABLES:

1. BOLD—INDICATES VALUES THAT EXCEEDED THE NYSDEC RECOMMENDED SOIL CLEANUP CRITERIA/NYSDEC EASTERN BACKGROUND CRITERIA.
2. ITALICS—INDICATES VALUES THAT EXCEEDED THE NYSDEC SOIL CLEANUP OBJECTIVES TO PROTECT GROUNDWATER.
3. SHADED—INDICATES VALUES THAT EXCEEDED THE STARS TCLP ALTERNATIVE GUIDANCE VALUES.
4. ND—NOT DETECTED.
5. J— INDICATES AN ESTIMATED VALUE.
6. B—ANALYTE WAS DETECTED IN THE ASSOCIATED METHOD BLANK.
7. BE—ANALYTE WAS DETECTED IN THE ASSOCIATED METHOD BLANK. CONCENTRATION EXCEEDS THE CALIBRATION RANGE AND RESULT IS SEMI-QUANTITATIVE.

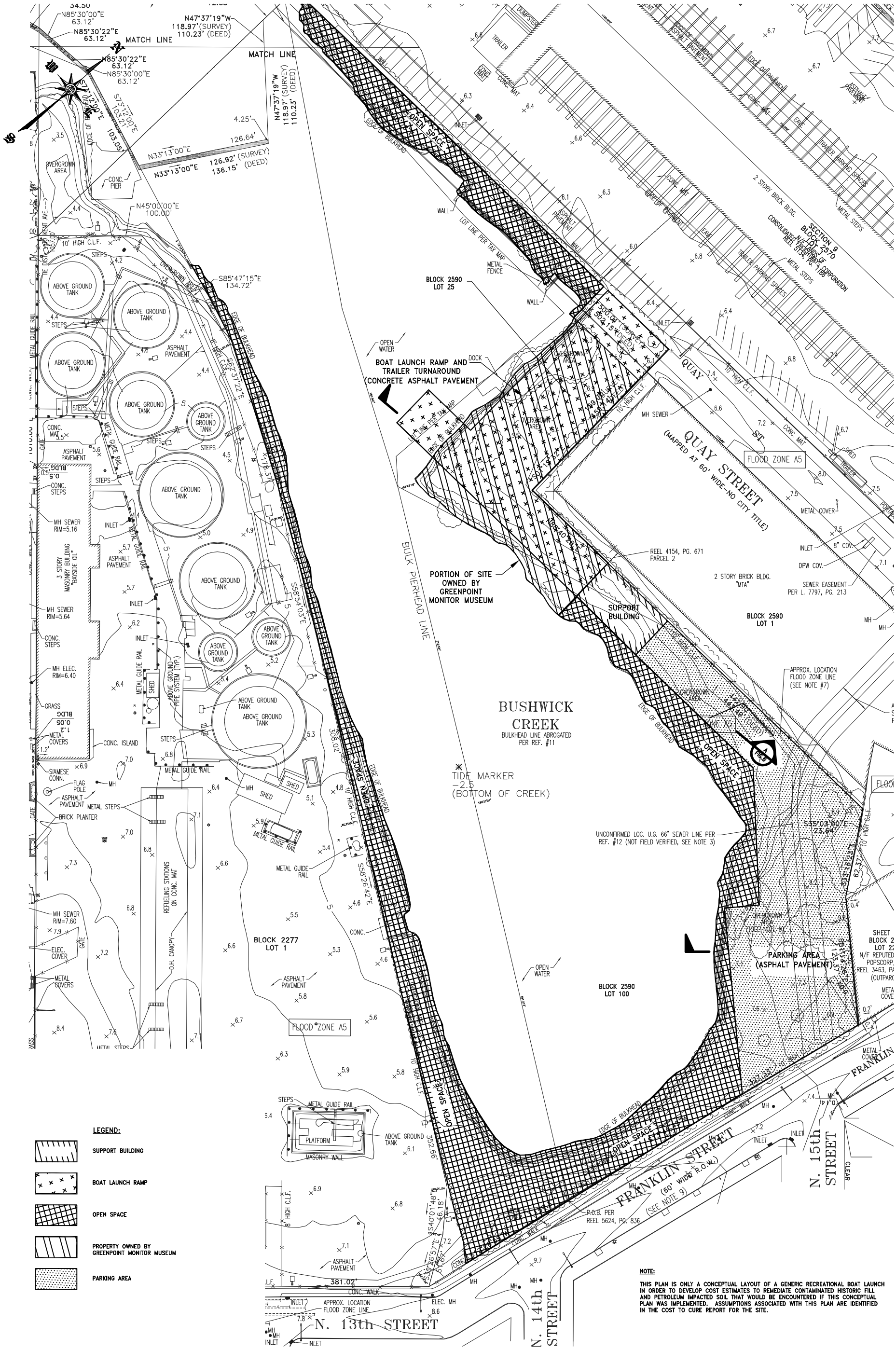
METCALF & EDDY | AECOM

DESIGNED BY: E/. ACS
DRAWN BY: B.PAPA
DEPT. CHECK: S.MUSTHYALA
PROJ. CHECK: N. ABRAMS

SCALE:
0 40 80 120
SCALE IN FEET
SCALE:1"=40'-0"

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
COST TO CURE REPORT—MARITIME USE
MOTIVA ENTERPRISES LLC/BUSHWICK CREEK INLET, BROOKLYN, N.Y.
SITE MAP WITH SEDIMENT SAMPLE RESULTS
WOL NOS. 3099-M&E2R-3253
3099-M&E2R-3515
3099-M&E2R-3923
CIVIL
OCTOBER 2006

JOB 60004495
FILE NO.
CAD FILE CZBCCTC4
SHEET FIG.4



NOTE:

THIS PLAN IS ONLY A CONCEPTUAL LAYOUT OF A GENERIC RECREATIONAL BOAT LAUNCH IN ORDER TO DEVELOP COST ESTIMATES TO REMEDIATE CONTAMINATED HISTORIC FILL AND PETROLEUM IMPACTED SOIL THAT WOULD BE ENCOUNTERED IF THIS CONCEPTUAL PLAN WAS IMPLEMENTED. ASSUMPTIONS ASSOCIATED WITH THIS PLAN ARE IDENTIFIED IN THE COST TO CURE REPORT FOR THE SITE.

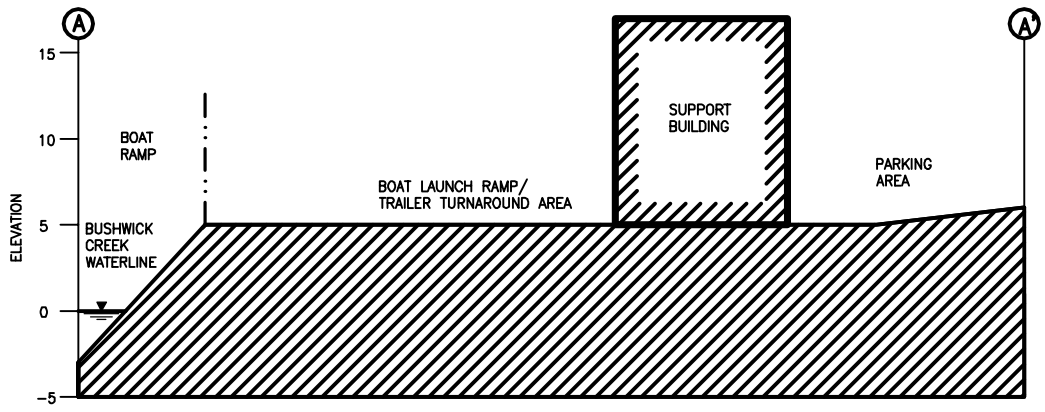
METCALF & EDDY | AECOM

DESIGNED BY: E. ACS
DRAWN BY: B.PAPA
DEPT. CHECK: S.MUSTHYALA
PROJ. CHECK: N. ABRAMS

SCALE:
0 40 80 120
SCALE IN FEET
SCALE:1"=40'-0"

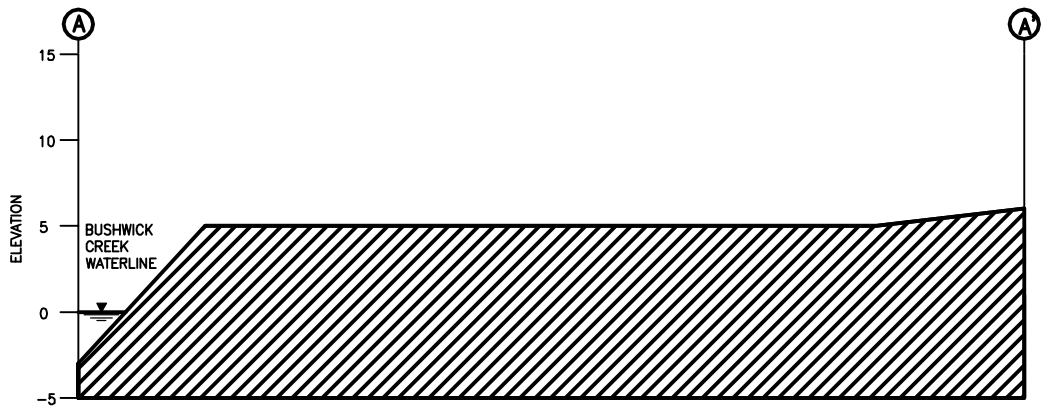
NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
COST TO CURE REPORT–MARITIME USE
MOTIVA ENTERPRISES LLC/BUSHWICK CREEK INLET, BROOKLYN, N.Y.
CONCEPTUAL SITE PLAN
WOL NOS. 3099–M&E2R–3253
3099–M&E2R–3515
3099–M&E2R–3923
CIVIL
OCTOBER 2006

