CORNERSTONE
Engineering and Land Surveying, PLLC

90 Crystal Run Road, Suite 201 • Middletown, NY 10941 • (877) 294-9070 • Fax: (845) 692-5894

June 12, 2012

VIA E-MAIL

Mr. Jonathan Greco
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, 12th Floor
Albany, New York 12233-7016

Re: New York City Department of Sanitation
Brooklyn Navy Yard Parcel, Soil Remediation (ID No. 224019A)
Remedial Action Work Plan

Dear Mr. Greco:

As we have recently discussed, the New York City Department of Sanitation (DSNY) has retained a Remedial Action Contractor (DCA Construction Ltd.) to implement the remedial action for Operable Unit No. 1 at the above-referenced 13-Acre Brooklyn Navy Yard Parcel. The Remedial Action Contractor (RAC) has mobilized to the site and started site preparation activities such as clearing parked vehicles (DCAS Area) and debris for access to the cap areas. The RAC is prepared to continue with remedy implementation; however, the NYSDEC has indicated that certain information normally contained in a Remedial Action Work Plan (RAWP) is still required, such as an updated schedule, identification of the certifying engineer, and typical details for decontamination, community air monitoring, and the like.

In accordance with DER-10, Sections 5.2 and 5.3, a RAWP should not be necessary if a detailed remedial design is performed. The remedial design previously approved by the Department contains the same type of information as would be contained in a RAWP. However, DSNY understands that the Department wishes to review certain supplemental information that becomes available after a RAC is selected to perform the work. In this vein, on behalf of DSNY the purpose of this letter is to outline the means by which the information that would typically be in a RAWP, including RAC-specific information, has been or will be provided to the Department. Each item is described further below.

<u>Certifying Engineer:</u>

HDR/HydroQual has been the design engineer, and will continue in the role as the engineer of record for the remedy implementation. Specifically, Mr. Michael Musso, a licensed professional engineer registered in the State of New York, will be the certifying engineer for

the remedy implementation and future certification requirements (e.g., environmental easement). A copy of Mr. Musso's curriculum vitae is attached for reference.

Updated Project Schedule:

An updated project schedule is attached based on the RAC's expectations for the timing and sequence of the work, the initial mobilization date of June 1, 2012, and an assumption that the Department's interest in additional "RAWP information" will be resolved by this letter and supplemental submittals in the near future.

RAWP Technical Components:

The majority of the information that would be contained in a RAWP is currently contained in the final design previously approved by the NYSDEC. The design components include:

- An *Engineering Design Report* that presents the basis of the remedial design and the results of a pre-design investigation.
- A *Construction Quality Assurance (CQA) Plan* that provides information on the project organization and personnel qualifications, communication, CQA/CQC procedures, and recordkeeping. In addition, appended to the CQA Plan are a *Field Sampling Plan* and a *Quality Assurance Project Plan* which would apply to the sampling and analysis to be performed for certain remedy verification purposes.
- A *Site Management Plan*, prepared in accordance with NYSDEC guidance and to which is appended an *Excavation Work Plan*, a *Health and Safety and Community Air Monitoring Plan*, an *Inspection Form*, and a *Quality Assurance Project Plan*.
- *Technical Specifications* that present details on the materials, means, and methods for remedy implementation.
- *Engineering Drawings* that illustrate and define graphically the various components of the remedy.

These documents fulfill the requirements for a RAWP. However, in addition to the above, the contract documents from the DSNY, which govern the RAC's work, require certain submittals that provide additional detail on RAC-specific procedures, means, and methods. DSNY's intent is as these submittals are prepared and processed they will also be provided for NYSDEC's information to complete the details regarding remedy implementation. Specifically, the following submittals would be provided to the NYSDEC for review and approval as they are processed:

- Contingency Plan
- Decontamination Plan
- Health & Safety Plan and Community Air Monitoring Plan
- Field Sampling Plan
- In-situ Soil Sampling & Analysis Plan
- Impacted Soil Management Plan & Staging Areas

- Dust Control Plan
- Soil Excavation, Transport and Disposal Plan
- Backfill Materials Information
- Sedimentation and Storm Water Control Plan
- Proposed Transporter Documentation
- Disposal Facility Documentation

Since submittals are processed as the RAC's work is ongoing, the above submittal information would be provided to the Department in advance of the work associated with each submittal. Timely review is essential during implementation and DSNY respectfully requests that if the Department has any comments on any of the submittal information that such comments be provided within three days from date of receipt.

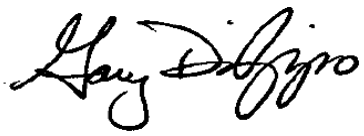
As clarification, Cornerstone has been retained as a subcontractor to HDR/HydroQual to assist with remedy implementation based on the past involvement of Gary DiPippo, P.E., formerly an employee of HydroQual. HDR/HydroQual remains as the engineer of record for this project.

If you have questions or require any additional information, please contact either Marshah-Reaff Barrett at DSNY (646-885-4776) or Gary DiPippo at Cornerstone (845-695-0251).

On behalf of DSNY, thank you for your attention to the information contained in this letter. DSNY will plan to proceed in general accord with this letter and the attached schedule unless hearing otherwise from the Department.

Sincerely,

CORNERSTONE ENGINEERING AND LAND SURVEYING, PLLC



Gary J. DiPippo, P.E.
Manager, Hydrogeology & Remediation

Enclosures

cc: K. Keane
K. Fitzpatrick

Michael P. Musso, P.E.

Education
M.P.H., Environmental Health Science, 2007
M.S., Environmental Engineering, 1996
B.S., Civil Engineering, 1991

Acknowledgements
HDR Professional Associate

Registrations
Professional Engineer State of New York

Training
40-hr OSHA Training for Hazardous Materials Waste Activities;
8-hr Health and Safety Supervisor Training;
RBCA for Petroleum and Non-Petroleum Chemicals (3-day course at ASTM Headquarters);
NJDEP Subsurface Evaluation Certification for Underground Storage Tanks (USTs);
5-day Short Course: Hierarchical/Multi-objective Approach in Water Resources Planning and Management (University of Virginia); Program on Addressing Mold and IAQ Problems (1-day short course);
MCACES, 2nd Generation (MII) Basic Training (3-Day course given by Project Time & Cost, Inc.);
November 2008 Ecological Risk Assessment: Practice and Protocols (April 2008), Rutgers University (2-day course)

Experience
Mr. Musso is a Senior Project Engineer with over 20 years' experience in environmental engineering, consulting, and regulatory compliance. He has had hands-on experience with managing site investigations, human health risk and exposure assessments, and remedial design projects, including those with chemical and hazardous and solid waste management operations at industrial facilities. Mr. Musso has conducted several remedial investigation/feasibility studies (RI/FSs, including risk assessments; CERCLA and NYSDEC guidance) for soil, sediment, surface water, air, and groundwater investigations and remediation projects which have entailed the identification, screening, and detailed cost estimating of viable alternatives. He has developed detailed conceptual designs and project life cost evaluations for numerous projects.

As part of his technical responsibilities at HDR, Mr. Musso has performed baseline human health risk assessments and exposure pathway analyses for industrial, landfill, and proposed re-development sites. His expertise relating to exposure pathway analyses and conceptual site models are often utilized at the inception of many types of projects, and his input is sought in helping determine possible remedial requirements and associated costs/timeframes. He has reviewed and statistically analyzed data from several environmental media, including soil, groundwater, sediment, surface water, air, and soil gas. Portions of risk assessments on which Mr. Musso has worked have included the evaluation of vapor intrusion potential using Johnson & Ettinger (EPA) modeling and risk-based corrective action (RBCA) approaches. In addition, he has researched and summarized toxicological profiles (carcinogenic and noncarcinogenic effects of multiple contaminants including VOCs, SVOCs/PAHs, metals, pesticides/PCBs), and is familiar with "equivalence factors" used in assessing PAHs and dioxin. Depending on the level of effort required and contemplated end use of properties,
Mr. Musso conducts qualitative or quantitative exposure assessments for different future use scenarios at various sites. He has developed site-specific risk-based screening levels and action levels for remediation at several sites based on the acceptable hazard index and carcinogenic risk ($1x10^{-4}$ to 1x10).

Mr. Musso has a working knowledge of toxicological and public health aspects of chemical development and use, along with an understanding of applicable state and Federal regulations. Mr. Musso is very familiar with the development and oversight of health and safety programs, and he has much knowledge in field procedures and environmental monitoring activities. He has collected soil, groundwater, and air samples at numerous sites and assembled soil boring, test pit, and monitoring well logs. Mr. Musso has prepared sampling methodologies, site characterization reports, and remedial action work plans (including Voluntary Cleanup and BCP projects in New York State), and has been involved with the preparation of remedial design specifications and contract documents. Mr. Musso has also conducted Phase I environmental site assessments at numerous sites in New York and New

Lecture Experience:
NYWEA: Persistent, Bioaccumulative, and Toxic Compounds (PBTs). December 12, 2001.

NYWEA/AWWA: Human Health
Aspects of Pathogenic Protozoans
Emphasizing *Cryptosporidium*. February 28, 2001.

Rockland County Municipal Planning Federation. *Cell Tower symposium*. November 26, 2007.

2009 Conference on Design and Construction Issues at Hazardous Waste Sites. *Overcoming Project Cost Uncertainties through Risk Analysis and Management Tools*. April 14, 2009.

2010 Green Remediation Conference (Amherst, MA). *Transparency in Selection of Sustainable Remedies*. June 17, 2010.

Academia:
Adjunct Instructor, Columbia University (2009 – present): Mailman School of Public Health; School of International and Public Affairs. *Risk Assessment & Toxicology*

Topics: Arsenic (cost-benefit of treatment and risk reduction). 2001, 2002; 2010.

Risk Assessment Course: Overview of Risk-Based Corrective Action (RBCA) 2000.

Jersey. Mr. Musso is very familiar with the development and oversight of health and safety programs, and he has much knowledge in the theory and field procedures associated with industrial hygiene and environmental monitoring activities. Representative projects include:

Standby State Superfund Contract (D006129) - Inspection and Monitoring (I&M) of Subslab Depressurization (SSD) Systems, Statewide, NY. Mr. Musso is the project manager for this statewide SSD System I&M program that consists of inspecting and monitoring over 370 systems across the State. Mr. Musso is responsible for managing major subtasks, including work plan development, routine I&M, non-routine maintenance, annual reporting, and assistance with NYSDEC data transfer and databasing. He coordinates and manages public communication, subcontractor procurement and management, staff training, and detailed financial tracking. The work includes tracking and reporting success rates of I&M tasks (e.g., success rates of obtaining access to homes; completion of recovery system repairs), and on program financials. Mr. Musso prepares periodic program updates to NYSDEC.

Standby State Superfund Contract (D006129) - Feasibility Study: Former Raeco Products Site, Rochester, NY. Mr. Musso is managing the feasibility study for the former Raeco Products site. The project includes a detailed review and interpretation of all pre-existing environmental data; identification of major AOCs for VOC, SVOC, and metals contaminants in surface soil, subsurface soil, soil gas/indoor air, and groundwater; identification and screening of viable remedial alternatives for the contaminants and media of concern; development of conceptual costs for remedial alternatives; assistance with Proposed Remedial Action Plan (PRAP) development.

Ace Insurance – Claim Reviews. Mr. Musso is managing the tracking and technical review of environmental claims submitted by a retail gasoline company that includes more than 150 gasoline station sites in the Northeastern United States. Claim reviews include assessment of the nature and timing of spills/releases; review of investigatory and re-medial costs in terms of reasonableness and appropriateness; and verification of State agency directives in terms of remedial programs for USTs and remedial impacts.

Environmental Services including Operation, Maintenance and Monitoring (OM&M) of on-site water treatments system (Private Client; Active Private School Site, NYC). As part of a voluntary cleanup project (NYSDEC Region 2), Mr. Musso has managed all environmental items during property transfer and construction of a new private school in Manhattan. Collected split samples and performed oversight of the PRP agents, and evaluated the need for vapor intrusion control due to residual contaminant levels in the subsurface. He was also asked to participate at school board meetings and community board meetings in Manhattan on behalf of the project. As part of on-going activities since the school construction was completed, Mr. Musso has provided design and OM&M services to an active water treatment unit at the site. He has obtained all necessary NYC discharge permits on behalf of the client and actively manages OM&M activities. Environmental auditing and exposure assessment continue at the school (indoor air testing with Summa canisters [TO-

15 analysis]; HVAC reviews), under the Site Management Plan developed by Mr. Musso.

USEPA Region 2 RAC, RI/FS Projects, Nassua County and Brooklyn, NY. Mr. Musso is serving as task leader for USEPA Region 2 RAC assignments, including the Governors Canal proposed Superfund site in Brooklyn and the Peninsula Boulevard Groundwater Plume Superfund Site in Nassau County, NY. Mr. Musso is involved in human health risk assessment, community involvement and review of field activities. For the Governors Canal site, Mr. Musso is involved with developing work plans and costs for various RI activities, including data gap analysis and sediment coring. For the Peninsula Boulevard site, Mr. Musso is reviewing alternate groundwater sampling approaches, such as multilevel wells and continuous multi-tunnel tubing (CMT) wells. Mr. Musso is involved with HHRA and EPA coordination on the RAC assignments.

NYSDEC New Cassel Industrial Area - Long Island, NY. Mr. Musso prepared qualitative human health exposure pathway analyses under NYSDEC review. These analyses consisted of identifying site-specific contaminants of concern and potential exposure points for human receptors (direct contact, drinking water). Mr. Musso developed the RI/FS, including conceptual designs of soil, dry well, and groundwater remediation systems, cost estimates, data analyses, and reports. Remedial alternatives identified and assessed (based on feasibility, cost, and other CERCLA parameters) included: soils- excavation and off-site disposal, soil vapor extraction (SVE), monitored natural attenuation (MNA), groundwater – air stripping/soil vapor extraction (AS/SVE), in-well circulation/vapor stripping systems (emerging technology); pump and treat with activated carbon, and MNA.

Jones Sanitation NPL Site, Hyde Park, NY. Mr. Musso conducted technical reviews of historic site information and activities that led to the impact of environmental media with chlorinated solvents (VOCs) and metals. Mr. Musso reviewed HTRW field investigation methods and corresponding data including groundwater, surface water, soils, leachate, solid waste and air. Mr. Musso assisted with the identification and screening of remedial options/costs used in the FS. Engineering services

NYSDOT Annsville Circle Assessment and Remediation. For this investigation and remediation at a proposed New York State Office Parks and Recreation & Historic Preservation (NYSOPRHP) kayak launch facility in Westchester County, Mr. Musso coordinated geophysical surveys and subsurface investigations. Based on data interpretations and meetings with project stakeholders, Mr. Musso prepared remediation specifications and bid documents which entailed source removal, soil erosion and sediment control, transportation and disposal of contaminated soil, oxygen releasing compound (ORC®) application, and site restoration. He managed field activities, personnel, and the remediation contractor.

Former Salina Landfill Human Health Risk Assessment, Salina, NY. Mr. Musso performed the baseline human health risk assessments and exposure pathway analyses. As part of this effort, he reviewed and analyzed data from

several environmental media; researched the toxicological profiles (carcinogenic and noncarcinogenic effects) for numerous contaminants; evaluated the exposure scenarios for different environmental media; and characterized levels of risks for various human receptors in current and future land use scenarios.

NYSDOT Mineola (Long Island, NY) Property Assessment and Remediation. Mr. Musso's responsibilities involved supervision of the subsurface investigation (geophysical surveys plus soil and groundwater sampling at an active commercial facility) and subsequent data interpretation. He prepared budget estimates and managed field activities, staff, and subcontractors during site investigation and UST removal activities. Mr. Musso also completed a human health exposure assessment that was integral to spill closure from NYSDEC Region 1.

Salina (New York) Landfill Risk Assessment (Town of Salina/NYSDEC). Mr. Musso performed the baseline human health risk assessment and exposure pathway analyses for this site in compliance with State and USEPA requirements. Tasks included the appropriate exposure/risk assessment scoping with NYSDEC and USEPA case managers at the initiation of the project to determine level-of-effort. Reviewed and statistically analyzed data from several environmental media, while comparing chemical concentrations to project-specific criteria and standards (e.g., soil and shallow sediment values were assessed against NYS RSCOs, EPA Region 3 SSLs/RBCs, and EPA Region 9 PRGs). Researched EPA IRIS and ATSDR toxicological profiles (carcinogenic and noncarcinogenic effects) for all contaminants of concern, identifying the appropriate RfD and CSF for each chemical of interest across different exposure routes (dermal/incidental ingestion vs. inhalation). Mr. Musso evaluated exposure scenarios for adult and children for different environmental media by developing exposure concentrations, frequencies, and durations. He also characterized levels of risks for receptors in current and future land use scenarios. Results of the risk assessment were incorporated into the feasibility study and ultimate remedy selection process for appropriate risk management.