JOB 60004495
FILE NO.
CAD FILE CZBCCTC5
SHEET FIG.5



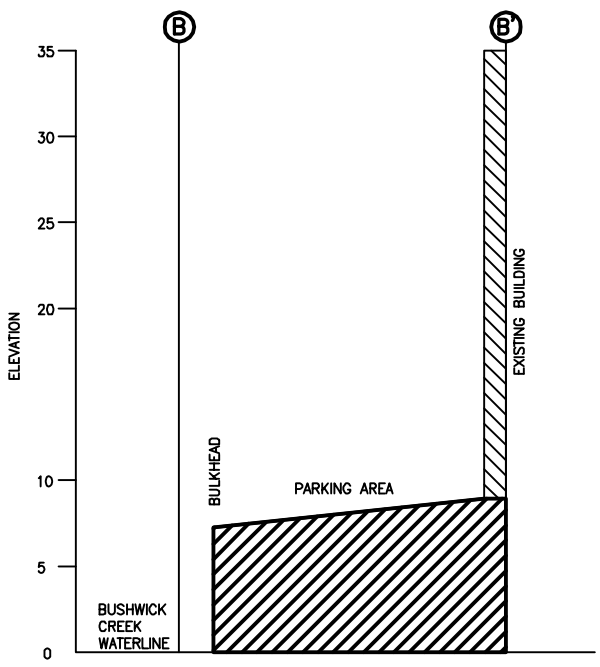
CONCEPTUAL SITE PROFILE
CROSS SECTION A-A'

HORIZONTAL 1"=40'
VERTICAL 1"=5'



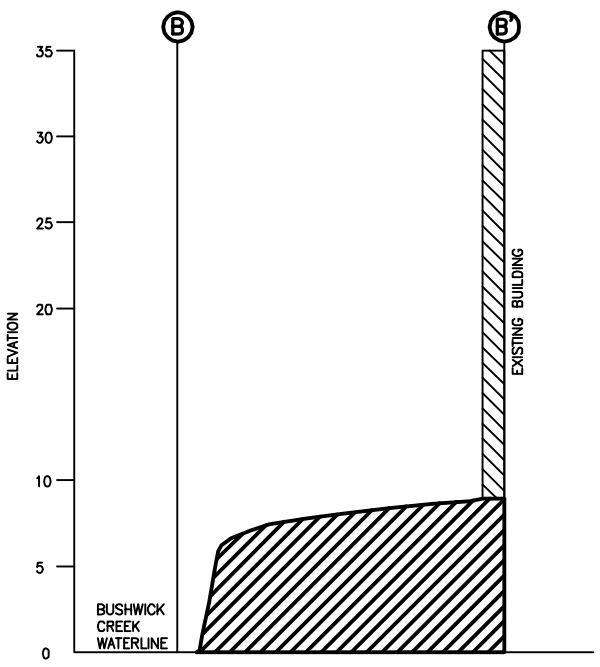
PRESENT TOPOGRAPHIC PROFILE
CROSS SECTION A-A'

HORIZONTAL 1"=40'
VERTICAL 1"=5'



CONCEPTUAL SITE PROFILE
CROSS SECTION B-B'

HORIZONTAL 1"=40'
VERTICAL 1"=5'



PRESENT TOPOGRAPHIC PROFILE
CROSS SECTION B-B'

HORIZONTAL 1"=40'
VERTICAL 1"=5'

METCALF & EDDY | AECOM

DESIGNED BY: S. MUSTHYALA
DRAWN BY: B. PAPA
DEPT. CHECK: S. MUSTHYALA
PROJ. CHECK: N. ABRAMS

SCALE: AS NOTED

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
COST TO CURE REPORT–MARITIME USE
MOTIVA ENTERPRISES LLC/BUSHWICK CREEK INLET, BROOKLYN, N.Y.
GENERALIZED SITE ELEVATIONS
WOL NOS. 3099-M&E2R-3253
3099-M&E2R-3515
3099-M&E2R-3923
CIVIL
OCTOBER 2006

JOB 60004495
FILE NO.
CAD FILE CZBCCTC6
SHEET FIG. 6

Table 1
Summary of Analytical Results - Soil
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-1	BC-1	BC-2	BC-2	BC-2	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-1 21-23	BC-1 60-62	BC-2 9-11	BC-2D 9-11	BC-2 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/14/2006	3/15/2006	3/10/2006	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300130	60300130	60300082	60300082	60300130	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	ND	ND	***250***	*130*	ND	200	110	NS
Carbon Disulfide	ND	ND	67	ND	ND	2700	2700	NS
Toluene	ND	ND	ND	ND	ND	1500	1500	100
2-Hexanone	ND	ND	ND	ND	ND	10000	10000	NS
Ethylbenzene	ND	ND	ND	4 J	ND	5500	5500	100
M & P Xylene	ND	ND	ND	16 J	ND	1200	1200	100
O-Xylene	ND	ND	ND	5 J	ND	1200	1200	100
Styrene	ND	ND	ND	ND	ND	10000	10000	NS
Isopropylbenzene	ND	ND	710 J	32	ND	2300	2300	100
n-Propylbenzene	ND	ND	770 J	29	ND	3700	3700	100
1,3,5-Trimethylbenzene	ND	ND	ND	8 J	ND	3300	3300	100
tert-Butylbenzene	ND	ND	490 J	14	ND	10000	11000	100
1,2,4-Trimethylbenzene	ND	ND	13	51	ND	10000	13000	100
sec-Butylbenzene	ND	ND	2000	39	ND	10000	11000	100
4-Isopropyltoluene	ND	ND	750 J	ND	ND	10000	10000	NS
n-Butylbenzene	ND	ND	780 J	21	ND	10000	12000	100
Naphthalene	ND	ND	2100 B	ND	ND	13000	13000	200

Table 1
Summary of Analytical Results - Soil
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-3	BC-3	BC-4	BC-4	BC-5	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-3 19-21	BC-3 60-62	BC-4 19-21	BC-4 67-69	BC-5 17-19	Recommended	Soil Cleanup	Alternative
Sample Date	2/27/2006	3/1/2006	3/2/2006	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60200231	60300025	60300025	60300025	60300082	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	***550***	ND	ND	ND	74	200	110	NS
Carbon Disulfide	ND	ND	ND	ND	ND	2700	2700	NS
Toluene	ND	ND	ND	ND	2 J	1500	1500	100
2-Hexanone	ND	ND	ND	ND	ND	10000	10000	NS
Ethylbenzene	36	ND	ND	ND	6 J	5500	5500	100
M & P Xylene	150	ND	ND	ND	16 J	1200	1200	100
O-Xylene	120	ND	ND	ND	10 J	1200	1200	100
Styrene	ND	ND	ND	ND	3 J	10000	10000	NS
Isopropylbenzene	35	ND	ND	ND	2 J	2300	2300	100
n-Propylbenzene	30	ND	ND	ND	ND	3700	3700	100
1,3,5-Trimethylbenzene	390	2 J	ND	ND	19	3300	3300	100
tert-Butylbenzene	ND	ND	ND	ND	ND	10000	11000	100
1,2,4-Trimethylbenzene	520	6 J	ND	ND	41	10000	13000	100
sec-Butylbenzene	ND	ND	ND	ND	ND	10000	11000	100
4-Isopropyltoluene	140	3 J	ND	ND	9 J	10000	10000	NS
n-Butylbenzene	16 J	ND	ND	ND	ND	10000	12000	100
Naphthalene	590 B	34 B	ND	ND	***120000*** B	13000	13000	200

Table 1
Summary of Analytical Results - Soil
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-5	BC-6	BC-6	BC-7	BC-7	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-5 55-57	BC-6 19-21	BC-6 60-62	BC-7 13-15	BC-7 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/7/2006	3/8/2006	3/9/2006	3/16/2006	3/17/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300082	60300082	60300082	60300130	60300149	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	ND	ND	ND	ND J	ND	200	110	NS
Carbon Disulfide	ND	ND	ND	ND	ND	2700	2700	NS
Toluene	ND	ND	ND	ND	ND	1500	1500	100
2-Hexanone	ND	ND	47	ND	ND	10000	10000	NS
Ethylbenzene	ND	ND	ND	ND	ND	5500	5500	100
M & P Xylene	ND	ND	ND	ND	5 J	1200	1200	100
O-Xylene	ND	ND	ND	ND	ND	1200	1200	100
Styrene	ND	ND	ND	ND	ND	10000	10000	NS
Isopropylbenzene	ND	ND	ND	ND	ND	2300	2300	100
n-Propylbenzene	ND	ND	ND	ND	ND	3700	3700	100
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	3300	3300	100
tert-Butylbenzene	ND	ND	ND	ND	ND	10000	11000	100
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	10000	13000	100
sec-Butylbenzene	ND	ND	ND	ND	ND	10000	11000	100
4-Isopropyltoluene	ND	ND	ND	ND	ND	10000	10000	NS
n-Butylbenzene	ND	ND	ND	ND	ND	10000	12000	100
Naphthalene	69 B	ND	ND	ND	ND	13000	13000	200

Table 1
Summary of Analytical Results - Soil
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-8		BC-8	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-8 31-33		BC-8 41-43	Recommended	Soil Cleanup	Alternative
Sample Date	3/18/2006		3/18/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300149		60300149	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)						
Acetone	ND		ND	200	110	NS
Carbon Disulfide	ND		ND	2700	2700	NS
Toluene	ND		ND	1500	1500	100
2-Hexanone	ND		ND	10000	10000	NS
Ethylbenzene	ND		ND	5500	5500	100
M & P Xylene	4	J	ND	1200	1200	100
O-Xylene	ND		ND	1200	1200	100
Styrene	ND		ND	10000	10000	NS
Isopropylbenzene	ND		ND	2300	2300	100
n-Propylbenzene	ND		ND	3700	3700	100
1,3,5-Trimethylbenzene	ND		ND	3300	3300	100
tert-Butylbenzene	ND		ND	10000	11000	100
1,2,4-Trimethylbenzene	ND		ND	10000	13000	100
sec-Butylbenzene	ND		ND	10000	11000	100
4-Isopropyltoluene	ND		ND	10000	10000	NS
n-Butylbenzene	ND		ND	10000	12000	100
Naphthalene	ND		ND	13000	13000	200

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 2
Summary of Analytical Results - Soil
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-1	BC-1	BC-2	BC-2	BC-2	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-1 21-23	BC-1 60-62	BC-2 9-11	BC-2D 9-11	BC-2 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/14/2006	3/15/2006	3/10/2006	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300130	60300130	60300082	60300082	60300130	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
2,4-Dimethylphenol	ND	ND	ND	ND	ND	50000	50000	NS
Naphthalene	ND	ND	ND	ND	ND	13000	13000	200
2-Methyl Naphthalene	ND	ND	ND	250 J	ND	36400	36400	NS
Acenaphthylene	ND	ND	ND	ND	ND	50000	103000	NS
Acenapthene	ND	ND	ND	ND	ND	50000	92000	400
Dibenzofuran	ND	ND	ND	ND	ND	6200	6200	NS
Fluorene	ND	ND	ND	ND	ND	50000	365000	1000
Phenanthrene	ND	ND	1400	1500	ND	50000	218000	1000
Anthracene	ND	ND	510 J	570 J	ND	50000	700000	1000
Carbazole	ND	ND	ND	ND	ND	50000	50000	NS
Fluoranthene	210	ND	3000	2700	ND	50000	1900000	1000
Pyrene	210	ND	3400	3800	ND	50000	665000	1000
Benzo(a)anthracene	ND J	ND	**1800**	**1800**	ND	224	2800	0.04
Chrysene	ND J	ND	***1600***	***1600***	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND J	ND	320 J	ND	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	ND	510 J	760 J	ND	3200	3200	0.04
Benzo(b)fluoranthene	ND J	ND	***1500***	***1600***	ND	220	1100	0.04
Benzo(k)fluoranthene	ND J	ND	***1500***	***1700***	ND	220	1100	0.04
Benzo(a)pyrene	ND J	ND	**1800**	**2100**	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	ND	**330** J	ND	14	165000000	1000
Benzo (g,h,i) perylene	ND	ND	810 J	1000 J	ND	50000	8000000	0.04

Table 2
Summary of Analytical Results - Soil
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-3	BC-3	BC-4	BC-4	BC-5	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-3 19-21	BC-3 60-62	BC-4 19-21	BC-4 67-69	BC-5 17-19	Recommended	Soil Cleanup	Alternative
Sample Date	2/27/2006	3/1/2006	3/2/2006	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60200231	60300025	60300025	60300025	60300082	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
2,4-Dimethylphenol	ND	ND	ND	ND	410 J	50000	50000	NS
Naphthalene	3800 J	830	ND	ND	***14000***	13000	13000	200
2-Methyl Naphthalene	3800 J	1300	600	ND	4100	36400	36400	NS
Acenaphthylene	ND	99 J	ND	ND	ND	50000	103000	NS
Acenapthene	3600 J	370	460	ND	2300	50000	92000	400
Dibenzofuran	ND	130 J	ND	ND	2200	6200	6200	NS
Fluorene	7000	540	240	ND	2400	50000	365000	1000
Phenanthrene	27000	1600	81 J	ND	5800	50000	218000	1000
Anthracene	12000	530	ND	ND	680 J	50000	700000	1000
Carbazole	ND	ND	180 J	ND	9000	50000	50000	NS
Fluoranthene	30000	1100	ND	ND	1300	50000	1900000	1000
Pyrene	26000	1400	ND	ND	940 J	50000	665000	1000
Benzo(a)anthracene	***12000***	**510**	ND	ND	210 J	224	2800	0.04
Chrysene	***12000***	**550**	ND	ND	210 J	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	97 J	64 J	71 J	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	2400 J	95 J	ND	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	***6300***	260	ND	ND	ND	220	1100	0.04
Benzo(k)fluoranthene	***7100***	310	ND	ND	ND	220	1100	0.04
Benzo(a)pyrene	**7800**	330	ND	ND	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	**1200** J	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	3400 J	130 J	ND	ND	ND	50000	8000000	0.04

Table 2
Summary of Analytical Results - Soil
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-5	BC-6	BC-6	BC-7	BC-7	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-5 55-57	BC-6 19-21	BC-6 60-62	BC-7 13-15	BC-7 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/7/2006	3/8/2006	3/9/2006	3/16/2006	3/17/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300082	60300082	60300082	60300130	60300149	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
2,4-Dimethylphenol	ND	ND	ND	ND	ND	50000	50000	NS
Naphthalene	ND	ND	ND	ND	ND	13000	13000	200
2-Methyl Naphthalene	ND	ND	ND	ND	ND	36400	36400	NS
Acenaphthylene	ND	ND	ND	ND	ND	50000	103000	NS
Acenapthene	ND	ND	ND	ND	ND	50000	92000	400
Dibenzofuran	ND	ND	ND	ND	ND	6200	6200	NS
Fluorene	ND	ND	ND	ND	ND	50000	365000	1000
Phenanthrene	60 J	ND	ND	ND	ND	50000	218000	1000
Anthracene	ND	ND	ND	ND	ND	50000	700000	1000
Carbazole	ND	ND	ND	ND	ND	50000	50000	NS
Fluoranthene	ND	ND	ND	ND	ND	50000	1900000	1000
Pyrene	ND	ND	ND	ND	ND	50000	665000	1000
Benzo(a)anthracene	ND	ND	ND	ND	ND	224	2800	0.04
Chrysene	ND	ND	ND	ND	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	1100	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	ND	ND	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	220	1100	0.04
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	220	1100	0.04
Benzo(a)pyrene	ND	ND	ND	ND	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	ND	ND	ND	ND	ND	50000	8000000	0.04

Table 2
Summary of Analytical Results - Soil
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BC-8 BC-8 31-33 3/18/2006 60300149	BC-8 BC-8 41-43 3/18/2006 60300149	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Semivolatile Organic Compounds (ug/Kg)					
2,4-Dimethylphenol	ND	ND	50000	50000	NS
Naphthalene	ND	ND	13000	13000	200
2-Methyl Naphthalene	ND	ND	36400	36400	NS
Acenaphthylene	ND	ND	50000	103000	NS
Acenapthene	ND	ND	50000	92000	400
Dibenzofuran	ND	ND	6200	6200	NS
Fluorene	ND	ND	50000	365000	1000
Phenanthrene	ND	ND	50000	218000	1000
Anthracene	ND	ND	50000	700000	1000
Carbazole	ND	ND	50000	50000	NS
Fluoranthene	ND	ND	50000	1900000	1000
Pyrene	ND	ND	50000	665000	1000
Benzo(a)anthracene	ND	ND	224	2800	0.04
Chrysene	ND	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	1800	700	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	ND	ND	220	1100	0.04
Benzo(k)fluoranthene	ND	ND	220	1100	0.04
Benzo(a)pyrene	ND	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	ND	ND	50000	8000000	0.04

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 3
Summary of Analytical Results - Soil
Polychlorinated Biphenyls (PCBs)
Bushwick Creek Inlet Site Investigation