Risk assessments were conducted in accordance with EPA RAGS guidance (Parts C and D, specifically). Mr. Musso also assisted the ecological risk assessor with screening of potential contaminants of concern and adherence to EPA ERAGS guidance.

NYSDEC Multi-Site Preliminary Assessments. As project manager for eight Preliminary Site Assessment (PSA) sites under a NYSDEC work order, Mr. Musso managed all field activities, personnel, and subcontractors related to the work. Sites included a mix of industrial facilities with various histories of chemical uses and discharges, including freons, PCE/TCE (solvents and dry cleaning fluids), pesticides (from on-site manufacturing), metal plating, and illegal solid waste disposal. Maintained close contact with the NYSDEC case manager, coordinated site access for field work, and prepared the final PSA decision-making forms and reports detailing the findings, conclusions, and recommendations.

Wireless Telecommunication Facility Reviews (Ongoing, Multiple NYS Municipal Clients). Program Manager. Mr. Musso serves as the HDR program manager for wireless telecommunications facility siting projects on behalf of several NYS municipalities. He has been project manager for wireless facility siting efforts for the villages of Rye Brook, Port Chester, Scarsdale, Haverstraw, Goshen, and Sleepy Hollow, the City of Mount Vernon, and the Towns of Greenburgh, Somers, Newburgh, and Marlborough in NY. Responsibilities have included the technical reviews of applications for completeness (FCC, local codes); assessment of coverage and capacity information; analysis of health and safety criteria relating to non-ionizing electromagnetic radiation; coordination of field surveys and visual impact analyses; and participation at public meetings. Mr. Musso has reviewed wireless telecommunication facilities (code/ordinance items, analysis of decommissioning procedures, inventory and inspection of sites) and developed and managed a wireless locational plan study for the Village of Sleepy Hollow. A key issue with wireless telecommunication facility projects involves the real and perceived issues of radio frequency emissions at base stations (cell towers, roof top installations). Mr. Musso completed a three-day training course (Narda) in health & safety and assisted with reviewing emission calculations and field measurements.

The Related Companies – Staten Island, New York. Mr. Musso performed human health exposure assessments for baseline condition (abandoned oil refinery) and future use scenarios (NASCAR Raceway, Open Space park, Retail, and Warehousing). Identification of contaminates of concern in soil, groundwater, and soil gas, using project-specific standards and guidance (soil: NYSDEC RSCOs, EPA RBCs, EPA draft Vapor Intrusion Guidance; groundwater: NYS Class GA standards, EPA draft Vapor Intrusion Guidance; soil gas: EPA draft Vapor Intrusion Guidance and modeling based on J&E, actual geology, and anticipated attenuation factors given different end uses). Conducted and reviewed statistical calculations of soil background levels while identifying potential contaminants of concern (PCOCs) for the project. Assessed exposure frequencies and durations on on-site workers (field, office), spectators and other recreators (based on contemplated race events), and retail customers. Literature, raceway statistics, and EPA Exposure Factors handbooks were consulted to develop mean exposure scenarios.

The findings from the exposure assessments were presented to NYSDEC Region 2 and used to prescribe hot-spot soil remediation, vapor control in buildings, and to evaluate final ground cover options. Mr. Musso was involved in the conceptual design and costing of methane control alternatives along with VOC vapor intrusion options (vapor barriers, active/passive sub-slab venting).

New York City School Construction Authority (NYCSCA) Environmental Services Term Contract. Mr. Musso served as Program Manager for the NYCSCA Environmental Services term contract. As part of his responsibilities, he coordinated over 20 projects throughout the New York City Boroughs, ranging from Phase I/II due diligence and property

assessments, to vapor intrusion studies, contractor specification reviews, conceptual design and screening of remediation options, remedial action review and oversight, and public participation/risk communication.. Mr. Musso was responsible for all staffing and scheduling, and created project scopes and budgets. He also participated at public hearings on behalf of NYCSCA.

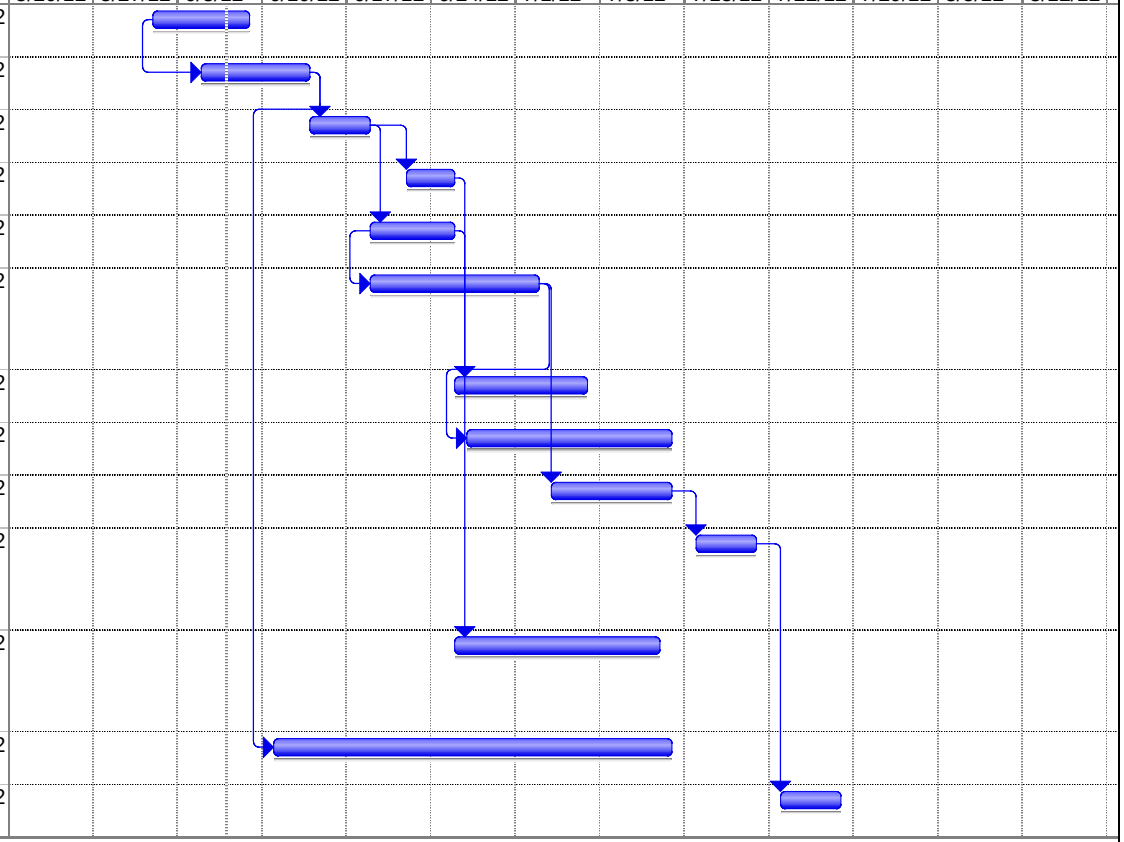
Mirant, Lovett Power Generating Facility Decommissioning Project (Stony Point, NY). Mr. Musso is serving as the Project Manager for numerous "on-call" tasks to support environmental review and compliance during the 2.5-year demolition project. He is working closely with the client representatives, demolition contractor, and the NYSDEC. Tasks on which Mr. Musso has directed or been involved with have included: RCRA inventory of hazardous materials (pre-demo); Army Corps of Engineers permit applications for in-water work; sampling of tiles to support Beneficial Reuse of demolition materials as fill (obtained approval from NYSDEC); reviewed existing environmental data and prepared range of remedial options and associated costs; WWTP decommissioning; preparation of stormwater pollution prevention plan (SWPPP), including updates an modifications based on evolving site conditions and evaluation of SWPPP measures; prepare Site Characterization Work Plan and investigatory approaches to assess subsurface contamination.

Mirant, Bowline Unit 3 SWPPP (Haverstraw, NY). Since 2004, Mr. Musso has served as the engineer of record for the inspection work associated with the stormwater pollution prevention plan (SWPPP) notice of intent (NOI) filed for construction of Unit 3. He has reviewed and documented changes in site conditions, and approved / organized inspection reports in accordance with NYS regulations for stormwater management.

Dynegy, Acute Effluent Toxicity Testing (Danskammer Facility, Newburgh, NY). As per the SPDES permit requirements for the Danskammer facility, Mr. Musso is managing an 12-month acute toxicity monitoring program. The program includes the assessment of potential impacts of specific effluent flows on two species: Ceriodaphnia dubia and Pimephales promelus. Mr. Musso has coordinated field sampling methods and laboratory analysis of acute toxicity. He has also reviewed site treatment processes, outfall flows, and storage of the flows of interest (coal pile runoff, metals wastes, and leachate from a solid waste management area). Mr. Musso is also interpreting results and will prepare a detailed report for NYSDEC.

Brooklyn Navy Yard Soil Remediation
Implementation Schedule, June 2012

Task Name	Duration	Start	Finish
Mobilization	6 days	Fri 6/1/12	Fri 6/8/12
Site Preparation and Clearing	7 days	Tue 6/5/12	Wed 6/13/12
Soil Erosion and Sediment Controls	3 days	Thu 6/14/12	Mon 6/18/12
Removal of Building 419	2 days	Fri 6/22/12	Mon 6/25/12
Milling/Excavation	5 days	Tue 6/19/12	Mon 6/25/12
DSA and Bldg. 419 Excavation and Post-Ex. Sampling	10 days	Tue 6/19/12	Mon 7/2/12
Paving	9 days	Tue 6/26/12	Fri 7/6/12
Millings Characterization	13 days	Wed 6/27/12	Fri 7/13/12
Soil Charactterization	8 days	Wed 7/4/12	Fri 7/13/12
Transportation and Disposal, Millings and Soil	5 days	Mon 7/16/12	Fri 7/20/12
Vegetated Area Excavation, Post-Ex Sampling, and Backfill	13 days	Tue 6/26/12	Thu 7/12/12
Survey	25 days	Mon 6/11/12	Fri 7/13/12
Demobilization	5 days	Mon 7/23/12	Fri 7/27/12



Project: MSProj11
Date: Thu 6/7/12

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

sanitation

BUREAU OF WASTE DISPOSAL
125 Worth Street
New York, NY 10013

June 27, 2012

VIA E-MAIL

Mr. Jonathan Greco
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, 12th Floor
Albany, New York 12233-7016

Re: New York City Department of Sanitation
Brooklyn Navy Yard Parcel, Soil Remediation (ID No. 224019A)
Submittals

Dear Mr. Greco:

As described in a letter from Cornerstone Environmental Group, dated June 12, 2012, the Remedial Action Contractor for the referenced site has prepared submittals in accordance with the contract documents issued by the New York City Department of Sanitation (DSNY). As also noted in the June 12 letter, these submittals would be provided to the Department for review and approval to aid in documenting that all of the relevant information that constitutes a Remedial Action Work Plan (RAWP) has previously been approved by the Department in the final design or is contained in the submittals.

Specifically, the submittals enumerated in the June 12 letter, which are attached to this letter are as follows:

- Contingency Plan
- Decontamination Plan
- Health and Safety Plan
- Community Air Monitoring Plan
- Field Sampling & Analysis Plan (combining the Field Sampling and In-Situ Soil Sampling and Analysis Plans)
- Soil Management Plan (combining the Impacted Soil Management Plan and the Soil Excavation, Transport and Disposal Plans)
- Dust Control Plan
- Backfill Materials Information (generic)
- Stormwater Pollution Prevention Plan

sanitation

BUREAU OF WASTE DISPOSAL
125 Worth Street
New York, NY 10013

To aid in your review of these submittals, below is a brief description of each submittal as relates to the previously approved design documents.

Contingency Plan – The basis for this plan is Section 2.5 of the Site Management Plan and Section A-12 of Appendix A of the Site Management Plan previously approved by the Department. The principal changes include inserting personnel names for DCA Construction, the Remedial Action Contractor, and including new paragraphs on accidental release of contaminated media and severe weather conditions.

Decontamination Plan – The basis for this plan is Attachment 12-1 of the Health and Safety Plan (a component of the SMP and the CQAP), previously approved by the Department. This material has been supplemented with a site plan and decontamination pad detail, and some additional narrative clarifying the personal decontamination station.

Health and Safety Plan – This plan is a minor modification (principally inserting names for the Remedial Action Contractor) of the previously approved Health and Safety Plan that was included with the SMP and CQAP as a part of the final design.

Community Air Monitoring Plan – this plan is essentially unchanged from the CAMP included with the previously approved final design documents.

Field Sampling and Analysis Plan – the basis for this plan is a combination of the field sampling portions of the Quality Assurance Project Plan (Appendix D of the SMP) and the Field Sampling Plan (Appendix A of the CQAP) previously approved by the Department. The information contained herein has been reorganized to be consistent with the sequence of work of the Remedial Action Contractor, and information regarding disposal facilities has been added.

Soil Management Plan – the basis for this plan is the Excavation Work Plan (appendix A of the SMP) previously approved by the Department. The modifications include minor revisions regarding specifics for on-site staging of materials (e.g., use of the existing salt shed).

sanitation

BUREAU OF WASTE DISPOSAL
125 Worth Street
New York, NY 10013

Dust Control Plan – The basis for this plan is Section A-15 of Appendix A of the Site Management Plan previously approved by the Department. This plan is virtually unchanged from the previously submitted information.

Backfill Materials Information – This plan is excerpted from Section A-10 of Appendix A of the Site Management Plan previously approved by the Department. Until specific sources of backfill are identified, this plan remains generic indicating the prevailing requirements that will be applied to acceptability of backfill requirements. Specific backfill data will be provided prior to materials being imported to the site as backfill.

Stormwater Pollution Prevention Plan – This is a plan prepared to comply with the requirements for coverage under the *General Permit for Stormwater Discharges from Construction Activity* (GP-0-10-001). A Notice of Intent is also included as an attachment for reference. The DSNY is submitting this plan based on input from the Department regarding the potential presence of fines associated with millings and the milling operation that will be performed to complete the capping work at the site. However, based on site inspections and DSNY's interpretation of soil disturbance, it is not clear that coverage under the general permit is necessary. Nonetheless, the soil erosion and sediment controls described in the SWPPP will be in place as the work proceeds, and the Notice of Intent has been be filed.

If you have questions or require any additional information, please do not hesitate to contact the undersigned at 646-885-4776 or Gary DiPippo at Cornerstone (845-695-0251).

The Remedial Action Contractor has already mobilized and the enclosed materials are being processed as normal construction submittals. As such, we would appreciate the Department completing its review in three days as explained in the June 12 letter from Cornerstone.

Thank you for your attention to the information contained in this letter.

Sincerely,

Enclosures

cc: G. DiPippo
K. Keane
K. Fitzpatrick
V. Alison
M. Musso

BROOKLYN NAVY YARD

13-ACRE PARCEL SITE - OPERABLE UNIT NO. 1
BROOKLYN, NEW YORK
NYSDEC SITE ID NO: 224019A

SITE SPECIFIC
HEALTH AND SAFETY PLAN

Prepared by:
DCA Construction Ltd.
64 Giegerich Avenue
Staten Island NY 10307

June 25, 2012

1. GENERAL INFORMATION

Site Information:	Brooklyn Navy Yard 63 Flushing Avenue Brooklyn NY 11205
Site Contact:	Marshah-Reaff Barrett NYC Department of Sanitation (DSNY)
Phone No.:	(646) 885-4776
Site Health & Safety Contact:	Vincent Alison DCA Construction, Ltd. (DCA)
Phone No:	(917) 913-1174

2. PROJECT INFORMATION

Site Classification(check, highlight or circle all that apply)

Hazardous (RCRA)___ Hazardous (CERCLA/State)__√__ UST/LUST____

First Entry ___ Manufacturing____ Municipal POTW____

Previously Characterized____ C and D Landfill____ Construction____

Industrial__√__ Sanitary Landfill____ ~~Other~~

Active Inactive ____ Inactive __√__

DCA Task & Objectives (attach additional sheet if necessary):

The work covered by this HASP includes oversight of the localized shallow excavation (less than 2 feet deep) in areas where previously completed sampling data indicated impacts from prior site activities and the installation of a site-wide cover. This work will be conducted with the assistance of excavation equipment which will be operated by DCA. Former Building 419 has been identified as being impacted by Polychlorinated biphenyls (PCBs) from historic operations. In addition, since lead concentrations exceeded Toxicity Characteristic Leaching Procedure (TCLP) criterion in Former Drum Storage Area A, the area was characterized as having characteristic hazardous waste. The localized PCB and TCLP lead areas (Former Drum Storage Area A and Former Building 419) will be addressed through excavation while the contamination on the remainder of the site will be addressed using a site-wide cover. Once soils above the TCLP lead criterion and the PCB soil cleanup criteria have been excavated, post-excavation confirmatory soil sampling would be conducted. Samples would be collected from both the excavation bottom and from the excavation sidewalls and analyzed for TCLP lead or PCBs. These excavations will be shallow (less than 2 feet) and will not require specific trenching and excavation health and safety protocols. If work in deeper excavations is deemed necessary, that work will not be conducted until an appropriate addendum to this HASP is prepared and approved. If a sample result exceeds the TCLP lead criterion or the PCB cleanup criteria, the excavation limits would be expanded and re-sampled until the

sample results for the excavation sidewall and excavation bottom samples are below the relevant criteria.