Boring Number	BC-1	BC-1	BC-2	BC-2	BC-2	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-1 21-23	BC-1 60-62	BC-2 9-11	BC-2D 9-11	BC-2 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/14/2006	3/15/2006	3/10/2006	3/10/2006	3/13/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300130	60300130	60300082	60300082	60300130	Objectives	Protect GW	Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	130	ND	ND	ND	ND	10000	10000	NS

Boring Number	BC-3	BC-3	BC-4	BC-4	BC-5	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-3 19-21	BC-3 60-62	BC-4 19-21	BC-4 67-69	BC-5 17-19	Recommended	Soil Cleanup	Alternative
Sample Date	2/27/2006	3/1/2006	3/2/2006	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60200231	60300025	60300025	60300025	60300082	Objectives	Protect GW	Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	ND	ND	ND	ND	ND	10000	10000	NS

Boring Number	BC-5	BC-6	BC-6	BC-7	BC-7	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BC-5 55-57	BC-6 19-21	BC-6 60-62	BC-7 13-15	BC-7 60-62	Recommended	Soil Cleanup	Alternative
Sample Date	3/7/2006	3/8/2006	3/9/2006	3/16/2006	3/17/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300082	60300082	60300082	60300130	60300149	Objectives	Protect GW	Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	ND	ND	ND	ND	ND	10000	10000	NS

Table 3
Summary of Analytical Results - Soil
Polychlorinated Biphenyls (PCBs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BC-8 BC-8 31-33 3/18/2006 60300149	BC-8 BC-8 41-43 3/18/2006 60300149	NYSDEC Recommended Soil Cleanup Objectives	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)					
PCB-1260	ND	ND	10000	10000	NS

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 4
Summary of Analytical Results - Soil
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number	BC-1	BC-1	BC-2	BC-2	BC-2	NYSDEC	NYSDEC
Sample ID	BC-1 21-23	BC-1 60-62	BC-2 9-11	BC-2D 9-11	BC-2 60-62	Recommended	Eastern USA
Sample Date	3/14/2006	3/15/2006	3/10/2006	3/10/2006	3/13/2006	Soil Cleanup	Background
Lab Identification Number	60300130	60300130	60300082	60300082	60300130	Objective	Criteria
TAL Metals (mg/Kg)							
Aluminum	7100	7160	4590	4840	2980 MHA	NS	33000
Arsenic	***12.0***	ND	***87.9***	***57.3***	ND	7.5	3 - 12
Barium	95.9	68.2	114	77.7	35.2	NS	15 - 600
Beryllium	0.391	0.512	ND	ND	ND	1.6	0 - 1.75
Cadmium	***2.06***	ND	0.795	0.661	ND	1	0.1 - 1
Chromium	***62.9***	**18.4**	**17.5**	**11.9**	6.75	10	1.5 - 40
Calcium	2170	9040	15200	23400	10000	NS	130 - 35000
Iron	23200 B1	14600 B1	27800 B1	24500 B1	7910 B1 MHA	NS	2000 - 550000
Cobalt	ND	7.08	ND	ND	ND	NS	2.5 - 60
Copper	***91.0***	17.7	***99.3***	***69.2***	6.92	25	1 - 50
Lead	366	6.74	477	330	3.27	500	500
Magnesium	3160	*6180*	3140	*7140*	4720	NS	100 - 5000
Manganese	209	327	309	197	185	NS	50 - 50000
Mercury	***0.719***	ND	***0.720***	***0.691***	0.0531	0.1	0.001 - 0.2
Nickel	**21.1**	**16.8**	**17.4**	12.8	7.66	13	0.5 - 25
Vanadium	30.4	21.6	23.8	18.5	8.80	NS	1 - 300
Selenium	ND	ND	**3.21**	**2.90**	ND	2	0.1 - 3.9
Potassium	1230	2660	879	791	654	NS	8500 - 43000
Silver	1.59	ND	ND	ND	ND	NS	NS
Sodium	850	708	2670	2410	402	NS	6000 - 8000
Thallium	ND	2.56	ND	ND	ND	NS	NS
Zinc	***179***	**37.0**	***387***	***316***	17.6	20	9 - 50
Total Cyanide	ND	ND	ND	0.73	ND	NS	NS

Table 4
Summary of Analytical Results - Soil
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number	BC-3		BC-3	BC-4		BC-4		BC-5		NYSDEC	NYSDEC
Sample ID	BC-3 19-21		BC-3 60-62	BC-4 19-21		BC-4 67-69		BC-5 17-19		Recommended	Eastern USA
Sample Date	2/27/2006		3/1/2006	3/2/2006		3/3/2006		3/6/2006		Soil Cleanup	Background
Lab Identification Number	60200231		60300025	60300025		60300025		60300082		Objective	Criteria
TAL Metals (mg/Kg)											
Aluminum	11700	MHA	1940	5900		1970		9010		NS	33000
Arsenic	***47.1***		4.09	ND		ND		5.80		7.5	3 - 12
Barium	170	M1	12.8	81.9		13.4		24.2		NS	15 - 600
Beryllium	0.392		ND	ND		ND		0.403		1.6	0 - 1.75
Cadmium	0.814		ND	ND		ND		ND		1	0.1 - 1
Chromium	***51.4***	M2	***50.9***	**12.5**		6.87		**16.4**		10	1.5 - 40
Calcium	7120		3410	2010		2430		54400		NS	130 - 35000
Iron	31000	MHA	14200	9970	B1	6840	B1	16600	B1	NS	2000 - 550000
Cobalt	9.73		ND	ND		ND		5.91		NS	2.5 - 60
Copper	***176***	MHA	***58.1***	9.76		5.72		13.3		25	1 - 50
Lead	658	MHA	40.5	4.88		ND		16.2		500	500
Magnesium	4440		1590	2700		1660		3860		NS	100 - 5000
Manganese	233	M1	248	136		111		218		NS	50 - 50000
Mercury	***9.45***		0.0956	ND		ND		**0.158**		0.1	0.001 - 0.2
Nickel	**23.5**		6.60	11.3		5.04		**15.4**		13	0.5 - 25
Vanadium	31.3		12.3	13.5		7.46		19.2		NS	1 - 300
Selenium	***6.38***		ND	ND		ND		**2.19**		2	0.1 - 3.9
Potassium	2350		384	792		391		1920		NS	8500 - 43000
Silver	2.33		ND	ND		ND		ND		NS	NS
Sodium	3590		ND	499		ND		1070		NS	6000 - 8000
Thallium	ND		ND	ND		ND		ND		NS	NS
Zinc	***514***	MHA	**39.8**	***58.7***		15.4		**44.1**		20	9 - 50
Total Cyanide	ND		ND	ND		ND		ND		NS	NS

Table 4
Summary of Analytical Results - Soil
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number	BC-5		BC-6		BC-6		BC-7		BC-7		NYSDEC	NYSDEC
Sample ID	BC-5 55-57		BC-6 19-21		BC-6 60-62		BC-7 13-15		BC-7 60-62		Recommended	Eastern USA
Sample Date	3/7/2006		3/8/2006		3/9/2006		3/16/2006		3/17/2006		Soil Cleanup	Background
Lab Identification Number	60300082		60300082		60300082		60300130		60300149		Objective	Criteria
TAL Metals (mg/Kg)												
Aluminum	2610		12900		7520	MHA	13300		15000		NS	33000
Arsenic	1.39		6.17		1.63		6.91		2.48		7.5	3 - 12
Barium	17.2		30.7		55.3		32.1		66.2		NS	15 - 600
Beryllium	ND		0.576		0.429		0.668		0.843		1.6	0 - 1.75
Cadmium	ND		ND		ND		ND		ND		1	0.1 - 1
Chromium	**10.4**		**25.1**		**23.0**		**25.6**		**31.3**		10	1.5 - 40
Calcium	1810		1990		6550		2310		2260		NS	130 - 35000
Iron	14200	B1	23900	B1	21500	B1 MHA	23900	B1	29400	B1	NS	2000 - 550000
Cobalt	ND		8.60		7.25		8.90		14.3		NS	2.5 - 60
Copper	9.03		11.7		17.6		12.7		**27.1**		25	1 - 50
Lead	3.62		9.25		6.49		12.2		14.5		500	500
Magnesium	1490		*6210*		4400		*6270*		4760		NS	100 - 5000
Manganese	179		382		357	MHA	409		504		NS	50 - 50000
Mercury	ND		ND		ND		ND		ND		0.1	0.001 - 0.2
Nickel	6.91		**22.3**		**14.6**		**22.5**		***27.7***		13	0.5 - 25
Vanadium	17.1		28.8		33.1		29.9		39.3		NS	1 - 300
Selenium	ND		**2.86**		**2.47**		**2.62**		**2.31**		2	0.1 - 3.9
Potassium	434		2970		2150		3140		2650		NS	8500 - 43000
Silver	ND		ND		ND		ND		ND		NS	NS
Sodium	ND		1780		189		1420		417		NS	6000 - 8000
Thallium	ND		ND		ND		ND		ND		NS	NS
Zinc	**25.3**		***56.5***		**34.5**		***60.0***		***71.8***		20	9 - 50
Total Cyanide	ND		ND		ND		ND		ND		NS	NS

Table 4
Summary of Analytical Results - Soil
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number	BC-8		BC-8		NYSDEC	NYSDEC
Sample ID	BC-8 31-33		BC-8 41-43		Recommended	Eastern USA
Sample Date	3/18/2006		3/18/2006		Soil Cleanup	Background
Lab Identification Number	60300149		60300149		Objective	Criteria
Aluminum	3240		17100	MHA	NS	33000
Arsenic	ND		ND		7.5	3 - 12
Barium	14.1		176		NS	15 - 600
Beryllium	ND		0.591		1.6	0 - 1.75
Cadmium	ND		ND		1	0.1 - 1
Chromium	8.76		**28.1**		10	1.5 - 40
Calcium	2330		17400	M2	NS	130 - 35000
Iron	7870	B1	26300	B1 MHA	NS	2000 - 550000
Cobalt	ND		10.6		NS	2.5 - 60
Copper	7.22		**26.3**	M1	25	1 - 50
Lead	3.82		7.93		500	500
Magnesium	2710		*8560*		NS	100 - 5000
Manganese	132		509	MHA	NS	50 - 50000
Mercury	ND		ND		0.1	0.001 - 0.2
Nickel	12.0		**21.7**		13	0.5 - 25
Vanadium	9.77		37.8		NS	1 - 300
Selenium	ND		ND		2	0.1 - 3.9
Potassium	633		4770		NS	8500 - 43000
Silver	ND		ND		NS	NS
Sodium	303		853		NS	6000 - 8000
Thallium	ND		6.75		NS	NS
Zinc	**24.5**		***61.6***		20	9 - 50
Total Cyanide	ND		ND		NS	NS

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Eastern USA Background Criteria.
(3) ND - Non-detected above laboratory method detection limit.
(4) NS - No Standard.
(5) B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
(6) M2 - The MS and/or MSD were below the acceptance limits due to sample matrix interference.
(7) MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.

Table 5
Summary of Analytical Results - Sediment
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-1	BCS-1	BCS-2	BCS-2	BCS-3	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-1 18-20	BCS-1 30-32	BCS-2 12-14	BCS-2 46-48	BCS-3 12-14	Recommended	Soil Cleanup	Alternative
Sample Date	2/22/2006	2/22/2006	2/23/2006	2/24/2006	2/27/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60200231	60200231	60200231	60200231	60200231	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	***930***	ND	***1600***	ND	***360***	200	110	NS
Carbon Disulfide	ND	ND	ND	ND	72 J	2700	2700	NS
Methylene Chloride	ND	ND	ND	ND	ND	100	100	NS
2-Butanone-(MEK)	ND	ND	400	ND	ND	NS	NS	NS
Benzene	ND	ND	ND	ND	ND	60	60	14
Toluene	ND	ND	ND	ND	ND	1500	1500	100
Ethylbenzene	72	ND	6 J	ND	ND	5500	5500	100
M & P XYLENE	49 J	ND	14 J	ND	7 J	1200	1200	100
O-XYLENE	120	ND	38	ND	9 J	1200	1200	100
Isopropylbenzene	120	ND	45	ND	22	2300	2300	100
n-Propylbenzene	88	ND	20	ND	11 J	3700	3700	100
1,3,5-Trimethylbenzene	150	ND	63	ND	ND	3300	3300	100
1,2,4-Trimethylbenzene	850	ND	140	ND	ND	10000	13000	100
sec-Butylbenzene	100	ND	73	ND	26	10000	11000	100
4-Isopropyltoluene	420	ND	70	ND	20	10000	10000	NS
n-Butylbenzene	110	ND	34	ND	19	10000	12000	100
Naphthalene	2900 B,E	ND	160 B	ND	230 B	13000	13000	200

Table 5
Summary of Analytical Results - Sediment
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-3	BCS-4	BCS-4	BCS-5	BCS-5	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-3 36-38	BCS-4 6-8	BCS-4 38-40	BCS-5 8-10	BCS-5 40-42	Recommended	Soil Cleanup	Alternative
Sample Date	2/28/2006	2/28/2006	3/2/2006	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300025	60300025	60300025	60300025	60300082	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	ND	***300***	ND	***1100***	38 J	200	110	NS
Carbon Disulfide	ND	ND	ND	380	ND	2700	2700	NS
Methylene Chloride	5 J	9 J	ND	16 J	ND	100	100	NS
2-Butanone-(MEK)	ND	100 J	ND	350 J	ND	NS	NS	NS
Benzene	ND	ND	ND	ND	ND	60	60	14
Toluene	ND	ND	ND	ND	ND	1500	1500	100
Ethylbenzene	ND	ND	ND	ND	ND	5500	5500	100
M & P XYLENE	ND	ND	ND	51 J	ND	1200	1200	100
O-XYLENE	ND	ND	ND	66 J	ND	1200	1200	100
Isopropylbenzene	ND	ND	ND	34 J	ND	2300	2300	100
n-Propylbenzene	ND	ND	ND	ND	ND	3700	3700	100
1,3,5-Trimethylbenzene	ND	ND	ND	140	ND	3300	3300	100
1,2,4-Trimethylbenzene	ND	ND	ND	210	ND	10000	13000	100
sec-Butylbenzene	ND	ND	ND	40 J	ND	10000	11000	100
4-Isopropyltoluene	ND	ND	ND	ND	ND	10000	10000	NS
n-Butylbenzene	ND	ND	ND	ND	ND	10000	12000	100
Naphthalene	ND	ND	ND	74 J,B	6 J,B	13000	13000	200

Table 5
Summary of Analytical Results - Sediment
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-6	BCS-6	BCS-7	BCS-7	BCS-8	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-6 10-12	BCS-6 36-38	BCS-7 10-12	BCS-7 44-46	BCS-8 24-26	Recommended	Soil Cleanup	Alternative
Sample Date	3/6/2006	3/9/2006	3/9/2006	3/13/2006	3/13/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300082	60300082	60300082	60300130	60300130	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	***760***	***530***	***640***	ND	***290***	200	110	NS
Carbon Disulfide	63 J	ND	160	ND	ND	2700	2700	NS
Methylene Chloride	ND	ND	ND	ND	ND	100	100	NS
2-Butanone-(MEK)	ND	70	170	ND	ND J	NS	NS	NS
Benzene	14 J	ND	ND	ND	ND	60	60	14
Toluene	ND	ND	ND	ND	ND	1500	1500	100
Ethylbenzene	36	ND	ND	ND	25	5500	5500	100
M & P XYLENE	98	2 J	ND	ND	ND	1200	1200	100
O-XYLENE	48	ND	ND	ND	76	1200	1200	100
Isopropylbenzene	66	ND	ND	ND	20	2300	2300	100
n-Propylbenzene	57	ND	ND	ND	ND	3700	3700	100
1,3,5-Trimethylbenzene	380	ND	39	ND	39	3300	3300	100
1,2,4-Trimethylbenzene	530	ND	57	ND	230	10000	13000	100
sec-Butylbenzene	58	ND	13 J	ND	ND J	10000	11000	100
4-Isopropyltoluene	110	ND	ND	ND	37	10000	10000	NS
n-Butylbenzene	48	ND	ND	ND	ND J	10000	12000	100
Naphthalene	160 B	3 J,B	ND	ND	320 B	13000	13000	200

Table 5
Summary of Analytical Results - Sediment
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-8	BCS-9	BCS-9	BCS-10	BCS-10	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-8 48-50	BCS-9 16-18	BCS-9 42-44	BCS-10 12-14	BCS-10 46-48	Recommended	Soil Cleanup	Alternative
Sample Date	3/14/2006	3/15/2006	3/16/2006	3/16/2006	3/21/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300130	60300130	60300130	60300130	60300199	Objective	Protect GW	Value
Volatile Organic Compounds (ug/Kg)								
Acetone	ND	***1000***	ND	***200***	ND	200	110	NS
Carbon Disulfide	ND	ND	ND	ND	ND	2700	2700	NS
Methylene Chloride	ND	ND	ND	ND	ND	100	100	NS
2-Butanone-(MEK)	ND	310	ND	ND	ND	NS	NS	NS
Benzene	ND	ND	ND	ND	ND	60	60	14
Toluene	ND	ND	ND	ND	ND	1500	1500	100
Ethylbenzene	ND	23	ND	ND	ND	5500	5500	100
M & P XYLENE	ND	ND	ND	ND	ND	1200	1200	100
O-XYLENE	ND	94	ND	ND	ND	1200	1200	100
Isopropylbenzene	ND	91	ND	37	ND	2300	2300	100
n-Propylbenzene	ND	55	ND	30	ND	3700	3700	100
1,3,5-Trimethylbenzene	ND	80	ND	16	ND	3300	3300	100
1,2,4-Trimethylbenzene	ND	510	ND	16	ND	10000	13000	100
sec-Butylbenzene	ND	79	ND	54	ND	10000	11000	100
4-Isopropyltoluene	ND	170	ND	ND	ND	10000	10000	NS
n-Butylbenzene	ND	88	ND	47	ND	10000	12000	100
Naphthalene	ND	1100 B	ND	ND	ND	13000	13000	200