This HASP applies to DCA personnel working at the Brooklyn Navy Yard site and addressees emergency on-site procedures and health and safety related procedures for specific work activities, and additional requirements in accordance with 29 CFR 1910.120.

Tasks Performed by others:
Additional contractors will perform the site clearing, excavation, installation of the site-wide cover, building sub-slab depressurization systems (applicable when buildings are constructed on the site), site restoration and soil disposal. All contractors are required to have their own HASP in accordance with 29 CFR 1910.120 requirements.

PROJECT ORGANIZATION AND COORDINATION – The following personnel are designated to carry out the stated project job functions on site. (Note: One person may carry out more than one job function, not all positions must be filled for each project.)

Job Function	Name/Company	Phone
PROJECT MANAGER	Marshah-Reaff Barrett, DSNY Vincent Alison, DCA	646) 885-4776 (917) 913-1174
SITE SAFETY OFFICER	Vincent Alison, DCA	(917) 913-1174
ALTERNATE SITE SAFETY OFFICER	Joseph Lucchio, DCA	(917) 330-2905
PUBLIC INFORMATION OFFICER	Marshah-Reaff Barrett, DSNY	(646) 885-4776
ON-SITE PERSONNEL WITH CPR/FA		
FIELD TEAM LEADER	Vincent Alison, DCA	(917) 913-1174
FIELD TEAM MEMBERS	Vincent Alison, DCA Joseph Lucchio, DCA Joseph Alison, DCA Frank Byrnes, DCA	(917) 330-2905 (917) 330-2905 (386) 547-2911 (718) 984-3093
ON-SITE PERSONNEL WITH CPR/FA		
VISITOR:	FEDERAL AGENCY REPS (i.e., EPA, OSHA)	None
	STATE AGENCY REPS	TBD
	LOCAL AGENCY REPS	TBD
SUBCONTRACTORS: (X)	SUBCONTRACTOR(S) SITE SAFETY OFFICERS	SUBCONTRACTOR SHASP YES_____ NO___
All personnel arriving or departing the site should log in and out with the Recordkeeper.		

Onsite Control (Prevailing wind directions, Work Zones, etc.) (attach additional sheet if necessary): A Work Zone will be established by the Contractor around each area where remediation activities will occur. One work zone will be established in the area of Former Drum Storage Area A and Former Building 419.

3. PHYSICAL HAZARDS INFORMATION

(1) IDENTIFY POTENTIAL PHYSICAL HAZARDS TO					
	WORKERS Confined Space	X	Steep/uneven terrain		Surface Water
X	Heavy Equipment	X	Heat Stress		Drum Handling
X	Moving Parts	X	Extreme Cold		Noise
X	Heavy Lifting		Ionizing Radiation		Non-Ionizing Radiation
	Electrical		Traffic		Elevated Work Surface
	Overhead Hazards		Marine/Open Water Navigation		Trenching
	Underground Utilities		Biological Hazards		Sewage
(2) SAFETY EQUIPMENT REQUIRED FOR HYDROQUAL EMPLOYEES					
	Explosimeter		Barrier Tape		Lights
	Fall Protection Equipment		Traffic Cones		Lights – emergency
	Confined Space Equipment		A-B-C Fire Extinguisher	X	Communications – On Site
	Ladder		Tick Repellant		Communications - Off
X	First Aid Kit		Snake Bite Kit		Lockout/Tagout
	Eye Wash		Floatation Device (USCG)		
	Emergency Shower		Emergency Air Horn		
Other:	A personal data (hand-held) RAM meter for dust monitoring				Other
	A TSI air velocity meter for logging wind speed				
	A wind sock for wind direction				

Comment:

See Attachment 3-1 for Physical Hazard Analysis.

4. CHEMICAL HAZARDS INFORMATION

IDENTIFIED CHEMICAL HAZARDS

Data obtained from previous environmental site investigations and the Remedial Investigation (RI) have identified the following chemical hazards:

- PCBs are present at concentrations above cleanup criteria within and immediately adjacent to Former Building 419 and at Former Drum Storage Area A.

- Lead concentrations above Part 375 cleanup criteria were observed at a number of locations across the site. Elevated lead concentrations are within the range observed for historic fill. Concentrations of other metals, such as arsenic and copper, were observed above cleanup criteria, but were within the typical range for historic, urban fill. Elevated levels of these metals are most likely related to the historic, urban fill used to raise the site above mean sea level as opposed to subsequent site activities. Two samples in Former Drum Storage A exceeded the TCLP criterion for lead.

- Semivolatile organic compounds (SVOCs), specifically several polycyclic aromatic hydrocarbons (PAHs) at concentrations above both Part 375 and Brownfield criteria, were also observed throughout the site. Concentrations were consistent with those observed in historic fill. The distribution and concentrations observed supports the interpretation that the source of these SVOCs is not historic site activity but the historic fill used to create the site.

- Detectable concentrations of BTEX compounds (benzene, toluene, ethylbenzene and xylene), as well as several other VOCs, were observed in soil gas vapor samples. The reported BTEX compounds are consistent with the generally low VOC concentrations observed in soil and groundwater at the site, and the observed use of a majority of the site for vehicle and construction material storage. These concentrations, however, are below the OSHA permissible exposure limits (PEL) and would not be considered a hazard.

  Attachment 4-1 summarizes the range of metals, SVOC, VOC, and pesticide/PCB concentrations found in site soils during the RI.

DESCRIBE POTENTIAL FOR CONTACT WITH EACH MEDIA TYPE FOR EACH OF THE TASKS LISTED IN SECTION 2.4

The potential routes of exposure to the chemicals that may be present in the soils include: 1) direct dermal (skin) contact or absorption of contaminants; 2) ingestion by hand-to-mouth transfer of contaminants; and 3) inhalation of dust during construction activities.

For direct dermal contact or absorption, prevention of exposure is accomplished by the proper selection of protective clothing. Section 5 presents PPE requirements for this project.

For ingestion, prevention is accomplished through good hygiene practices, frequent hand washing, and enforcement of rules regarding eating, drinking and smoking.

For inhalation, prevention of exposure is accomplished by using appropriate vapor control measures, such as half-face dust respirator with HEPA cartridges.
The Site Safety Officer will brief the DCA field team on symptoms and signs of overexposure to chemical hazards.

5. PROTECTIVE EQUIPMENT LIST

TASK & CARTRIDGE	RESPIRATORS	USE	CLOTHING	GLOVES	BOOTS	OTHER
Oversight of Site Clearing, Excavation, Site Restoration, Site Cap Installation Activities	P-100 respirator for dust	Cont	T		S,O	H,N
Oversight of Post-Excavation Soil Confirmatory Sampling	P-100 respirator for dust	Cont	T		S,O	H, S/G, N
RESPIRATORS	APR CARTRIDGES	USE	CLOTHING	GLOVES	BOOTS	OTHERS
B = SCBA	O = Organic Vapor	Cont = Continuous	T = Tyvek	B = Butyl	F = Firemans	F = Face Shield
APR = APR	G = Organic vapor/acid gas	UP = Upgrad	P = PE Tyvek	L = Latex	L = Latex	G = Goggles
D = N/A	A = Asbestos		S = Saranex	N = Neo	N = Neo	H = Hard hat
E = Escape	P = Particulate		C = Cover-alls	T = Nitrile	S = Safety	S = Safety
AL = Airline	C = Combination organic vapor & particulate			V = Viton	O = Overboots	N = Hearing Protection
	OTH = Other			CN = Cotton		
				P = PVC		
				PA = Polyviny		
				SS = Silver		

6. HAZARD COMMUNICATION PROGRAM

If chemicals are introduced to the site by DCA (e.g., decontamination liquids, preservatives, etc.), bring a copy of the DCA Hazard Communication Program to the Site and attach Material Safety Data Sheets (MSDSs). The Site Safety Officer will review this information with field personnel prior to the start of the project. The Comprehensive List of Chemicals for this site is:

Not Applicable

7. ENVIRONMENTAL MONITORING

The following environmental monitoring instruments shall be used on site at the specified intervals.

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for particulates at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The intent of the CAMP is to provide a measure of protection for the downwind community from airborne contaminants due to site activities. See Attachment 7-1 for the CAMP.

Monitoring equipment is to be calibrated according to manufacturers' instructions. Record calibration data and air concentrations in the Health and Safety on-site log book.
See Attachment 7-1 for the CAMP

Recommended Action Levels for Upgrade or Downgrade of Respiratory Protection or Site Shutdown and Evacuation. See Attachment 7-1 for the CAMP.

8. HEALTH AND SAFETY TRAINING AND MEDICAL MONITORING PROGRAM

The records will be kept on site for DCA personnel's performing the invasive activities and will be available upon request.

9. PERSONAL MONITORING

The following personal monitoring will be in effect on site: Not Applicable

Personal Exposure sampling: Not Applicable

Medical monitoring: Not Applicable

A copy of personal monitoring results
(if collected) is to be sent to Corporate Health and Safety.

10. CONFINED SPACE ENTRY

(1) WILL CONFINED SPACE ENTRY TAKE PLACE? Yes No X

If yes, attach **Confined Space Entry Program** available from the Health and Safety Coordinator.

11. COMMUNICATIONS PROCEDURES

The following standard hand signals will be used in case of failure of radio communications:

Grip partner's wrist or both hands around wrist	Leave area immediately
Hands on top of head	Need assistance
X Air horn sounded 3 times	Notification for injury. Personnel should assemble at designated location.
X Thumbs up	OK, I am all right, I understand
X Thumbs down	No, negative

12. DECONTAMINATION PROCEDURES

Personnel and equipment leaving the Work Zone shall be decontaminated. The Site Safety Officer is responsible for monitoring adherence with the decontamination plan described below: Attach sketch of decontamination area as appropriate.

See Attachment 12-1 for details

1) _____

2) _____

3) _____

Others:_____

The following decontamination equipment is required: Potable water

_____

13. EMERGENCY PROCEDURES

The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for checking that the appropriate procedures are followed. See Section 14 for specific emergency information.

- Personnel Injury in the Work Zone: Upon notification of an injury in the Work Zone, the designated emergency signal – an air horn shall be sounded three times. Site personnel shall assemble at a location designated by the Site Safety Officer. The Site Safety Officer and Field Team Leader should evaluate the nature of the injury. The Site Safety Officer shall call 911, if applicable, or the designated emergency number for the site as listed in Section 14. No persons shall enter/reenter the Work Zone until the cause of the injury or symptoms is determined and eliminated or controlled.

- Personal Protective Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and others within the Work Zone shall immediately leave the Work Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

- Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal – an air horn sounded three times, shall be sounded and site personnel shall assemble at a location designated by the Site Safety Officer. The Site Safety Officer (or others in a life threatening situation) shall call 911 or the designated emergency number for the site as listed in Section 14 and personnel moved to a safe distance from the involved area. If others make the emergency call, the Site Safety Officer shall be notified immediately thereafter.

- Other Equipment Failure: If any other safety equipment on site fails to operate properly, the Field Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, personnel shall leave the Work Zone until the situation is evaluated and appropriate actions taken.

- The following emergency escape routes are designated for use in those situations where egress from the Work Zone cannot occur through the decontamination line (attach map, if available): Not Applicable

In situations when an onsite emergency results in evacuation of the Work Zone, personnel shall not reenter until:

- The conditions resulting in the emergency have been corrected.

- The hazards have been reassessed by the Site Safety Officer.

- The Site Safety Plan has been reviewed by the Site Safety Officer and Corporate Health and Safety Manager.

- Site personnel have been briefed on any changes in the Site Safety Plan by the Site Safety Officer.

Accident/Incident Reports – The following information will be conveyed by the Site Safety Officer to the Project Manager immediately and followed up as soon as possible with a written Accident/Incident report (Attachment 13-2)

- A brief description of the emergency
- The location, time and date of the event/accident/injury
- The number of persons injured and the severity of the injuries
- The name(s), company and positions of the injured person(s)
- The name and location of the medical facility where the injured person(s) were taken
- The name of the person reporting the event/accident/injury.

14. EMERGENCY INFORMATION

TO BE POSTED IN SITE-TRAILER/OFFICE AND/OR IN FIELD VEHICLES

LOCAL RESOURCES

Ambulance (name):	FDNY	Phone: 911
Hospital (name):	The Brooklyn Hospital Center	Phone: 911 or (718) 250-8075
Police (local or state):	84th Precinct	Phone: 911 or (718) 963-5311
Fire Dept. (name):	Engine 211 Ladder 119	Phone: 911
HAZ MAT Responder:		Phone:
On-Site CPR/FA(s):	TBD	Phone: TBD

DIRECTIONS TO NEAREST HOSPITAL – ATTACH MAP: See Attachment 14-1

The hospital is 6 minutes from the site.

DIRECTIONS TO NEAREST POLICE STATION: See Attachment 14-2

WHOM TO NOTIFY IN CASE OF ACCIDENT:

Project Managers:
Marshah-Reaff Barrett, DSNY
Office: (646) 885-4776

Site Safety Officer
Vincent Alison. DCA
Cell: (917) 913-1174

15. SAFE WORK PRACTICES

THE FOLLOWING PRACTICES MUST BE FOLLOWED BY PERSONNEL ON SITE

- Smoking, eating, chewing gum or tobacco, or drinking are forbidden except in designated areas.
- Ignition of flammable liquids within or through improvised heating devices (e.g., barrels) is forbidden.
- Contact with samples, excavated materials, or other contaminated materials must be minimized.
- Use of contact lenses is prohibited at all times.
- If drilling or other electrical or mechanical equipment is involved, know where the 'kill switch' is.
- All electrical equipment used in outside locations, wet areas or near water must be plugged into ground fault circuit interrupter (GFCI) protected outlets.
- Good housekeeping practices are to be maintained.
- In the event of extreme or hazardous weather-related working conditions (i.e., thunderstorm, limited visibility, extreme cold or heat) field tasks will be suspended at the discretion of the Site Safety Officer until conditions improve or appropriate protection from the elements is provided.

Site Specific Safe Work Practices:

The following site specific work practices shall be followed:

- Always remain in visual contact with the operator of heavy equipment.
- Never work or walk into the path of operating heavy equipment.
- Know emergency communication signals used and recognized by heavy equipment operators.
- Sampling will only take place when heavy equipment is not in motion.

16. EMPLOYEE ACKNOWLEDGEMENTS

PLAN REVIEWED BY: DATE:

Corporate Health & Safety:	Vincent Alison	_____
Project Manager:	Joseph Lucchio	_____
Project Leader:	Vincent Alison	_____

I acknowledge that I have read the information on this Site Safety Plan Short Form and the attached Material Safety Data Sheets (MSDSs). I understand the site hazards as described and agree to comply with the contents of this Plan.

EMPLOYEE (print name):	SIGNATURE DATE:
_____	_____
_____	_____
_____	_____

ATTACHMENT 2-1

EXPLANATIONS/DETAILS

The Brooklyn Navy Yard 13-Acre Parcel site is located on the northeast portion of the Brooklyn Navy Yard Development Corp. (BNYDC) Industrial Park and is operated by the New York City Department of Sanitation (DSNY). The site is bordered by the East River on the north and west, by Kent Avenue on the east, and by the remainder of the BNYDC industrial park on the south. The site includes a barge basin, the Former Building 419 transformer substation, two former drum storage areas, a former boat shop area and a former coal gasification plant area.

The Brooklyn Navy Yard 13-acre parcel site includes a barge basin, the Former Building 419 transformer substation, two former drum storage areas, a former boat shop area and a former gasification plant area. The surrounding area includes industrial, commercial and residential uses.

Operable Unit No. 1 (OU-1), which is the subject of this HASP, consists of approximately 9.5 acres of the 13-acre site and includes two former drum storage areas, a railroad siding area, the Former Building 419 transformer substation, the Department of Citywide Administrative Services (DCAS) area, the treed area along Kent Avenue and DSNY staging areas. The remaining operable unit for this site is the "Former Brooklyn Navy Yard Manufactured Gas Plant (MGP)" site (a.k.a.OU-2 or the "Nassau Works MGP" site), which occupies approximately 3.5 acres of the 13-acre parcel. This portion of the site formerly housed the Nassau Works Manufactured Gas Plant and is currently the responsibility of Keyspan Energy Corporation (d/b/a National Grid) and is being investigated for contamination related to that use and is not part of this FSP/QAPP.

A primary contaminant leading to the listing of this site on the *Registry of Inactive Hazardous Waste Sites* was polychlorinated biphenyls (PCBs) released during a 1986 transformer fire at Former Building 419, which is an enclosure formerly used as a transformer substation. The "building" has no roof and the "floor" consists of individual concrete slabs, on which the transformers were formerly located, separated by exposed earth and gravel. In June 1986, there was an explosion and subsequent fire at one of the PCB-containing transformers located within Former Building 419. Former Building 419 was decontaminated, and contaminated soils were removed from the immediate vicinity of the transformer. The investigation of this area focused on identifying PCB contamination following the earlier cleanup.

The Railroad Siding Area is located along the southwestern portion of the site and runs in a northwest to southeast direction. Sampling in this area initially occurred during a 1988

Environmental Assessment and indicated the presence of PCBs at low concentrations in a single composite sample collected. This resulted in further exploratory borings and test pits in the area to investigate the potential presence of PCBs, as well as lead and semivolatile organic compounds (SVOCs). The investigation of this area focused on confirming earlier results, as well as filling in data gaps.

The DSNY and the City of New York entered into a Consent Order for OU-1 on October 12, 2006. The Consent Order obligates the responsible party to implement a full remedial program.

A remedial investigation/feasibility study (RI/FS) was conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between February 2005 and September 2006. The field activities and findings of the investigation are described in the RI report. As described in the RI repot, many soil, groundwater, soil gas, and surface water/sediment samples were collected to characterize the nature and extent of contamination.

SURFACE SOIL

Former Drum Storage Area A: This area is generally covered by a layer of compacted gravel and does not readily support vegetation, and therefore does not contain "surface soil."

Former Drum Storage Area B: This area is generally covered by a layer of compacted gravel and does not readily support vegetation, and therefore does not contain "surface soil."

Railroad Siding Area: This area is currently covered by a layer of compacted gravel and does not readily support vegetation, and therefore does not contain "surface soil."

Former Building 419 and the Surrounding Area: Former Building 419 is currently the only area with exposed soils. A total of 43 surface soil samples (i.e., soils within the top two or three inches) were taken and analyzed primarily for PCBs, however, of those samples, five were analyzed for a broader suite of compounds, including volatile organic compounds (VOCs), SVOCs, pesticides and metals for further characterization of the area. PCBs were found to be above one part per million in soils within this area and were determined to be the contaminant of concern at this location.

SUBSURFACE SOIL

Former Drum Storage Area A: The subsurface soil investigation of Former Drum Storage Area A consisted of eight samples for a broad suite of compounds, including VOCs, SVOCs, pesticides, PCBs and metals, as well as an additional eight samples that targeted lead only. Most compounds detected were at concentrations below those in historic fill at other areas of the Brooklyn Navy Yard, however, one sample within the area did reveal leachable lead at levels that are considered hazardous. The highest total lead concentration within this area was 1100 parts per million (ppm), which is well above the unrestricted use criteria of 63 ppm, but only marginally above the commercial cleanup goal of 1000 ppm. No PCBs were detected above one part per million in the area.

Former Drum Storage Area B: The subsurface soil investigation of Former Drum Storage Area B consisted of nine samples for a broad suite of compounds, including VOCs, SVOCs, pesticides, PCBs and metals, as well as an additional 23 samples that targeted SVOCs, PCBs and metals only. This area contained concentrations of lead and PCBs considerably higher than those in historic fill at other areas of the Brooklyn Navy Yard, with PCB levels as high as 27 ppm and lead levels as high as 550 ppm. SVOCs were also found at relatively high levels in some samples from within this area, but were generally less significant than the elevated lead and PCB values. This area was previously remediated.

Railroad Siding Area: The subsurface soil investigation of the Railroad Siding Area consisted of 21 samples for a broad suite of compounds, including VOCs, SVOCs, pesticides, PCBs and metals, as well as an additional 33 samples that targeted SVOC and metals only. No pesticide or VOCs were detected, and PCBs were not found in this area at levels generally considered a concern (e.g., only one PCB sample, with a concentration of 1.5 ppm, was above the unrestricted reuse and commercial standards of 0.1 and 1 ppm, respectfully). Metals and SVOC contamination were detected above commercial and unrestricted soil cleanup objectives at several sample locations; however, the distribution was sporadic and not indicative of a "release," but more likely representative of sampling within an area that consists of historic fill.

Former Building 419 and Surrounding Area: The subsurface soil investigation of the Former Building 419 area consisted of 31 samples for a broad suite of compounds, including VOCs, SVOCs, pesticides, PCBs and metals, as well as additional rounds of sampling targeting a more select suite of compounds (e.g., 44 additional samples for PCBs only, 30 additional samples for lead only, as well as 11 more samples each for SVOCs and metals). Results indicated that VOCs and pesticides were not of concern, with only minor excursions above cleanup criteria established for unrestricted reuse. Metals (predominantly lead) and SVOCs were often above unrestricted criteria; however, when assigned against commercial cleanup criteria, the

exceedences are sporadic and do not appear indicative of a "release," but more likely representative of sampling within an area that consists of historic fill. PCBs are present at levels above unrestricted and commercial use criteria within the former substation, with the highest subsurface result for total PCBs being 81 ppm.

GROUNDWATER

During the final stages of the RI, groundwater samples were collected in up-gradient and down-gradient monitoring wells to supplement previously existing groundwater data. Wells were sampled and analyzed for the full Target Compound List (TCL) (VOCs, SVOCs, pesticides/PCBs and metals including cyanide).

Analytical results exceeding groundwater quality criteria results contained within the urban fill material and are consistent with the analytical results obtained from these fill deposits as described in the previous sections. As described further below, both the groundwater and urban fill contain metals and a limited number of SVOCs. No pesticides or PCBs were observed above criteria in groundwater. With respect to VOCs, only xylene was above New York State Department of Environmental Conservation (NYSDEC) Part 703 criteria (ranging from 21-41 ppb) in one monitoring well. Metals observed above their respective criteria included antimony, lead, iron, manganese, selenium and sodium. Levels of some metals observed during the earlier stages of the RI may be related to high particulate matter in the water sample. For example, recently collected groundwater samples had considerably lower metals concentrations than previously observed in the original well at that location, and this is believed to be attributable to better sampling technique and well construction than was used in the past. Further support for the conclusion that high particulate matter in samples was the cause of elevated concentrations of metals in groundwater can be found by comparing filtered and unfiltered groundwater samples. For example, lead concentrations above criteria were observed in the unfiltered sample while only low concentrations were observed in the filtered sample. A small number of SVOCs were also observed to have concentrations moderately above screening criteria.

In general, observed concentrations of contaminants in groundwater do not indicate a significant source of groundwater contamination due to a release or waste management at OU-1. However, there does appear to be minor impact to groundwater on the OU-1 parcel, presumably due to historic operations at the site, as well as the presence of historic fill. No source area contamination relative to these minor groundwater impacts was found during the investigation.

SEDIMENTS

To investigate whether surface runoff from the Brooklyn Navy Yard has contaminated sediment in the adjoining waterway, three sediment samples were collected on the perimeter of the barge

basin and compared to sediment quality data collected previously from the center of the basin. Concentrations of metals in the new samples were similar to or lower than those observed in samples collected near the center of the basin, indicating that overland flow of contaminants was not significantly impacting sediments.

Additionally, concentrations of contaminants observed within the barge basin were not found to be significantly different from those prevalent throughout the region. Both metal and SVOC concentrations in the barge basin sediments were generally comparable to a background sample collected near the mouth of the East River, as well as to samples collected from nearby Wallabout Basin, indicating that observed contaminant concentrations reflect the urban nature of local waterways rather than impacts from the site.

No site-related sediment contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives were evaluated for the sediment.

SOIL VAPOR INTRUSION

To assess the potential vapor intrusion pathway (there are currently no inhabitable structures on the site), a screening-level soil vapor investigation was performed at the site. Two soil vapor samples were collected in each of the former drum storage areas within the Railroad Siding Area, and three soil vapor samples were collected in the vicinity of Former Building 419.

Soil gas results revealed three constituents detected in soil gas (methylene chloride, tetrachloroethene, and trichloroethene) at levels above New York State Department of Health (NYSDOH) guidance values. These contaminants were also reported at low levels in several soil samples.

An Interim Remedial Measure (IRM) soil removal was performed in the vicinity of Former Drum Storage Area B during the summer of 2008 in an effort to ready the area for planned commercial development. The IRM targeted anomalously high lead and PCB concentrations in soil found during the RI. Contaminated soils were excavated and disposed of off-site in accordance with state and federal law. Following the initial removal, samples were taken from the side walls and bottom of the excavation and results were compared to the cleanup objectives established for the IRM (i.e., 0.1 ppm PCB and 400 ppm lead). End point samples were determined to have achieved the goals of the IRM, and an IRM closeout report was submitted to the NYSDEC in December 2008. The IRM is considered to have successfully removed the most contaminated soils within Former Drum Storage Area B. No further remedial activities are planned to occur in this portion of the site.

To eliminate or mitigate the threats identified above, an excavation of hot spots will occur and a protective cover will be placed over the site. The following is a summary of the Remedial Actions that will be performed at the site:

1) Excavation of soils containing PCBs greater than 10 ppm and soils with lead concentration in the TCLP extract of greater than 5 mg/L. The estimated areas and

   depths of excavation are located in the areas of Former Building 419 and Former Drum Storage Area A. Post-excavation samples will be collected to confirm the limits of excavation to the PCB and TCLP lead criteria. Excavated soils will be analyzed for appropriate disposal and managed in accordance with applicable regulations. Former Drum Storage Area B has been remediated pursuant to an IRM and no further action is anticipated in connection with that area.

2) A site-wide cover. The cover will be a combination of existing or new soil, pavement, or concrete. Where vegetated surfaces will remain, a soil cover will be constructed of existing cover if adequate would be used (e.g., gravel covered surfaces with less than 10% passing the number 100 sieve – fine sand and finer fraction). The soil cover will consist of one foot of soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The indicator material location and depth may vary based on the use of existing materials. For example, if existing pavement were to remain, it would not be practicable to install the indicator. Or, if some portion of existing stone were used, the indicator layer may be positioned at a depth other than the base of the cover. The top six inches of soil will be suitable to support vegetation, unless the area is used for vehicle traffic (e.g., gravel areas). Cover soil will meet the NYSDEC, Division of Environmental Remediation criteria for backfill, as per 6 NYCRR Part 375-6.7. Where gravel is used for final cover it will comply with typical aggregate gradations (ASTM D448 or NYSDOT Specifications Tables 703-4 and 703-5) and be of a size suitable as a wearing surface. Where the final surface will be pavement (e.g., roadways, parking lots) or concrete (e.g., building slab) the cover will consist of a paving system or concrete slab system at least six inches thick, either constructed or existing.

3) Imposition of an institutional control in the form of an environmental easement that will require: (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner (or in this case BNYDC as the agent of the owner) to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls. Regarding the periodic certification, it will:

- Be prepared and submitted by a professional engineer or such other expert approved by the NYSDEC until the NYSDEC notifies the property owner in writing that the certification is not longer needed;

- Contain a certification that the institutional and engineering controls remain in place and are either unchanged from the previous certification or are compliant with the NYSEC-approved modifications;

- Allow the NYSDEC access to the site; and

- State that the engineering controls remain protective of public health and the environment, and remain in compliance with the site management plan or any NYSDEC-approved modifications thereof.

4) A Site Management Plan (SMP) which will include the following institutional and engineering controls: (a) management of the cover system to restrict excavation below the soil cover's demarcation layer (and identification of specific areas where the demarcation layer may be an alternative material such as the pavement itself), pavement, or buildings, and procedures for proper management of soils and appropriate health and safety requirements should excavation occur; (b) provisions for evaluation of the potential for vapor intrusion into buildings developed on the site, including the mitigation of impacts identified; (c) identification of use restrictions on the site; and (d) provisions for the continued proper operation and maintenance of the components of the remedy.

5) A long-term monitoring plan. The key components of this plan will include the periodic inspection of the cover system, the necessary inspections to support periodic certification of the site use restrictions, and the periodic monitoring of any future sub-slab depressurization systems.

ATTACHMENT 3-1

PHYSICAL HAZARD ANALYSIS

The following are potential hazards that may be encountered at the site during field operations and the appropriate procedure for each.

SEVERE WEATHER

If severe weather occurs that may affect the safety of site workers, the Site Safety Officer or designee will stop affected field operations. All field operations will be suspended while lightning is present or recently observed. The Site Safety Officer or designee will give the approval to resume operations when weather conditions improve.

HEAT STRESS/COLD STRESS

DCA field personnel will be cognizant of weather conditions and monitor weather reports so that they can dress appropriately. Field personnel should bring supplies of noncaffeinated fluids such as water, to the job site daily.

Workers will monitor each other's actions, speech, and appearance for signs and symptoms of heat-related illnesses or injury, including heat exhaustion and heat stroke. Physical signs and symptoms of heat exhaustion include headache, nausea, vertigo, weakness, thirst, and giddiness. Heat exhaustion may progress to heat stroke if a worker is unable to cool and re-hydrate their body. The primary signs and symptoms of heat stroke are confusion, irrational behavior, loss of consciousness, convulsions, lack of sweating (usually), hot, dry skin, and an abnormally high body temperature. Workers should be aware of the key differences between the signs and symptoms of heat stroke and those of heat exhaustion, such as the lack of sweating, the color of the skin (red), and the rise in body temperature. Heat stroke is a medical emergency that requires immediate medical attention.

Field personnel should dress appropriately with adequate insulating dry clothing to maintain core body temperatures above 98.6°F when air temperatures are below 40°F. If continuous work is to be performed at air temperatures below 20°F, frequent short breaks will be taken to keep warm.

During cold weather, workers will monitor each other's actions, speech, and appearance for signs and symptoms of cold-related illnesses or injury including hypothermia, chilblains and frostbite. The first symptoms of hypothermia are uncontrollable shivering and the sensation of

cold. Cool skin, muscle rigidity and low blood pressure, slowed or irregular pulse and apparent exhaustion and fatigue after rest manifest as hypothermia progresses and the core body temperature falls. Chilblains and frostbite can occur without hypothermia when extremities do not receive sufficient heat from central body stores. Chilblains occur when small blood vessels constrict during cold, moist conditions, then leak blood into surrounding tissues upon re-warming. Chilblains usually affect the extremities, ears and cheeks. Damage from chilblains is generally not considered serious, but discomfort can be severe and the risk of secondary infection does exist. Frostbite occurs when the fluids around the tissue cells freeze. Frostbite usually affects the extremities, nose and cheeks. Damage from frostbite can result in tissue death. Therefore, frostbite requires immediate medical attention.

SLIP, TRIP AND FALL HAZARDS

As in any work area, it is expected that the ground may be uneven, the surface may be uneven, debris may be present and wet or muddy areas may exist. Excavation and other subcontractor equipment may also be present during sampling activities. Therefore, the potential for slipping, tripping and falling is present. Severe slip or trip hazards will be identified prior to commencement of project activities and demarcated by flags or caution tape.

HEAVY LIFTING

There is the potential for back strain associated with lifting heavy equipment. Back strain can be prevented by employing proper lifting and bailing techniques. Heavy equipment will be lifted using proper lifting procedures. Lifting with the legs will be employed, and when needed, additional help may be requested.