Table 5
Summary of Analytical Results - Sediment
Volatile Organic Compounds (VOCs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-11 BCS-11 18-20 3/21/2006 60300199	BCS-11 BCS-11 50-52 3/22/2006 60300199	BCS-11 BCS-11D 50-52 3/22/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Volatile Organic Compounds (ug/Kg)						
Acetone	***1100***	43 J	ND	200	110	NS
Carbon Disulfide	ND	ND	ND	2700	2700	NS
Methylene Chloride	17 J, B	ND	ND	100	100	NS
2-Butanone-(MEK)	ND	ND	ND	NS	NS	NS
Benzene	35	ND	ND	60	60	14
Toluene	32	ND	ND	1500	1500	100
Ethylbenzene	370	ND	ND	5500	5500	100
M & P XYLENE	300	ND	ND	1200	1200	100
O-XYLENE	260	ND	ND	1200	1200	100
Isopropylbenzene	170	ND	ND	2300	2300	100
n-Propylbenzene	90	ND	ND	3700	3700	100
1,3,5-Trimethylbenzene	410	ND	ND	3300	3300	100
1,2,4-Trimethylbenzene	**10000**	ND	ND	10000	13000	100
sec-Butylbenzene	36	ND	ND	10000	11000	100
4-Isopropyltoluene	310	ND	ND	10000	10000	NS
n-Butylbenzene	ND	ND	ND	10000	12000	100
Naphthalene	***79000***	ND	ND	13000	13000	200

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater.
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 6
Summary of Analytical Results - Sediment
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-1	BCS-1	BCS-2	BCS-2	BCS-3	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-1 18-20	BCS-1 30-32	BCS-2 12-14	BCS-2 46-48	BCS-3 12-14	Recommended	Soil Cleanup	Alternative
Sample Date	2/22/2006	2/22/2006	2/23/2006	2/24/2006	2/27/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60200231	60200231	60200231	60200231	60200231	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
3&4-Methyl Phenol	ND	ND	ND	ND	ND	224	224	NS
Naphthalene	***22000***	ND	ND	ND	ND	13000	13000	200
2-Methyl Naphthalene	***36000***	ND	2100	ND	1600 J	36400	36400	NS
Acenaphthylene	8400	ND	650 J	ND	510 J	50000	103000	NS
Acenapthene	29000	ND	1400 J	ND	1100 J	50000	92000	400
Dibenzofuran	4400	ND	ND	ND	ND	6200	6200	NS
Fluorene	37000	ND	1900 J	ND	1500 J	50000	365000	1000
Phenanthrene	**50000**	ND	7600	ND	6200	50000	218000	1000
Anthracene	31000	ND	2700	ND	2100	50000	700000	1000
Carbazole	ND	ND	ND	ND	ND	50000	50000	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	8100	8100	NS
Fluoranthene	33000	ND	6700	ND	4800	50000	1900000	1000
Pyrene	37000	ND	6200	ND	4700	50000	665000	1000
Benzo(a)anthracene	***29000***	ND	**2500**	ND	**1900**	224	2800	0.04
Chrysene	***29000***	ND	***2700***	ND	***2000***	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	110 JB	1300 J,B	ND	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	2800 J	ND	430 J	ND	400 J	3200	3200	0.04
Benzo(b)fluoranthene	***9000***	ND	***1100*** J	ND	**880** J	220	1100	0.04
Benzo(k)fluoranthene	***14000***	ND	***1300*** J	ND	**920** J	220	1100	0.04
Benzo(a)pyrene	***22000***	ND	**1700** J	ND	**1300** J	61	11000	0.04
Dibenzo(a,h)Anthracene	**1500** J	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	4600	ND	570 J	ND	570 J	50000	8000000	0.04

Table 6
Summary of Analytical Results - Sediment
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-3	BCS-4	BCS-4	BCS-5	BCS-5	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-3 36-38	BCS-4 6-8	BCS-4 38-40	BCS-5 8-10	BCS-5 40-42	Recommended	Soil Cleanup	Alternative
Sample Date	2/28/2006	2/28/2006	3/2/2006	3/3/2006	3/6/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300025	60300025	60300025	60300025	60300082	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
3&4-Methyl Phenol	ND	ND	ND	***1300*** J	ND	224	224	NS
Naphthalene	ND	ND	ND	ND	ND	13000	13000	200
2-Methyl Naphthalene	ND	730 J	ND	370 J	ND	36400	36400	NS
Acenaphthylene	ND	720 J	ND	ND	ND	50000	103000	NS
Acenapthene	ND	1900	ND	ND	ND	50000	92000	400
Dibenzofuran	ND	560 J	ND	ND	ND	6200	6200	NS
Fluorene	ND	2200	ND	240 J	ND	50000	365000	1000
Phenanthrene	ND	8700	ND	990 J	ND	50000	218000	1000
Anthracene	ND	3200	ND	290 J	ND	50000	700000	1000
Carbazole	ND	ND	ND	ND	ND	50000	50000	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	8100	8100	NS
Fluoranthene	ND	7500	ND	1500	ND	50000	1900000	1000
Pyrene	ND	8900	ND	1400	ND	50000	665000	1000
Benzo(a)anthracene	ND	***2900***	ND	**580** J	ND	224	2800	0.04
Chrysene	ND	***3000***	ND	***680*** J	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	1200 J	45 J	4800	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	390 J	ND	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	ND	***1400*** J	ND	**450** J	ND	220	1100	0.04
Benzo(k)fluoranthene	ND	***1600*** J	ND	**420** J	ND	220	1100	0.04
Benzo(a)pyrene	ND	***2000***	ND	**500** J	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	ND	550 J	ND	ND	ND	50000	8000000	0.04

Table 6
Summary of Analytical Results - Sediment
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-6	BCS-6	BCS-7	BCS-7	BCS-8	NYSDEC	NYSDEC	STARS TCLP
Sample ID	BCS-6 10-12	BCS-6 36-38	BCS-7 10-12	BCS-7 44-46	BCS-8 24-26	Recommended	Soil Cleanup	Alternative
Sample Date	3/6/2006	3/9/2006	3/9/2006	3/13/2006	3/13/2006	Soil Cleanup	Objectives to	Guidance
Lab Identification Number	60300082	60300082	60300082	60300130	60300130	Objective	Protect GW	Value
Semivolatile Organic Compounds (ug/Kg)								
3&4-Methyl Phenol	ND	ND	ND	ND	ND	224	224	NS
Naphthalene	ND	ND	ND	ND	3200	13000	13000	200
2-Methyl Naphthalene	980 J	ND	93 J	ND	5500	36400	36400	NS
Acenaphthylene	ND	ND	160 J	ND	1000	50000	103000	NS
Acenapthene	530 J	ND	ND	ND	2800	50000	92000	400
Dibenzofuran	ND	ND	ND	ND	620	6200	6200	NS
Fluorene	890 J	ND	140 J	ND	3400	50000	365000	1000
Phenanthrene	4800	ND	660	ND	10000	50000	218000	1000
Anthracene	1400 J	ND	280 J	ND	4000	50000	700000	1000
Carbazole	ND	ND	ND	ND	ND	50000	50000	NS
Di-n-butylphthalate	ND	ND	ND	ND	***9000***	8100	8100	NS
Fluoranthene	6000	ND	1500	ND	6600	50000	1900000	1000
Pyrene	5900	ND	1200	ND	6700	50000	665000	1000
Benzo(a)anthracene	**2100** J	ND	**620**	ND	***2700***	224	2800	0.04
Chrysene	***2300*** J	ND	***710***	ND	***2700***	400	400	0.04
bis(2-Ethylhexyl)phthalate	6700	ND	3400	ND	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	ND	ND	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	***1500*** J	ND	**380** J	ND	***1600***	220	1100	0.04
Benzo(k)fluoranthene	***1300*** J	ND	**410** J	ND	***1800***	220	1100	0.04
Benzo(a)pyrene	**1500** J	ND	**480**	ND	**2400**	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	660 J	ND	140 J	ND	ND	50000	8000000	0.04