USE OF HAND AND POWER TOOLS

Hand and/or power tools are often used for light construction and assembly in the field. However, hand and/or power tool safety is sometimes not being paid enough attention to. Each year hundreds of workers in the workforce are seriously injured while using hand or power tools; thousands experience minor injuries. The injuries consist of bruises, cuts, punctures, eye injuries, and amputations. The infrequent deaths are from electrocution and severe lacerations.

When using hand or power tools, the following factors should be given emphasis:

- Use the proper tool for the task.
- Store the tools properly.
- Tools should be kept in good condition.
- Wear goggles when there is a risk of flying particles or other debris.

- Keep tools free of grease or oil, which would cause them to slip.
- Use tools in a manner so that a slip or miss does not result in a cut or hit to the user.
- Use a vise or clamps to hold small objects while working with them.
- Practice good housekeeping in all work areas and wear slip-resistant shoes.
- Provide or ensure that there is adequate lighting.
- A hard hat, gloves and other protective equipment might be required for certain tasks and some locations. Make certain that this equipment is available and worn. See Section 5 for more information about PPE.

With electrical power tools there are a few other important "musts". They are as follows:

- Electrical tools must always protect the user from electrical shock or electrocution. This can be done by providing "double-insulated" tools, three-wired cords with the ground wire connected, and/or by use of a ground fault circuit interrupter.
- Avoid working with electrical power tools in damp or wet areas. If this cannot be avoided, always wear gloves and footwear designed for use when working with electricity.
- Never carry tools by the cord; never disconnect them by "yanking" on them.
- Always disconnect tools when not in use and before servicing them or charging accessories.
- Damaged electrical power tools must be removed from service and be tagged "Do not use."

Gasoline-powered tools (such as generators) also require the use of personal protective equipment, attention to storage, conditions and safe use. Refueling is a special concern: 1) make sure the engine has cooled before refueling; 2) refuel in well-ventilated areas; 3) replace the tank cap and wipe up spills before restarting the engine.

There are some other safety practices, however, which apply to all power tools, electric- or gasoline-powered. The most important of these are:

- Read and heed the operator's manual.
- Read and heed all safety decals on the equipment.
- Keep all guards and shields in place at all times.
- Do not by-pass, disconnect, or in any manner void any of the safety features built into the equipment.

- Keep power equipment away from personnel not trained in the safe and proper use of the equipment.
- Do not use electrical equipment (such as generators) in the rain.

HEAVY EQUIPMENT

DCA field personnel will be working in the vicinity of excavation equipment. The excavation contractor will operate the excavation equipment in a safe manner. DAC personnel will be conscious of the excavation operations and abide by the operators instructions. All field personnel will stay out of operating range of all heavy equipment at the site. Field personnel shall not walk behind operating equipment or out of view of the equipment operator. Operating equipment should remain in the field of vision of field personnel at all times. Sampling will only take place when heavy equipment is not in motion. All field personnel will be familiar with the heavy equipment operators emergency communication signals.

WORKING ADJACENT TO WATERWAYS

When conducting work adjacent to the Barge Basin, the Contractor will be responsible for the placement of a barrier that will prevent site personnel from falling into the waterway. In the event a barrier cannot be placed adjacent to the waterway, personnel will be required to wear a U.S. Coast Guard-approved life jacket or buoyant work vest at all times when situated adjacent to the waterway. Caution should be exercised to avoid slips, trips and falls when in proximity to the waterway. A ring buoy with at least 90 feet of line or a throwbag will be available and kept close to the Barge Basin when work is being conducted near the water.

ATTACHMENT 4-1

Category	Parameter	Range on Site (Min, Max)		OSHA PEL/NIOSH REL Exposure Limits
Metals (ppm)	Arsenic	0.38	170	0.010 mg/m^3 (TWA)/0.002 mg/m^3 [15-minutes]
	Barium	7	590	0.5 mg/m^3 /NA
	Beryllium	0.1	20	0.005 mg/m^3 (TWA)/0.002 mg/m^3 (TWA)
	Cadmium	0.1	14	0.005 mg/m^3 (TWA)/NA
	Calcium	520	210000	NA
	Chromium	4	150	1 mg/m^3 (TWA)/0.5 mg/m^3 (TWA)
	Cobalt	2	140	0.1 mg/m^3 TWA/0.05 mg/m^3 TWA, 20 mg/m^3 IDLH
	Copper	9	1500	1 mg/m^3 (TWA)/1 mg/m^3 (TWA)
	Iron	3400	68000	10 mg/m^3 (TWA)/5 mg/m^3 (TWA)
	Lead	4	5300	0.050 mg/m^3 (TWA)/0.050 mg/m^3 (TWA) (8-hour)
	Magnesium	56	66000	NA
	Mercury	0.10	5.4	0.1 mg/m^3 (TWA) [skin]/0.05 mg/m^3 [skin]
	Nickel	4	330	1 mg/m^3 (TWA)/0.015 mg/m^3 (TWA)
	Selenium	0.3	14	0.2 mg/m^3 (TWA)/0.2 mg/m^3 (TWA)
	Sodium	18	11901	NA
	Zinc	19	7400	NA
Semi-Volatile Organics (ppb)	Phenol	42	9260	5 ppm (TWA)/5 ppm (TWA)
	Naphthalene	35.8	28300	10 ppm (TWA) (50 mg/m^3)/10 ppm (TWA) (50 mg/m^3)
	Dibenzofuran	40.5	15100	NA
	Anthracene	43.4	2E+05	0.2 mg/m^3 (TWA)/0.1 mg/m^3 (TWA)
	Fluoroanthene	42.1	2E+05	NA
	Butylbenzylphthalate	42.5	79400	NA
	Benzo(a)anthracene	39.1	20600	NA
	Chrysene	37	17200	0.2 mg/m^3 (TWA)/0.1 mg/m^3 (TWA)
	Benzo(b)fluoranthene	47.2	25300	NA
	Benzo(k)fluoranthene	57.3	7400	NA
	Benzo(a)pyrene	38	15600	0.2 mg/m^3 (TWA), 0.80 mg/m^3 (IDLH)/0.1 mg/m^3 (TWA)
	Indeno(1,2,3-cd)pyrene	41.9	7880	NA
	Dibenzo(a,h)anthracene	47.9	2510	NA
Volatile Organics (ppb)	Benzene	11	69	1 ppm (TWA)/0.1 ppm (TWA)
Pesticide/PCB (ppb)	Heptachlor epoxide	1.8	29.2	NA
	gamma-BHC (Lindane)	1.8	17	0.5 mg/m^3 (TWA)/0.5 mg/m^3 (TWA)
	Dieldrin	1.8	60.9	0.25 mg/m^3 (TWA) [skin]/0.25 mg/m^3 (TWA) [skin]
	PCBs	33	2E+05	0.5 mg/m^3 (TWA) [skin]/0.001 mg/m^3 (TWA)

NA – None available

ATTACHMENT 7-1

COMMUNITY AIR MONITORING PLAN

OVERVIEW

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements will be reviewed for each situation in consultation with New York State Department of Health (NYSDOH) to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

COMMUNITY AIR MONITORING PLAN

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the Work Zone will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological

contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

- **Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

- **Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

VOCs must be monitored at the downwind perimeter of the immediate work area (e.g., Work Zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the Work Zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the Work Zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the

total organic vapor level 200 feet downwind of the Work Zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the Work Zone, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the Work Zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (NYSDEC and NYSDOH) and County Health personnel to review.

ATTACHMENT 12-1

DECONTAMINATION/CLEAN-UP PROCEDURES

PERSONAL DECONTAMINATION

Personal decontamination should be done at the designated decontamination areas. For personnel that may have come in contact with contaminated materials, decontamination will be performed by removing outer protective clothing. If necessary, brushes, water buckets, and detergent (e.g., Alconox) will be setup adjacent to the work area on plastic sheeting, to decontaminate non-disposable items, (e.g., work boots) if needed. Decontamination materials will also be collected and containerized for proper disposal. . For personnel that may have come in contact with contaminated materials, decontamination will be performed by removing outer protective clothing. If necessary, brushes, water buckets, and detergent (e.g., Alconox) will be setup adjacent to the work area on plastic sheeting, to decontaminate non-disposable items, (e.g., work boots) if needed. Decontamination materials will also be collected and containerized for proper disposal.

EQUIPMENT DECONTAMINATION

Decontamination of equipment used by DCA Construction Ltd. field personnel will take place within the designated Work Zone. Field and/or sampling instruments will be decontaminated whenever they have come into contact with soil or groundwater. Soil will be removed using a dry brush daily or more frequently as needed. All instruments will be decontaminated using a potable water/Alconox mixture followed by a de-ionized water rinse and air drying. Decontamination residuals will be disposed of into a designated 55-gallon drum within the Work Zone and stored for proper disposal. The site plan attached, illustrates the typical location of the equipment decontamination pad along with a typical detail. Equipment will not be entering contaminated work areas, so only the bucket of excavation equipment will require decontamination with the decontamination pad.

CLEAN-UP PROCEDURES

Work areas will be kept in a neat and orderly condition. Any debris generated will be disposed of in an appropriate manner in a refuse can or bag that will be provided on site.

ATTACHMENT 13-2

OCCUPATIONAL ACCIDENT/INCIDENT REPORT FORM

Date of Incident:_____ **Location of Incident:**_____
Time of Incident:_____**Date of Report:**_____

Personal Injury:

_____

_____

_____

Property Damage:

_____

_____

_____

Description of Incident:

_____

_____

_____

Additional Factors:

_____

_____

_____

Corrective Actions:

Action	Responsibility	Date of Completion
_____	_____	_____
_____	_____	_____
_____	_____	_____

Investigated By: _____

_____

Written By: _____ **Date:** _____

Reviewed By: _____ **Date:** _____

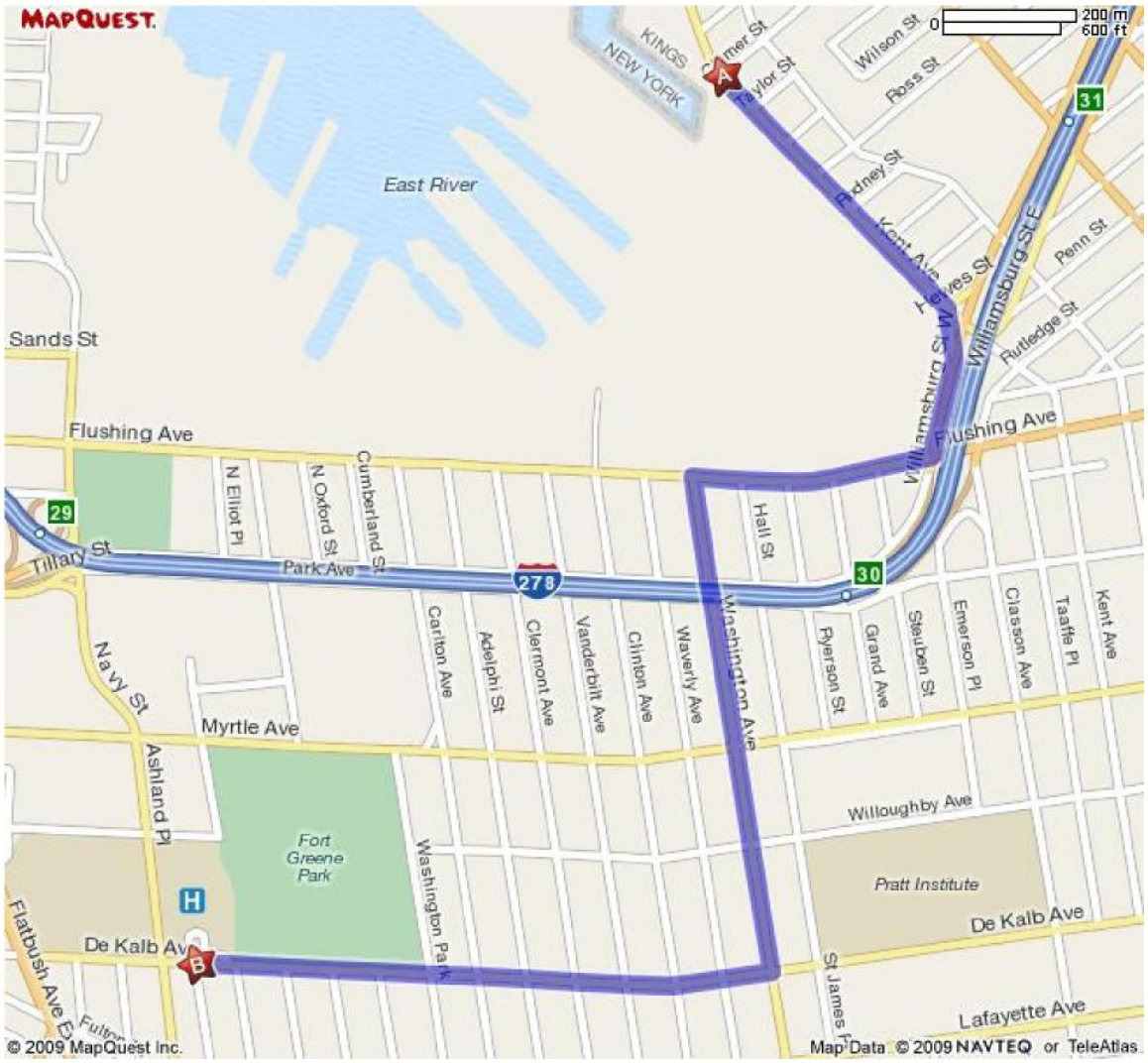
Attachment 14-1

Total Travel Estimates: 6 minutes / 1.98 miles

A: Kent Ave & Clymer St, Brooklyn, NY 11211

1.	Start out going SOUTHEAST on KENT AVE toward TAYLOR ST.	0.4 mi
2.	Turn SLIGHT RIGHT onto WILLIAMSBURG PL.	0.1 mi
3.	Turn SLIGHT RIGHT onto WILLIAMSBURG ST W.	0.1 mi
4.	Turn RIGHT onto FLUSHING AVE.	0.3 mi
5.	Turn LEFT onto WASHINGTON AVE.	0.6 mi
6.	Turn RIGHT onto DE KALB AVE/DEKALB AVE.	0.6 mi
7.	121 DEKALB AVE.	0.0 mi

B: 121 Dekalb Ave, Brooklyn NY 11201-5425



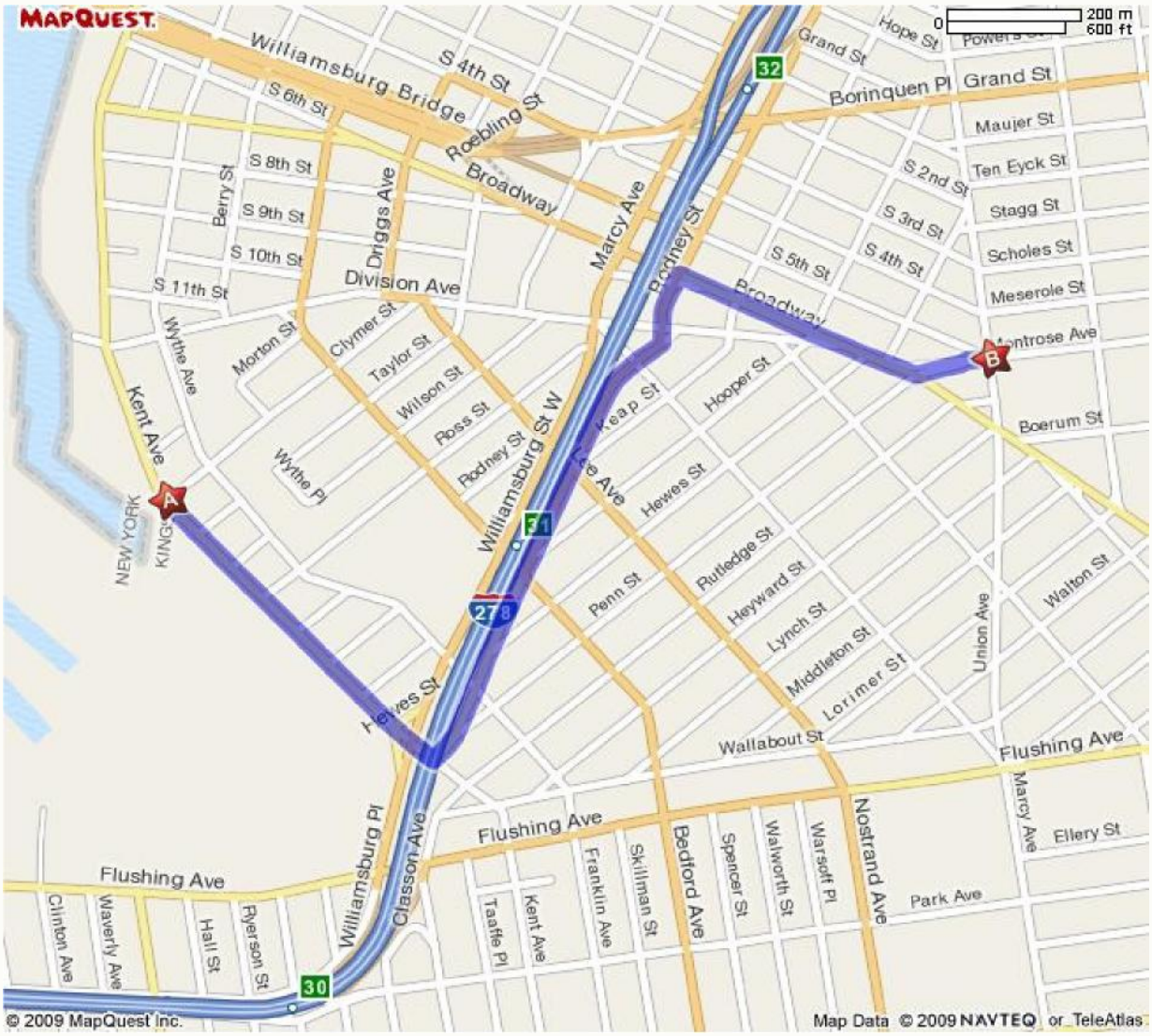
Attachment 14-2

Total Travel Estimates: 5 minutes / 1.45 miles

A: Kent Ave & Clymer St, Brooklyn, NY 11211

1.	Start out going SOUTHEAST on KENT AVE toward TAYLOR ST.	0.4 mi
2.	Turn LEFT onto WILLIAMSBURG ST E.	0.5 mi
3.	WILLIAMSBURG ST E becomes RODNEY ST.	0.1 mi
4.	Turn LEFT to stay on RODNEY ST.	0.1 mi
5.	Turn RIGHT onto BROADWAY.	0.3 mi
6.	Turn SLIGHT LEFT onto MONTROSE AVE/NEW MONTROSE AVE.	0.1 mi
7.	Turn RIGHT onto UNION AVE.	0.0 mi
8.	211 UNION AVE is on the RIGHT.	0.0 mi

B: 211 Union Ave, Brooklyn, NY 11211-7417



BROOKLYN NAVY YARD

13-ACRE PARCEL SITE - OPERABLE UNIT NO. 1
BROOKLYN, NEW YORK
NYSDEC SITE ID NO: 224019A

PROJECT MANUAL

Contingency Plan

Decontamination Plan

Health and Safety Plan

Community Air Monitoring Plan

Field Sampling and Analysis Plan

Soil Management Plan

Dust Control Plan

Backfill Materials Information

Stormwater Pollution Prevention and Erosion and Sediment Control Plan

Prepared by:
DCA Construction Ltd.
64 Giegerich Avenue
Staten Island NY 10307

Date: June 25, 2012

Table of Contents

Appendixes:

- **Appendix A - Site Plan**
- **Appendix B - Proposed Sampling Locations**
- **Appendix C - Quality Assurance Project Plan**
- **Appendix D – Erosion and Sediment Controls Plan**
- **Appendix E – Disposal Facility Soil Sampling Protocol & Criteria**
- **Appendix F - Notice of Intent (NOI)**

Attachment:

- **Site Specific Health and Safety Plan**

1. CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the DSNY and DCA. These emergency contact lists must be maintained in an easily accessible location at the site.

Emergency Contact Numbers

Medical, Fire, and Police	911
One Call Center	(800) 272-4480 3 day notice required for utility markout
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Contact Numbers*

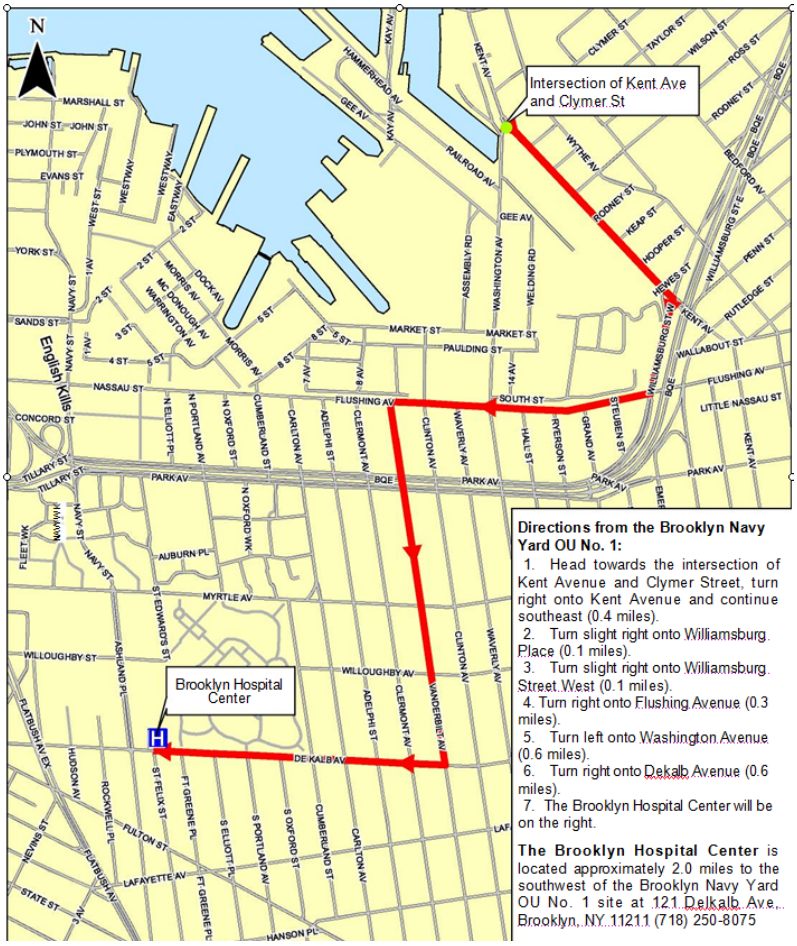
Marshah-Reaff Barrett	DSNY Project Manager	(646) 885-4776
Nicholas Mann	BNYDC Contact	(845) 721-0284
Michael Musso	Owner's Representative, Certifying Engineer, HDR/HydroQual	845.735.8300 ext. 261 845.304.9639 (cell)
Kevin Fitzpatrick	CQA Engineer, HDR HydroQual	(201) 529-5151, ext. 7102 (914) 409-5521 (cell)
Jonathan Greco	NYSDEC Project Manager	518-402-9694
Vincent Alison	DCA Construction Ltd. Owner/General Superintendent	(917) 913-1174 (Cell) (718) 984-9550 (Office)
Sherwood Adams	DCA Construction Ltd. Project Manager/Chief Engineer	(917) 939-9625
Joseph Alison	DCA Construction Ltd. Superintendent	(386) 547-2911
Joseph Lucchio	DCA Construction Ltd. Superintendent/Equipment Operator	(917) 330-2905
John Auffredoe	DCA Construction Ltd. General Foreman/Equipment Operator	(917) 882-6258
* Contact numbers subject to change and should be updated as necessary		

Map and Directions to Nearest Health Facility

Site Location:	Brooklyn Navy Yard 63 Flushing Avenue, Brooklyn, New York 11205
Nearest Hospital Name:	The Brooklyn Hospital Center 121 Dekalb Avenue, Brooklyn, New York 11211
Hospital Telephone #:	(718) 250-8075

Directions to the Hospital:

1. Head towards the intersection of Kent Avenue and Clymer Street, turn right onto Kent Avenue and continue southeast (0.4 miles).
2. Turn slight right onto Williamsburg Place (0.1 miles).
3. Turn slight right onto Williamsburg Street West (0.1 miles).
4. Turn right onto Flushing Avenue (0.3 miles).
5. Turn left onto Washington Avenue (0.6 miles).
6. Turn right onto Dekalb Avenue (0.6 miles).
7. The Brooklyn Hospital Center will be on the right.



Total Distance: 1.98 miles
Total Estimated Time: 6 minutes

Response Procedures

As appropriate, the fire department and other emergency response groups will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan. The list will also be posted prominently at the site and made readily available to all personnel at all times.

If underground tanks or other previously unidentified contaminant sources are found during invasive work, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment, and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes, Target Analyte List (TAL) metals, Target Compound List (TCL) volatile and semivolatile organics, TCL pesticides, and polychlorinated biphenyls (PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Case Manager. Reportable quantities of petroleum product will also be called in and reported to the NYSDEC spills hotline.

If an accidental release of contaminated media were to occur, or there is a release associated with the operations or materials typically found at a construction site (e.g., lubricating fluids, fuel), spill prevention procedures will be applied including use of spill kits on equipment (absorbent, bags, protective gear), and use of the on-site equipment to contain the material, segregate it from surrounding soil, and containerize it (e.g., temporarily cover with poly, place in a drum).

In the event of severe weather (thunderstorms, high winds, heavy rains), the DCA construction superintendent will direct personnel to secure equipment and the work area, and leave the work area taking shelter in a trailer, the existing salt shed, or a vehicle until conditions permit the re-start of work.

2. DECONTAMINATION/CLEAN-UP PROCEDURES

Personal Decontamination

It is anticipated that DCA Construction Ltd. (DCA) personnel working on the site will be wearing Level D or modified Level D protection. Disposable PPE will be collected for proper disposal. Personnel working at the site must wash their hands and face prior to eating, drinking or smoking and practice good personal hygiene. Potable water will be available at the site. Personal decontamination should be done at the designated decontamination areas. For personnel that may have come in contact with contaminated materials, decontamination will be performed by removing outer protective clothing. If necessary, brushes, water buckets, and detergent (e.g., Alconox) will be setup adjacent to the work area on plastic sheeting, to decontaminate non-disposable items, (e.g., work boots) if needed. Decontamination materials will also be collected and containerized for proper disposal.

Equipment Decontamination

Decontamination of equipment used by DCA field personnel will take place within the designated Work Zone. Field and/or sampling instruments will be decontaminated whenever they have come into contact with soil or groundwater. Soil will be removed using a dry brush daily or more frequently as needed. All instruments will be decontaminated using a potable water/Alconox mixture followed by a de-ionized water rinse and air drying. Decontamination residuals will be disposed of into a designated 55-gallon drum within the Work Zone and stored for proper disposal. The site plan attached, illustrates the typical location of the equipment decontamination pad along with a typical detail. *See Appendix A for the Site Plan*.

Equipment will not enter contaminated zones and therefore, will not have to enter the decontamination pad. Only the excavation bucket of equipment will require decontamination.

Clean-Up Procedures

Work areas will be kept in a neat and orderly condition. Any debris generated will be disposed of in an appropriate manner. All debris generated will be placed into refuse cans, drums or bags which will be provided at the site.

3. HEALTH AND SAFETY PLAN

DCA shall utilize the attached Site Specific HASP for the project. All other personnel at the site, including visitors are responsible for their own health and safety plans.

4. COMMUNITY AIR MONITORING PLAN (CAMP)

Real-time airborne particulate monitoring and real-time volatile organic vapor monitoring (if applicable) will be performed by DCA at the perimeter to evaluate and document the effectiveness of the engineering controls and/or dust/vapor suppression methods implemented by DCA. The perimeter air monitoring activities will be conducted during work hours, and during building demolition, soil removal/handling activities and other activities that could potentially generate elevated concentrations of impacted airborne particulates or volatile organic vapors. The perimeter monitoring data will be reported and compared to currently recognized action levels, as described below. If measured concentrations or airborne materials are measured above the action levels, DCA will implement additional control measures and/or to stop work.

Perimeter air monitoring will be conducted at four perimeter monitoring locations (two upwind locations and two downwind locations, such that a rectangle is formed around the perimeter of the work area). A typical layout is shown on the attached site plan, but will be varied based on wind direction. The perimeter monitoring locations will be adjusted if the wind direction changes more than 45 degrees. The perimeter monitoring locations will be determined by the Engineer and will be based on wind speed, wind direction, and type of work activities being conducted. Monitoring will be continuous during intrusive work.

DCA, with the assistance of the Engineer, will establish the airborne dust and volatile organic vapors background concentrations at the site. Background levels will be established at the start of each work day, for a change in wind direction, and if readings indicate that conditions may have changed.

Air monitoring shall be performed by DCA within active work area limits in accordance with DCA's HASP and applicable OSHA regulations. Air monitoring shall be performed by DCA within active work areas during building demolition, soil removal/handling activities, asphalt milling operations, and other activities that could potentially generate elevated concentrations of airborne impacted particulates or volatile organic vapors.

The air monitoring data shall be recorded on an air monitoring log and shall be maintained in an onsite project file. Real-time air quality monitoring data shall be provided to the Engineer for review/evaluation on a daily or as-requested basis.

DCA shall implement corrective actions if airborne particulates and/or volatile organic vapors detected at the perimeter exceed the recognized action levels.

At least two days prior to the commencement of building demolition, soil removal/handling/backfilling, and other activities that could potentially generate airborne impacted particulates or volatile organic vapors, DCA shall inform the

Engineer of the work activities scheduled. If the schedule changes, DCA shall notify the Engineer.

Perimeter Air Monitoring Action Levels

The airborne constituent action levels for the real-time perimeter air monitoring conducted during building demolition, soil removal/handling/backfilling activities, asphalt milling, and other activities that could potentially generate impacted airborne particulates or volatile emissions are presented in the following table.

Parameter	Site Perimeter Action Level	Action
Airborne Particulates	0 to 100 µg/m3 (above predetermined background) and no visible dust leaving work area	Contractor shall continue normal operations.
	100 to 150 µg/m3 (above predetermined background) and/or visible dust leaving work area	Contractor shall implement dust suppression/ engineering control measures as outlined in the Dust Control Plan
	> 150 µg/m3 (above predetermined background)	Contractor shall stop all work activities, identify the source of the particulates, and implement measures outlined in the Dust Control Plan. After these steps are performed to the satisfaction of the Engineer, work activities can resume provided that the particulate level (measured by the Engineer) 200 feet downwind of the work area or half the distance to the nearest potential receptor, whichever is less or as determined by the Engineer, is below 100 µg/m3 (above background).
Volatile Organic Vapors	0 to 5 ppm (above predetermined background)	Contractor shall continue normal operations.
	> 5 ppm (above predetermined background)	Contractor shall stop work activities, identify the source of vapors, and implement corrective actions to abate emissions. After these steps are performed to the satisfaction of the Engineer, work activities can resume provided that the total organic vapor level (measured by the Engineer) 200 feet downwind of the work area or half the distance to the nearest potential receptor, whichever is less or as determined by the Engineer, is below 5 ppm (above background).

5. FIELD SAMPLING AND ANALYSIS PLAN (FS&AP)

The FSP describes the scope of work for the confirmatory sampling and waste characterization at Former Drum Storage Area A, Former Building 419, the treed area along Kent Avenue, and for asphalt milling within OU-1 at the Brooklyn Navy Yard. The FSP describes the soil sampling methodologies and analytical laboratory procedures, decontamination procedures, waste management practices and data report deliverables. This FSP includes both in-situ and ex-situ components of sampling and characterization.

Scope of In-Situ Sampling (Post-Excavation Sampling)

Following the completion of soil excavation, confirmatory soil sampling will be conducted in order to confirm that the remedial goals were achieved.
In order to document the effectiveness of soil removal activities, soil samples will be analyzed for the following procedures:

- PCBs following SW846 Method 8082.
- TCLP lead analysis following SW846 Method 1311/6010.

For soil excavation activities, 5 soil samples shall be collected at both Former Drum Storage Area A and Former Building 419 and 23 soil samples shall be collected at the treed area along Kent Avenue. The 33 samples would be analyzed for PCBs and TCLP lead to determine whether the remedial goals were achieved.