Table 6
Summary of Analytical Results - Sediment
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-8 BCS-8 48-50 3/14/2006 60300130	BCS-9 BCS-9 16-18 3/15/2006 60300130	BCS-9 BCS-9 42-44 3/16/2006 60300130	BCS-10 BCS-10 12-14 3/16/2006 60300130	BCS-10 BCS-10 46-48 3/21/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Semivolatile Organic Compounds (ug/Kg)								
3&4-Methyl Phenol	ND	ND	ND	ND	ND	224	224	NS
Naphthalene	ND	1700	ND	1000	ND	13000	13000	200
2-Methyl Naphthalene	ND	1300	ND	4200	ND	36400	36400	NS
Acenaphthylene	ND	420	ND	830	ND	50000	103000	NS
Acenapthene	ND	1200	ND	2800	ND	50000	92000	400
Dibenzofuran	ND	540	ND	1100	ND	6200	6200	NS
Fluorene	ND	1300	ND	2900	ND	50000	365000	1000
Phenanthrene	ND	5000	ND	14000	ND	50000	218000	1000
Anthracene	ND	1400	ND	4100	ND	50000	700000	1000
Carbazole	ND	ND	ND	3700	ND	50000	50000	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	8100	8100	NS
Fluoranthene	ND	5400	ND	13000	ND	50000	1900000	1000
Pyrene	ND	4000	ND	9800	ND	50000	665000	1000
Benzo(a)anthracene	ND	**2300**	ND	***4400***	ND	224	2800	0.04
Chrysene	ND	***2400***	ND	***4100***	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	1200	ND	ND	170 J, B	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	ND	ND	ND	560	ND	3200	3200	0.04
Benzo(b)fluoranthene	ND	***2000***	ND	***4300***	ND	220	1100	0.04
Benzo(k)fluoranthene	ND	***1700***	ND	***3600***	ND	220	1100	0.04
Benzo(a)pyrene	ND	**2000**	ND	**4600**	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	ND	ND	ND	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	ND	ND	ND	620	ND	50000	8000000	0.04

Table 6
Summary of Analytical Results - Sediment
Semi-volatile Organic Compounds (SVOCs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-11 BCS-11 18-20 3/21/2006 60300199	BCS-11 BCS-11 50-52 3/22/2006 60300199	BCS-11 BCS-11D 50-52 3/22/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Semivolatile Organic Compounds (ug/Kg)						
3&4-Methyl Phenol	ND	ND	ND	224	224	NS
Naphthalene	***48000***	ND	ND	13000	13000	200
2-Methyl Naphthalene	***37000***	ND	ND	36400	36400	NS
Acenaphthylene	4100	ND	ND	50000	103000	NS
Acenapthene	27000	ND	ND	50000	92000	400
Dibenzofuran	3100	ND	ND	6200	6200	NS
Fluorene	15000	ND	ND	50000	365000	1000
Phenanthrene	58000	ND	ND	50000	218000	1000
Anthracene	22000	ND	ND	50000	700000	1000
Carbazole	ND	ND	ND	50000	50000	NS
Di-n-butylphthalate	ND	ND	ND	8100	8100	NS
Fluoranthene	35000	ND	ND	50000	1900000	1000
Pyrene	42000	ND	ND	50000	665000	1000
Benzo(a)anthracene	***17000***	ND	ND	224	2800	0.04
Chrysene	***17000***	ND	ND	400	400	0.04
bis(2-Ethylhexyl)phthalate	ND	ND	ND	50000	435000	NS
Indeno (1,2,3-cd)Pyrene	2900	ND	ND	3200	3200	0.04
Benzo(b)fluoranthene	***10000***	ND	ND	220	1100	0.04
Benzo(k)fluoranthene	***12000***	ND	ND	220	1100	0.04
Benzo(a)pyrene	***18000***	ND	ND	61	11000	0.04
Dibenzo(a,h)Anthracene	470	ND	ND	14	165000000	1000
Benzo (g,h,i) perylene	5500	ND	ND	50000	8000000	0.04

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater.
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 7
Summary of Analytical Results - Sediment
Polychlorinated Biphenyls (PCBs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-1 BCS-1 18-20 2/22/2006 60200231	BCS-1 BCS-1 30-32 2/22/2006 60200231	BCS-2 BCS-2 12-14 2/23/2006 60200231	BCS-2 BCS-2 46-48 2/24/2006 60200231	BCS-3 BCS-3 12-14 2/27/2006 60200231	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	ND	ND	ND	ND	ND	10000	10000	NS

Boring Number Sample ID Sample Date Lab Identification Number	BCS-3 BCS-3 36-38 2/28/2006 60300025	BCS-4 BCS-4 6-8 2/28/2006 60300025	BCS-4 BCS-4 38-40 3/2/2006 60300025	BCS-5 BCS-5 8-10 3/3/2006 60300025	BCS-5 BCS-5 40-42 3/6/2006 60300082	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	ND	55 J	ND	320	ND	10000	10000	NS

Boring Number Sample ID Sample Date Lab Identification Number	BCS-6 BCS-6 10-12 3/6/2006 60300082	BCS-6 BCS-6 36-38 3/9/2006 60300082	BCS-7 BCS-7 10-12 3/9/2006 60300082	BCS-7 BCS-7 44-46 3/13/2006 60300130	BCS-8 BCS-8 24-26 3/13/2006 60300130	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	470 R10	ND	630	ND	ND	10000	10000	NS

Table 7
Summary of Analytical Results - Sediment
Polychlorinated Biphenyls (PCBs)
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-8 BCS-8 48-50 3/14/2006 60300130	BCS-9 BCS-9 16-18 3/15/2006 60300130	BCS-9 BCS-9 42-44 3/16/2006 60300130	BCS-10 BCS-10 12-14 3/16/2006 60300130	BCS-10 BCS-10 46-48 3/21/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)								
PCB-1260	ND	170	ND	ND	ND	10000	10000	NS

Boring Number Sample ID Sample Date Lab Identification Number	BCS-11 BCS-11 18-20 3/21/2006 60300199	BCS-11 BCS-11 50-52 3/22/2006 60300199	BCS-11 BCS-11D 50-52 3/22/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Soil Cleanup Objectives to Protect GW	STARS TCLP Alternative Guidance Value
Polychlorinated Biphenyls (PCBs) (ug/Kg)						
PCB-1260	ND	170	ND	10000	10000	NS

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater.
(3) Shaded - Indicates value that exceeded the STARS TCLP Alternative Guidance Value.
(4) ND - Non-detected above laboratory method detection limit.
(5) NS - No Standard.
(6) B - Indicates the analyte was found in the blank.
(7) J - Indicates an estimated value.

Table 8
Summary of Analytical Results - Sediment
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-1 BCS-1 18-20 2/22/2006 60200231	BCS-1 BCS-1 30-32 2/22/2006 60200231	BCS-2 BCS-2 12-14 2/23/2006 60200231	BCS-2 BCS-2 46-48 2/24/2006 60200231	BCS-3 BCS-3 12-14 2/27/2006 60200231	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Eastern USA Background Criteria
TAL Metals (mg/Kg)							
Antimony	ND	ND	ND	ND	ND	NS	NS
Aluminum	13800	6190	16700	4260	13100	NS	33000
Arsenic	***101***	2.06	***58.4***	4.86	***49.3***	7.5	3 - 12
Barium	428	38.3	425	27.6	343	NS	15 - 600
Beryllium	ND	ND	0.712	ND	0.556	1.6	0 - 1.75
Cadmium	***3.94***	ND	***14.7***	ND	***9.87***	1	0.1 - 1
Chromium	***139***	**12.9**	***391***	**13.1**	***322***	10	1.5 - 40
Calcium	5290	9110	5730	934	4700	NS	130 - 35000
Iron	31000	13200	36500	16500	29000	NS	2000 - 550000
Cobalt	10.1	4.91	12.4	9.00	10.1	NS	2.5 - 60
Copper	***496***	10.6	***567***	13.2	***451***	25	1 - 50
Lead	***1250***	5.00	***938***	6.33	***750***	500	500
Magnesium	*6220*	4930	*6810*	1540	*5590*	NS	100 - 5000
Manganese	334	283	358	330	299	NS	50 - 50000
Mercury	***11.3***	ND	***6.11***	ND	***5.14***	0.1	0.001 - 0.2
Nickel	***39.8***	11.6	***57.8***	10.6	***42.2***	13	0.5 - 25
Vanadium	42.9	18.1	59.0	19.5	40.6	NS	1 - 300
Selenium	***7.93***	**2.23**	***8.69***	**2.60**	***6.91***	2	0.1 - 3.9
Potassium	3120	1810	3830	867	2730	NS	8500 - 43000
Silver	7.15	ND	12.8	ND	8.97	NS	NS
Sodium	2900	809	4380	294	1540	NS	6000 - 8000
Thallium	ND	ND	ND	ND	ND	NS	NS
Zinc	***634***	**25.1**	***858***	**24.7**	***713***	20	9 - 50
Total Cyanide	7.26	ND	5.53	ND	2.17	NS	NS