One confirmatory soil sample will be collected from the bottom of the excavation (BS-01) and four confirmatory sidewall samples (SWS-01, SWS-02, SWS-03 and SWS-04) will be collected from the sidewalls at the Former Drum Storage Area A. One confirmatory soil sample will be collected from the bottom of the excavation (BS-02) and four sidewall samples (SWS-05, SWS-06, SWS-07 and SWS-08) will be collected from the sidewalls at Former Building 419. Three confirmatory soil samples will be collected from the bottom of the excavation (BS-03 through BS-05) and 20 confirmatory sidewall samples (SWS-09 through SWS-28) will be collected from the sidewalls at the treed area along Kent Avenue. *See Appendix B for the approximate sampling locations.*

The frequency of sampling from the excavations are consistent with NYSDEC DER-10 Technical Guidance. One sample from the bottom of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area shall be collected and analyzed for PCB compounds and TCLP lead. Sample locations will be biased towards the areas of highest contamination identified during the previous sampling events or based on visual observations in the field (staining, odors, etc.).

If analytical results from confirmatory soil samples identify that contaminants are present at concentrations below the cleanup criteria of 10 ppm PCBs and 5 mg/L TCLP lead, no further action will be required. If the analytical results exceed the cleanup criteria, then the area(s) will be further excavated and resampled, as necessary, until the cleanup criteria are achieved.

DCA shall also provide all labor, materials, tools, and equipment to perform all operations necessary to determine the classification, handling and disposal requirements of all soils and fill materials in the areas to be excavated during construction and the asphalt millings.

DCA shall also provide the services of a laboratory, certified by New York State Department of Health, to perform testing and chemical analyses.

Proposed NYS Department of Health accredited laboratory to be used are the following:

- Phoenix Environmental Laboratories, Inc.
  587 East Middle Turnpike
  P.O Box 370
  Manchester, CT 06040
  (860) 645-1102

- Con-Test Analytical Laboratory
  39 Spruce Street
  East Longmeadow, MA 01028
  (413)525-2332

Confirmatory Soil Sampling Methodologies

Soil samples will be collected by DCA in areas where soil excavation has been completed. Actual sampling locations may vary based upon field conditions and sample retrieval and recovery of soil samples. Both sidewall and bottom samples will be collected by hand digging to a depth of 12 inches to enable sufficient quantities of soils to be collected for analysis.

All samples will be screened for volatile organic compounds using a hand-held photo-ionization detector (PID) total organic vapor analyzer. Each 12-inch interval grab sample will be homogenized using a decontaminated stainless steel bowl and placed in laboratory-supplied sample containers, placed in coolers with ice to maintain a temperature of 4°C and transported to the Analytical Laboratory under stringent chain of custody procedures. Chain of custody procedures will be followed for all samples collected and will be completed each time custody of a sample is changed. Chain of custody forms will be shipped in each cooler and will contain the same sampling information (sample ID, date and time of collection, and analyses required) as on the sample bottles.

A total of 5 confirmatory soil samples (BS-01, SWS-01, SWS-02, SWS-03 and SWS-04) will be collected from the Former Drum Storage Area A, a total of 5 confirmatory soil samples (BS-02, SWS-05, SWS-06, SWS-07 and SWS-08) will be collected from Former Building 419 and a total of 23 confirmatory soil samples (BS-03 through BS-05 and SWS-09 through SWS28) will be collected from the treed area along Kent Avenue. In addition, two field duplicates and two field blanks will be collected for QA/QC purposes.

For waste materials to be disposed of off-site from the excavation and milling operations, the treatment/disposal facility requirements vary, and will partly determine the sampling and analysis requirements for waste characterization. However, NYSDEC guidance at DER-10 guidance provides a variable sampling frequency based on volume, which represents minimum requirements that would be applied to waste characterization. These minimum requirements are as follows:

Volume	VOCs	SVOCs, Inorganics, PCBs, Pesticides
First 50 CY	1 discrete samples	1 composite sample
50-100 CY	2 discrete samples	1 composite sample
100-200 CY	3 discrete samples	1 composite sample
200-300 cy	4 discrete samples	1 composite sample
300-400 CY	4 discrete samples	2 composite sample
400-500 CY	5 discrete samples	2 composite sample
500-800 CY	6 discrete samples	2 composite sample
800-1,000 CY	7 discrete samples	2 composite sample
Each Additional 1,000 CY	2 additional discrete samples	1 additional composite sample

Samples will be collected as grabs and placed directly in laboratory supplied sample jars. Composite samples will be collected from 3-5 discrete locations within the waste material. VOC samples will be collected from the upper six inches of the material if collected within 24 hours of the completion of excavation otherwise samples will be collected from the 6”-12” interval.

Proposed Disposal Facilities to be used are the followings:

- 110 Sand Company
  136 Spagnolli Road
  Melville, NY
  (631) 249-4108

- Deep Green of New York
  1106 River Road
  New Windsor, NY 12553

110 Sand Company will accept contaminated soil meeting the Restricted Use Soil Cleanup Objectives in part 375-6.8, for the protection of groundwater. Sampling frequency for verification of acceptance is as described above from DER-10.

Deep Green accepts petroleum contaminated soils for treatment. Appendix E provides the soil sampling protocol for the facility along with the acceptance criteria. Acceptance criteria are subject to facility verification.

Reference should be made to the Quality Assurance Project Plan for additional information regarding sampling and analysis. *See Appendix C for the copy of QAPP.*

Equipment Decontamination

General decontamination procedures are outlined below. All site-generated waste will generally be placed in a plastic trash bag and placed in an appropriate garbage receptacle for disposal at an appropriate facility.

Sampling Equipment

All equipment used to sample soil or miscellaneous tools that comes in contact with the samples, will be decontaminated before collection of each sample. The decontamination sequence consists of a scrub with a phosphate detergent solution, such as Alconox, followed by a potable/tap water rinse and finished by thoroughly spraying with deionized distilled water. In addition, the hand-held digging equipment and the sample equipment will be steam cleaned prior to the collection of each sample.

Reusable Clothing

Boots, hard hats and other reusable clothing that comes in contact with site soil or water will be decontaminated by scrubbing with an Alconox wash solution followed by a scrub/rinse with potable/tap water.

Waste Management

The following section describes the general protocol for handling and disposal of any solid and liquid wastes generated during the remediation activities. Waste generated during the excavation and sampling activities is expected to consist of trash (boxes, paper, etc.), soils and millings, decontamination wash water and used protective clothing.

Miscellaneous wastes associated with sampling and remediation will be handled as follows:

- Non-contaminated trash and debris will be placed in a trash dumpster and disposed of at an appropriate solid waste management facility.

- Non-contaminated protective clothing will be packed in plastic bags and placed in a trash dumpster for disposal at an appropriate solid waste management facility.

- Liquids generated from equipment decontamination will be collected in drums at the point of generation and transported to the drum staging area. *See Appendix A for the Site Plan*

- Used protective clothing and equipment that is suspected to be contaminated with hazardous waste will be placed in plastic bags, packed in 55-gallon ring-top drums and transported to the drum staging area. *See Appendix A for the Site Plan*

Waste removed from the ground includes all material regardless of type, character, composition, moisture, or condition thereof. All material will be classified prior to disposal based on sampling results from the Contractor, and disposed of accordingly. The potential waste types are as follows:

Hazardous Solid Waste:	Material shall be considered a characteristic hazardous waste when it exhibits any of the following characteristics: ignitability, corrosivity, reactivity, or toxicity for Volatile Organic Compounds (VOCs), semi-VOCs, metals, pesticides, or herbicides, as defined in 6 NYCRR Part 371 or 40 CFR Section 261. Under New York State (NYS) regulations, a material that contains greater than 50 ppm of PCBs is considered a hazardous waste. The Environmental Protection Agency (EPA) considers greater than 50 ppm of PCBd to be a PCB-contaminated waste under Toxic Substances Control Act (TSCA). All hazardous waste shall be considered unsuitable, and shall be disposed of at an approved permitted hazardous waste landfill.
Industrial Waste	Solid waste generated by manufacturing or industrial processes. Such processes may include, but are not limited to the following: electric power generation; fertilizer/agricultural chemicals; inorganic chemicals; iron and steel manufacturing; organic chemicals; and all other materials as defined in 6 NYCRR Part 360. The forms of such wastes are exemplified by but not limited to: liquids such as acids, alkalis, caustics, leachate, petroleum (and its derivatives), and processes or treatment wastewaters; sludges which are semi-solid

	liquids; solidified chemicals, paints or pigments; and dredge spoil generated by manufacturing or industrial processes, foundry sand, and the end or by-products of incineration or other forms of combustion. Industrial wastes per se are not expected to be found as a part of the remediation but are included for completeness. Soil and fill material containing industrial waste shall be considered industrial waste. Evidence that a soil or fill material contains industrial waste shall include visual identification of waste, chemical odors, vapor emission, chemical staining, and analytical data that exceeds the concentration limits in (1) NYSDEC regulations, Part 375 or (2) Soil Cleanup Guidance Policy, CP-51, October 21, 2010, whichever is more stringent.
Construction and Demolition (C&D) Debris:	Uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to bricks, concrete, and other masonry materials, rock, and uncontaminated soil. Uncontaminated solid waste means C&D debris that is not mixed with other solid waste (i.e., industrial waste) at the point of generation, processing or disposal, and that is not contaminated with spills of a petroleum product, hazardous waste, or industrial waste. Soil and fill material may only be considered uncontaminated if it is associated with analytical data that meets the concentration limits for unrestricted use in NYSDEC regulations, Part 375. .
Petroleum-contaminated Waste:	Exhibits a discernible petroleum-type odor, contains visible petroleum product, may be associated with a reported spill, or material associated with sample data that exceeds concentration limits in the NYSDEC Soil Cleanup Guidance Policy, CP-51, October 21, 2010
Non-regulated Solid Waste:	This applies to materials that, before being beneficially used (as determined by the NYS DEC),

Non-regulated Solid Waste: This applies to materials that, before being beneficially used (as determined by the NYS DEC), were solid waste. Material is no longer considered solid waste when used as described: uncontaminated soil which has been excavated as part of a construction project, and which is being used as a fill material, in place of soil native to the site of disposition; non-hazardous contaminated soil which has been excavated as part of a construction project, other than a NYS DEC-approved or undertaken inactive waste disposal site remediation program, and which is used as backfill for the same excavation or excavations containing similar contaminants at the same site. Excess materials on these projects are subject to the requirements of 6 NYCRR Part 360; non-hazardous petroleum-contaminated soil which has been decontaminated to the satisfaction of the NYS DEC and is being used in a manner acceptable to the NYS DEC; recognizable, uncontaminated concrete and concrete products, asphalt pavement, brick, glass, soil and rock placed in commerce for service as a substitute for conventional aggregate; non-hazardous petroleum-contaminated soil when incorporated into asphalt pavement products by a producer authorized by the NYS DEC; and all other uses as described in 6 NYCRR Part 360, Section 360-1.15.

The following standards and regulations may be applicable, relevant and appropriate to any management, staging and storage of generated waste materials:

- NYSDEC's Resource Conservation and Recovery Act (RCRA) Technical Assistance Guidance Memorandum (TAGM) #3028 on "Contained-In Criteria for Environmental Media" (November 30, 1992);

- 40 CFR Part 262 (Standards Applicable to Generators of Hazardous Waste);

- 40 CFR Part 263 (Standards Applicable to Transporters of Hazardous Waste);

- 40 CFR Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities);

- 40 CFR Part 261, Identification and Listing of Hazardous Waste; and
- 40 CFR Part 268 (Land Disposal Restrictions).

Data Reporting

At the conclusion of the confirmatory and waste characterization sampling program, the data will be compiled as follows:

- Data validation of field and laboratory QA/QC;
- Data summary tables with comparison with standards, criteria and guidance;
- Relevant field records (sampling locations, field observations);
- Photographic record (soil sampling, etc.); and
- Community air monitoring data.

The data will be provided to the Engineer for incorporation in the certification report that documents the remedial construction, along with appropriate documentation of disposal (e.g., manifest, bills of lading ,etc.)

Quality Assurance

- Laboratory Requirements: The laboratory shall maintain, throughout the duration of the work, the appropriate New York State Department of Health ELAP Certifications for the analyses to be performed.

- Permits and Regulations
  - The Contractor shall obtain all necessary permits and perform all work in compliance with applicable requirements of OSHA and other governing authorities having jurisdiction.

  - Codes and Standards: State and City laws and code requirements shall govern the transport and disposal of trees, shrubs, stumps, roots, rubbish, debris and other matter.

- Data Management: Data will be managed by utilizing a computer spreadsheet or database program as approved by the Engineer. Data shall be organized in such a way that all samples may be tracked from collection through analysis.

  - The analytical results generated for a ten (10) day turn-around time deliverable shall include a Form I (or equivalent) showing compounds analyzed for, and concentrations detected, and associated chain-of-custody reports to the Engineer.

- The final data package generated by the laboratory shall include the following information:

    a. A Form I showing pertinent physical data presented in concise, easy to follow formats (i.e., sample number, laboratory ID, client, date of sample preparation, date analyzed, percent moisture, dilution factor, sample matrix, units, undetected and detected compounds, etc.)

    b. Reference to analytical methodology used.

    c. General discussion including a description of sample types, tests performed, any problems encountered, and any general comments (case narrative)

    d. Data from each discrete sample reported using cross-referencing between site samples and quality control samples and including all pertinent dates, information and reporting limits

    e. Associated quality control samples such as blanks, spikes and spike duplicates, laboratory duplicates, laboratory control samples, field duplicates and appropriate check standards

    f. Copies of chain-of-custody sheet.

    g. The analytical results shall be provided in a tabular Microsoft Excel 97 format, delivered on 3-1/2 inch diskettes or via electronic mail to the Engineer. All electronic data shall be certified to be virus-free.

- Field duplicate samples shall be collected for a minimum of 10 percent of the samples spaced throughout the sample program.

- Sample Turn-Around: DCA will provide for prompt sampling and turnaround of analysis so as not to delay the project. If a turn-around time of less than 10 days is required due to delays in construction scheduling or other constraints, DCA will request rapid turnaround time for such samples.

Delivery and Storage Handling

- Sample Identification: All samples shall be identified with a sample label in addition to an entry on a chain-of-custody record. The label shall be identified upon receipt by the laboratory and cross-referenced to the chain-of-custody record. Any inconsistencies shall be noted on the custody record. Laboratory personnel shall notify the Sampling and Analysis Manager immediately if any inconsistencies exist in the paper work associated with the samples, and DCA will collect new samples to replace those with inconsistencies which cannot be rectified.

- Sample Labels: The following information shall be on a sample label for each sample bottle:

    1. Site Name
    2. Job Number
    3. Sample Number
    4. Sample Description
    5. Company Name
    6. Parameters to be Analyzed
    7. Date
    8. Time
    9. Preservation Technique Employed
    10. Sample labels shall be attached to the sample bottles

- Completion of Chain-of-Custody Record:

    - Maintain a chain-of-custody record on all samples. A chain-of-custody record is a printed multi-part form that accompanies a sample or group of samples as custody is transferred from person to person. A chain-of-custody record is a controlled document.

    - As soon as is practical after sample collection, preferably after decontamination, the following information shall be entered on the chain-of custody form. All information shall be recorded in ink.

        a. Project number: Enter the alphanumeric designation assigned by the field team that uniquely identifies the project site.

        b. Project name: Enter the site name.

        c. Samplers: Sign the name(s) of the sampler(s).

        d. Station number: Enter the sample number for each sample in the shipment. This number appears on the sample identification label.

e. Date: Enter a six-digit number indicating the year, month, and day of sample collection.

f. Time: Enter a four-digit number indicating the time of collection in 24 hour time; for example, 1354.

g. Composite or grab: Indicate the type and matrix of sample.

h. Station location: Describe the location where the sample was collected.

i. Number of containers: For each sample number, enter the number of sample bottles that are contained in the shipment.

j. Remarks: Enter any appropriate remarks.

- Sample Shipment

Custody of samples shall be maintained through the shipment of samples to the laboratory. All samples shall be packaged and shipped daily to ensure that no sample is held at the site more than 24 hours. Samples shall be delivered directly to the laboratory using the following procedures:

a. Use waterproof high-strength plastic ice chests or coolers only.

b. After filling out the pertinent information on the sample label and tag, put the sample in the bottle or vial and screw on the lid. For bottles other than VOA sample bottles, secure the lid with tape. (Tape on VOA bottles may cause contamination.)

c. Place inert cushioning material such as vermiculite or "bubble-wrap" in the bottom of the cooler.

d. Enclose the bottles in clear plastic bags through which sample labels are visible, and seal the bag. Place bottles upright in the cooler in such a way that they do not touch and will not touch during shipment.

e. Put in additional inert packing material to partially cover sample bottles (more than half-way). Place double-bagged crushed ice around, among, and on top of the sample bottles.

f. Fill cooler with cushioning material.

g. Put paperwork (chain-of-custody record) in a waterproof plastic bag and tape it with packing tape to the inside lid of the cooler.

h. Tape the drain shut.

i. Secure lid by taping. Wrap the cooler completely with strapping tape at a minimum of two locations. Do not cover any labels.

j. Attach completed shipping label to top of the cooler.

k. Put "This Side Up" labels on all four sides and "Fragile" labels on at least two sides of coolers containing glass containers.

l. Ship the cooler overnight by commercial carrier (e.g., Federal Express, UPS), laboratory carrier or field personnel to the respective laboratory.