Table 8
Summary of Analytical Results - Sediment
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-3 BCS-3 36-38 2/28/2006 60300025	BCS-4 BCS-4 6-8 2/28/2006 60300025	BCS-4 BCS-4 38-40 3/2/2006 60300025	BCS-5 BCS-5 8-10 3/3/2006 60300025	BCS-5 BCS-5 40-42 3/6/2006 60300082	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Eastern USA Background Criteria
TAL Metals (mg/Kg)							
Antimony	ND	ND	ND	ND	ND	NS	NS
Aluminum	5420	8380	2400	17500	10800	NS	33000
Arsenic	1.83	***26.2***	1.64	***53.7***	2.84	7.5	3 - 12
Barium	47.4	266	13.4	402	56.8	NS	15 - 600
Beryllium	0.393	ND	ND	1.12	0.678	1.6	0 - 1.75
Cadmium	ND	***10.7***	ND	***22.0***	ND	1	0.1 - 1
Chromium	**14.3**	***240***	**10.2**	***790***	**26.6**	10	1.5 - 40
Calcium	6140	5220	823	9890	1760	NS	130 - 35000
Iron	15100 B1	31300 B1	12100 B1	40700 B1	27400 B1	NS	2000 - 550000
Cobalt	ND	ND	ND	ND	11.2	NS	2.5 - 60
Copper	12.1	***713***	12.1	***674***	20.4	25	1 - 50
Lead	6.16	***919***	4.73	***1870***	11.7	500	500
Magnesium	3860	3730	926	*7670*	3400	NS	100 - 5000
Manganese	315	220	161	418	517	NS	50 - 50000
Mercury	ND	***2.73***	ND	***4.14***	ND	0.1	0.001 - 0.2
Nickel	11.8	***44.0***	6.29	***125***	**18.3**	13	0.5 - 25
Vanadium	19.0	33.3	19.6	131	33.6	NS	1 - 300
Selenium	ND	ND	ND	ND	**3.15**	2	0.1 - 3.9
Potassium	1350	1880	438	4060	1790	NS	8500 - 43000
Silver	ND	7.40	ND	21.3	ND	NS	NS
Sodium	274	1760	214	5610	689	NS	6000 - 8000
Thallium	ND	ND	ND	ND	ND	NS	NS
Zinc	**27.5**	***561***	15.5	***988***	**47.6**	20	9 - 50
Total Cyanide	ND	15	ND	57	9.0	NS	NS

Table 8
Summary of Analytical Results - Sediment
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-6 BCS-6 10-12 3/6/2006 60300082	BCS-6 BCS-6 36-38 3/9/2006 60300082	BCS-7 BCS-7 10-12 3/9/2006 60300082	BCS-7 BCS-7 44-46 3/13/2006 60300130	BCS-8 BCS-8 24-26 3/13/2006 60300130	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Eastern USA Background Criteria
TAL Metals (mg/Kg)							
Antimony	6.37	ND	ND	ND	ND	NS	NS
Aluminum	16700	7500	20600	10900	12200	NS	33000
Arsenic	***44.9***	3.28	**18.1**	2.93	***51.5***	7.5	3 - 12
Barium	*736*	68.5	186	36.4	441	NS	15 - 600
Beryllium	0.989	0.446	0.953	0.779	0.846	1.6	0 - 1.75
Cadmium	***20.7***	ND	***7.23***	ND	***11.8***	1	0.1 - 1
Chromium	***701***	**19.5**	***310***	**25.1**	***421***	10	1.5 - 40
Calcium	10100	3110	6700	1370	5020	NS	130 - 35000
Iron	39200 B1	20900 B1	37500 B1	22700 B1	34400 B1	NS	2000 - 550000
Cobalt	13.7	8.12	13.0	8.99	11.7	NS	2.5 - 60
Copper	***613***	18.3	***394***	20.0	***498***	25	1 - 50
Lead	***1640***	7.66	***528***	11.7	***1350***	500	500
Magnesium	*8020*	3950	*9310*	3100	*6180*	NS	100 - 5000
Manganese	396	349	565	499	297	NS	50 - 50000
Mercury	***5.12***	ND	***3.39***	ND	***6.14***	0.1	0.001 - 0.2
Nickel	***114***	**20.9**	***59.8***	**16.8**	***52.9***	13	0.5 - 25
Vanadium	117	32.8	68.1	32.5	52.3	NS	1 - 300
Selenium	***6.49***	**2.31**	***4.84***	ND	***5.38***	2	0.1 - 3.9
Potassium	4190	1320	5090	1850	3080	NS	8500 - 43000
Silver	19.5	ND	13.4	ND	10.9	NS	NS
Sodium	*10900*	490	*10500*	1170	*8320*	NS	6000 - 8000
Thallium	ND	2.26	ND	ND	ND	NS	NS
Zinc	***1000***	**41.6**	***446***	***50.7***	***936***	20	9 - 50
Total Cyanide	38	ND	6.5	52	1.4	NS	NS

Table 8
Summary of Analytical Results - Sediment
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number	BCS-8	BCS-9	BCS-9	BCS-10	BCS-10	NYSDEC	NYSDEC
Sample ID	BCS-8 48-50	BCS-9 16-18	BCS-9 42-44	BCS-10 12-14	BCS-10 46-48	Recommended	Eastern USA
Sample Date	3/14/2006	3/15/2006	3/16/2006	3/16/2006	3/21/2006	Soil Cleanup	Background
Lab Identification Number	60300130	60300130	60300130	60300130	60300199	Objective	Criteria
TAL Metals (mg/Kg)							
Antimony	ND	ND	ND	ND	ND M2	NS	NS
Aluminum	6830	16900	9800	8900	4950 MHA	NS	33000
Arsenic	4.27	***35.1***	2.54	***55.9***	ND	7.5	3 - 12
Barium	16.2	417	30.3	355	48.0	NS	15 - 600
Beryllium	0.508	1.20	0.602	0.600	0.401	1.6	0 - 1.75
Cadmium	ND	***17.0***	ND	***6.77***	ND	1	0.1 - 1
Chromium	**12.7**	***514***	**22.4**	***281***	**13.2**	10	1.5 - 40
Calcium	1760	6060	2100	7290	10400 M2	NS	130 - 35000
Iron	40100 B1	36900 B1	20500 B1	32800 B1	42700 MHA	NS	2000 - 550000
Cobalt	ND	13.1	11.4	8.56	6.49	NS	2.5 - 60
Copper	6.24	***545***	**31.7**	***354***	**27.1**	25	1 - 50
Lead	4.88	***1370***	9.44	***1700***	7.78	500	500
Magnesium	1480	*7080*	3150	4480	*6650* M2	NS	100 - 5000
Manganese	1050	360	322	274	655 MHA	NS	50 - 50000
Mercury	ND	***7.27***	ND	***2.19***	ND	0.1	0.001 - 0.2
Nickel	6.11	***69.9***	**19.1**	***44.1***	9.86	13	0.5 - 25
Vanadium	15.0	77.0	46.6	31.2	37.8	NS	1 - 300
Selenium	ND	***4.48***	ND	***4.36***	ND	2	0.1 - 3.9
Potassium	376	4100	1670	2120	1590	NS	8500 - 43000
Silver	ND	15.6	ND	6.56	0.684	NS	NS
Sodium	957	*10200*	1140	3340	946	NS	6000 - 8000
Thallium	ND	4.26	ND	ND	ND	NS	NS
Zinc	16.3	***900***	**40.9**	***771***	**33.6**	20	9 - 50
Total Cyanide	ND	26	ND	3.2	ND	NS	NS

Table 8
Summary of Analytical Results - Sediment
Target Analyte List Metals
Bushwick Creek Inlet Site Investigation

Boring Number Sample ID Sample Date Lab Identification Number	BCS-11 BCS-11 18-20 3/21/2006 60300199	BCS-11 BCS-11 50-52 3/22/2006 60300199	BCS-11 BCS-11D 50-52 3/22/2006 60300199	NYSDEC Recommended Soil Cleanup Objective	NYSDEC Eastern USA Background Criteria
TAL Metals (mg/Kg)					
Antimony	ND	ND	ND	NS	NS
Aluminum	12100	4440	4040	NS	33000
Arsenic	*228*	4.72	4.24	7.5	3 - 12
Barium	476	14.6	16.3	NS	15 - 600
Beryllium	0.549	0.561	ND	1.6	0 - 1.75
Cadmium	***1.57***	ND	ND	1	0.1 - 1
Chromium	***94.4***	**29.3**	**23.3**	10	1.5 - 40
Calcium	5220	502	496	NS	130 - 35000
Iron	29900	76000	93900	NS	2000 - 550000
Cobalt	9.48	ND	ND	NS	2.5 - 60
Copper	***876***	24.1	24.5	25	1 - 50
Lead	***1830***	10.1	8.84	500	500
Magnesium	*5720*	645	750	NS	100 - 5000
Manganese	331	689	991	NS	50 - 50000
Mercury	***9.40***	ND	ND	0.1	0.001 - 0.2
Nickel	***32.2***	8.58	ND	13	0.5 - 25
Vanadium	36.3	49.4	45.9	NS	1 - 300
Selenium	ND	ND	ND	2	0.1 - 3.9
Potassium	2820	353	422	NS	8500 - 43000
Silver	2.64	1.01	1.54	NS	NS
Sodium	*6920*	1180	1040	NS	6000 - 8000
Thallium	ND	ND	ND	NS	NS
Zinc	***754***	**44.9**	**48.2**	20	9 - 50
Total Cyanide	4.0	ND	ND	NS	NS

Notes:
(1) Bold - Indicates value that exceeded the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives.
(2) Italic - Indicates value that exceeded the NYSDEC TAGM 4046 Eastern USA Background Criteria.
(3) ND - Non-detected above laboratory method detection limit.
(4) NS - No Standard.
(5) B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
(6) M2 - The MS and/or MSD were below the acceptance limits due to sample matrix interference.
(7) MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information.