Custody forms for the samples shall be signed by the DCA's designated representative who is relinquishing custody. The custody form shall include the air bill number, method of shipment, and time and date of the transfer of custody.

Custody seals shall be applied to the front and back of the sample coolers. A shipping label with return address shall be applied as well as the air express bill and any Department of Transportation (USDOT) required labels or markings.

- Transferring Custody of Samples to Shipper, if applicable: DCA shall transfer custody of samples to a shipper as follows:

a. Sign, date, and enter time on the chain-of-custody report under "Relinquished by."

b. Make certain that shipper signs the "Received by" entry.

c. Enter name of the carrier under next "Relinquished by" category. Receiving laboratory shall sign "Received for Laboratory by" on lower line and enter date and time.

- Transferring Custody from Sampler or Shipper to Common Carrier:

The shipper or DCA shall transfer custody of samples to a common carrier as follows:

a. Sign, date, and enter time under "Relinquished by" entry.

b. Enter name of carrier (e.g., UPS, Federal Express) under "Received by."

c. Enter bill-of-lading or Federal Express airbill number under "Remarks."

d. Place the original of the chain-of-custody form in the appropriate sample shipping package. Retain a copy with field records.

e. Sign and date the custody seal. The custody seal is part of the chain-of custody process and is used to prevent tampering with samples after they have been collected in the field.

f. Wrap the seal across filament tape which has been wrapped around the hinges of the shipping package at least twice.

g. Fold the custody seal over on itself so that it sticks together.

h. Complete other carrier-required shipping papers. In instances when the Common Carrier will not accept responsibility for handling chain of- custody forms, the Contractor shall ensure that the record is packed within the sample package.

- Laboratory Custody Procedures: Once the samples arrive at the laboratory, DCA shall ensure that custody of the samples is maintained by laboratory personnel. The laboratory shall, at a minimum, document the chain of custody through each stage of analysis from receipt to final reporting.

6. SOIL MANAGEMENT PLAN (SMP)

Soil Screening Methods

Visual, olfactory and photo-ionization detector (PID) soil screening will be performed by a qualified environmental professional during all remedial excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, materials that can be returned to the subsurface, and material that can be used as cover soil.

Stockpile Methods

Protecting the stockpile from erosion will follow the recommendations presented in the *New York Standards and Specifications for Erosion and Sediment Control (August 2005)*. Soil stockpiles will be located where erosion and sediment hazards are low. The side slope of the stockpile will be maintained at a ratio of 2:1 (H:V) or flatter. Stockpiles will be kept covered at all times with appropriately anchored tarps. When in use, contractors will access the soil stockpile area from upgrade to ensure the drainage path of any runoff from the stockpile area will have constant erosion and sediment controls in place.

When not in use, soil stockpiles will be continuously encircled with a berm and/or silt fencing at the toe of the slope to prevent washout. Hay bales are to be used as a secondary filtering method after the silt fencing around any soil stock piles or in place of a silt back insert to the catch basins on site to prevent any sediment from reaching the existing stormwater conveyance system. They are not to be used to redirect stormwater runoff from reaching the existing system.

Stockpiles will be inspected at a minimum once each week and after every storm event that generates 0.5 inches or greater of rain as required by NYSDEC standards for erosion and sediment control. Damaged tarp covers will be promptly replaced. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC in accordance with all applicable rules and regulations.

DCA will use the existing salt shed for stockpiling materials. If so, covering will not be necessary as the salt shed is roofed, however, controls will still be in

place to assure that runoff from potentially contaminated materials does not occur, as described above. See Appendix A for the Site Plan.

Materials Excavation and Load Out

A Professional Engineer licensed to practice in New York State or other Qualified Environmental Professional will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are solely responsible for safe execution of all excavation and other work performed under this plan. The locations of site utilities and easements will be investigated to determine whether they pose a risk or impediment to work planned.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements). If deemed necessary, a truck wash will be operated on-site. A qualified environmental professional will ensure that all outbound trucks will be washed at the truck wash before leaving the site until the intrusive work is complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking. All egress points for truck and equipment transport leaving the site will be kept clean of dirt and other materials derived from the site during intrusive excavation activities. Adjacent streets will be cleaned, as necessary, to keep them free of site-derived materials.

Materials Transport Off-Site

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. Haulers will be appropriately licensed and trucks properly placarded. The contractor will determine the truck-transport route; however, the contractor will attempt to limit the transport of materials through residential areas and past sensitive sites while maintaining overall transport safety. Trucks will be prohibited from stopping and idling in the neighborhood outside the project site. Egress points for trucks and equipment leaving the site will be kept clean of dirt and other materials during excavation activities at the site. Trucks will be queued on-site to minimize off-site disturbance. Off-site queuing will be prohibited. Materials transported by trucks leaving the site will be secured with tight-fitting covers. Loose-fitting canvas-type covers will be prohibited. If loads contain wet materials capable of producing free liquid, truck liners will be used. If necessary, all trucks will be washed before leaving the site.

Materials Disposal Off-Site

All soil/fill/solid waste excavated and removed from the site will be manifested, treated as contaminated, and regulated material and will be transported and disposed in accordance with all local, state (including 6 NYCRR Part 360) and federal regulations. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at a minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted soil cleanup objectives (SCOs) is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

Fluids Management

All liquids to be removed from the site, including excavation dewatering (if necessary) will be manifested, handled, transported and disposed in accordance with applicable local, state, and federal regulations. Dewatering or other fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e., a local pond, stream or river) will be performed under a State Pollutant Discharge Elimination System (SPDES) permit, which will be obtained if applicable and appropriate. Such discharge is not anticipated for the remedial construction.

Cover System Restoration

After the completion of soil removal, milling or other invasive activities the cover system will be applied. The demarcation layer, consisting of orange snow fencing material or equivalent material will be placed to provide a visual reference to the top of the 'Remaining Contamination Zone,' the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in the SMP. The final top layer of asphalt or soil and stabilized vegetation would then be applied.

Stormwater Pollution Prevention

All excavations, including remedial work on the site, will be performed in accordance with all applicable permits, including a Stormwater Pollution Prevention Plan and coverage under the general permit for construction stormwater. An Erosion and Sediment Control Plan, prepared by a state licensed Professional Engineer or Landscape Architect, or a Certified

Professional in Erosion and Sediment Control (CPESC), will be implemented by DCA during excavation activities. In accordance with the SPDES General Permit for Stormwater Discharges, an application will be made under the SPDES permit program for stormwater pollution prevention by filing a Notice of Intent supported by a Stormwater Pollution Prevention Plan including an erosion and sediment control plan in satisfaction of the substantive technical requirements.

7. DUST CONTROL PLAN (DCP)

Dust suppression during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Clearing and grubbing of larger areas will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.

- Gravel will be used on roadways to provide a clean and dust-free road surface.

On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

8. BACKFILL FROM OFF-SITE SOURCE

Materials brought on-site for fill material will meet the levels established in the 'Commercial or Industrial Use' column of the 'Allowable Constituent Levels for Imported Fill or Soil' table that can be found in Appendix 5 of DER-10, consistent with the NYSDEC-approved *Site Management Plan*. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

Sampling requirements for soils brought to the site will be based on the soil quantity in cubic yards as presented in DER-10 in Table 5.4(e)10 'Recommended Number of Samples for Soil Imported To or Exported From A Site.'

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site. Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

9. STORMWATER POLLUTION PREVENTION (SWPP) AND EROSION AND SEDIMENT CONTROL PLAN (ESCP)

Introduction and Site Description

This section provides an erosion and sediment control plan prepared in conjunction with the remediation of a parcel within the former naval yard located in Brooklyn, NY.

The Brooklyn Navy Yard, 13-Acre Parcel is located on the northeast portion of the Brooklyn Navy Yard Development Corporation Industrial Park, in the Borough of Brooklyn, New York. The Parcel was placed on the New York State Registry of Inactive Hazardous Waste Sites in 2001, and in October of 2006, the DSNY and NYSDEC entered into a Consent Order for remediation of the Site for Operable Unit No. 1 (OU-1). OU-1 consists of approximately 9.5 acres of the site and includes two former drum storage areas, a railroad siding area, and the former Building 419 transformer substation.

The proposed project consists of the removal of former Building 419 transformer substation, areas of contaminated soil, milling of existing pavement from the current naval yard, and creation of an impervious pavement cap covering the existing milled pavement areas. No new impervious grounds will be created on site. All areas with a proposed impervious cap will have additional layers of asphalt added to pre-existing impervious grounds. In total, approximately 3.04 acres of land will be affected.

Site Drainage and Drainage Basin Description

The site is located at the base of an existing stormwater conveyance system. Runoff that does not enter the conveyance system typically will discharge directly into the barge basin, which is connected to the East River. An aerial view is presented in Figure 2-1, while a USGS map section is presented in Figure 2-2.
The soils on site are described as substratum-Laguardia-complex.

Figure 2-1. Vicinity Map

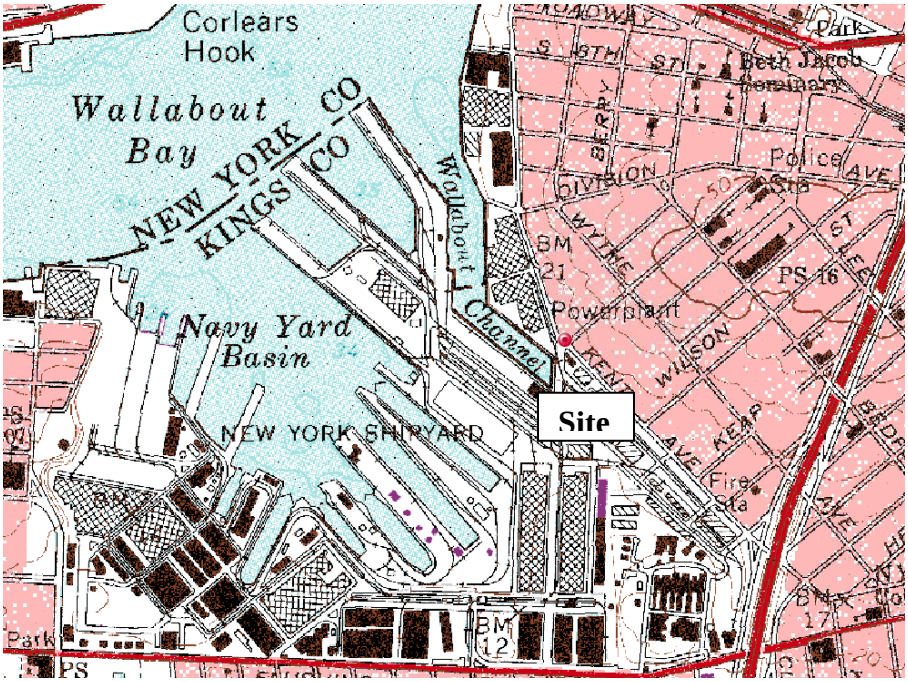


Figure 2-2. USGS Location & Drainage Map

Erosion and Sediment Control

A detailed erosion and sediment control plan is provided in the NYSDEC approved engineering design drawing (See Appendix D). The implementation of erosion control measures remains the responsibility of DCA and shall be in accordance with the most recent NYSDEC and local regulations at the time of construction.

Temporary Erosion and Sediment Control Features

The significant components of this plan are as follows. At no time is any of the site left unprotected.

Silt fences - Silt fences are proposed down slope of any soil disturbance and around all soil stockpile areas. Soil stockpile areas show grading limits and maintenance measures.

Hay bales - hay bales may be used as an alternative to silt fencing where ground penetration for the stakes is not possible.

Dirtbag - Construction which must be dewatered must be pumped through a DirtBag© system. This is a filter bag which connects to the discharge side of a pump, and is generally mounted on hay bales for further removals. It can be trailer mounted. Dewatering is not anticipated, but if required will be performed in this manner.

Potential impacts from sedimentation and erosion during construction will be mitigated by implementation of this Soil Erosion and Sedimentation Control Plan.

The objectives of the plan are to:

- Control erosion at its source with temporary control devices.
- Minimize the runoff from areas of disturbance.
- Remove sediments from stormwater runoff before discharge to the drainage systems.

These objectives would be achieved by implementing the following general soil erosion and control measures during grading and earthwork operations:

- Minimize land disturbance.

- Minimize the extent of cleared soil at any particular time.

- Retain existing vegetation wherever feasible.

- Stabilize disturbed areas that would not require further earthwork operations within 48 hrs.

- Minimize the extent of disturbed slopes.

- Trap sediment on-site prior to discharge of runoff.

Soil erosion and sediment control during construction will be accomplished through a variety of measures, including silt fences, straw hay bale dikes, storm drain inlet protection (if needed), and dust control. Additionally, DCA will follow the control procedures listed below:

- Have an independent inspection of the effectiveness and condition of erosion control devices during storm events, after each rainfall of 0.5-inch magnitude or greater, and prior to forecasted storms; at a minimum, every 7 days.

- Repair or replace damaged erosion control devices immediately or in no case more than 4 hours after observing such deficiencies.

- Be prepared to implement interim drainage controls and erosion control measures as may be necessary during the course of the construction.

- Make available on-site all equipment, materials, and labor necessary to effect emergency erosion control and drainage improvement within 4 hours of any impending emergency situation.

- Make a final inspection of all disturbed areas, clean all cross culverts, and sweep off roadways.

- Have on call at all times a responsible representative who, when authorized, would mobilize the necessary personnel, materials, and equipment and otherwise provide the required action when notified of any impending emergency situation.

- Supply a telephone number to the local Municipal Engineer so that the contractor may be contacted during the evenings, overnight, and on weekends, if necessary.

- Maintain a site specific log and record of all certifications of the practices and inspections performed on site.

The control measures for this site have been designed to minimize the impact of construction activities.

Pollution Prevention Measures

The following good housekeeping/best management practices will be adhered to during construction activities:

- Stored materials will be placed in a neat orderly manner in their appropriate containers, and if possible, within an enclosure. No bulk lubricants, etc. will be stored on site.

- Equipment will be properly maintained and kept in good working condition.

- Manufacturer's recommendations for proper use and disposal of materials will be followed.

- The site superintendent or designee will inspect the site daily for proper use and disposal of materials.

- If on-site equipment storage is required, equipment will be located such that leaks or spills, if any, will drain to protected sump areas (i.e., pumped sump locations).

- No vehicle washing will occur on the site.

- The site superintendent will periodically verify that project personnel have received the proper training and that they are familiar with the requirements of the SWPPP.

- Contractors will be required to sign a Contractor Certification Statement to verify that the project SWPPP and SPDES general permit for construction activity is understood, and that at least one employee,who has received four (4) hours of Department endorsed training, will be on site to assume responsibility for implementation of SWPPP requirements. All statements shall be kept in the Construction Log Book.

- Contractors will be required to sign a Documentation Acknowledgement form to verify that all contractors and subcontractors have received, read, and

understand the project Technical Specifications, the Construction Drawings, and the SWPPP.

Implementation Schedule and Maintenance During Construction

Table 4-1 presents the schedule and sequence of sedimentation and erosion control features during construction. This is a suggested schedule and is subject to the Contractor's actual schedule, means, and methods.

After Construction

Table 4-1 presents the schedule and sequence of sedimentation and erosion control features after construction. The Owner is committed to maintaining its site facilities.

Table 4-1. Stormwater Pollution Control Operations

Prior to Construction

- Notify Municipality and NYSDEC. Develop list of contacts.
- Install silt fence, hay bales.
- Install Silt Bags.

During Construction

- Maintain and supplement erosion control measures as necessary. At a minimum, contractors should inspect all measures weekly and after storm events or incidents. An independent inspector must at a minimum inspect all measures every 7 days and after storm events or incidents.
- Check filter fences and bags weekly, and after rainfall events; clean and replace as necessary.
- Public streets and parking areas to remain broom clean at the end of the day.
- Soil stockpile areas to be maintained as shown on the plans and not to exceed 2:1 slopes. Stockpiles not in use to be seeded and mulched.

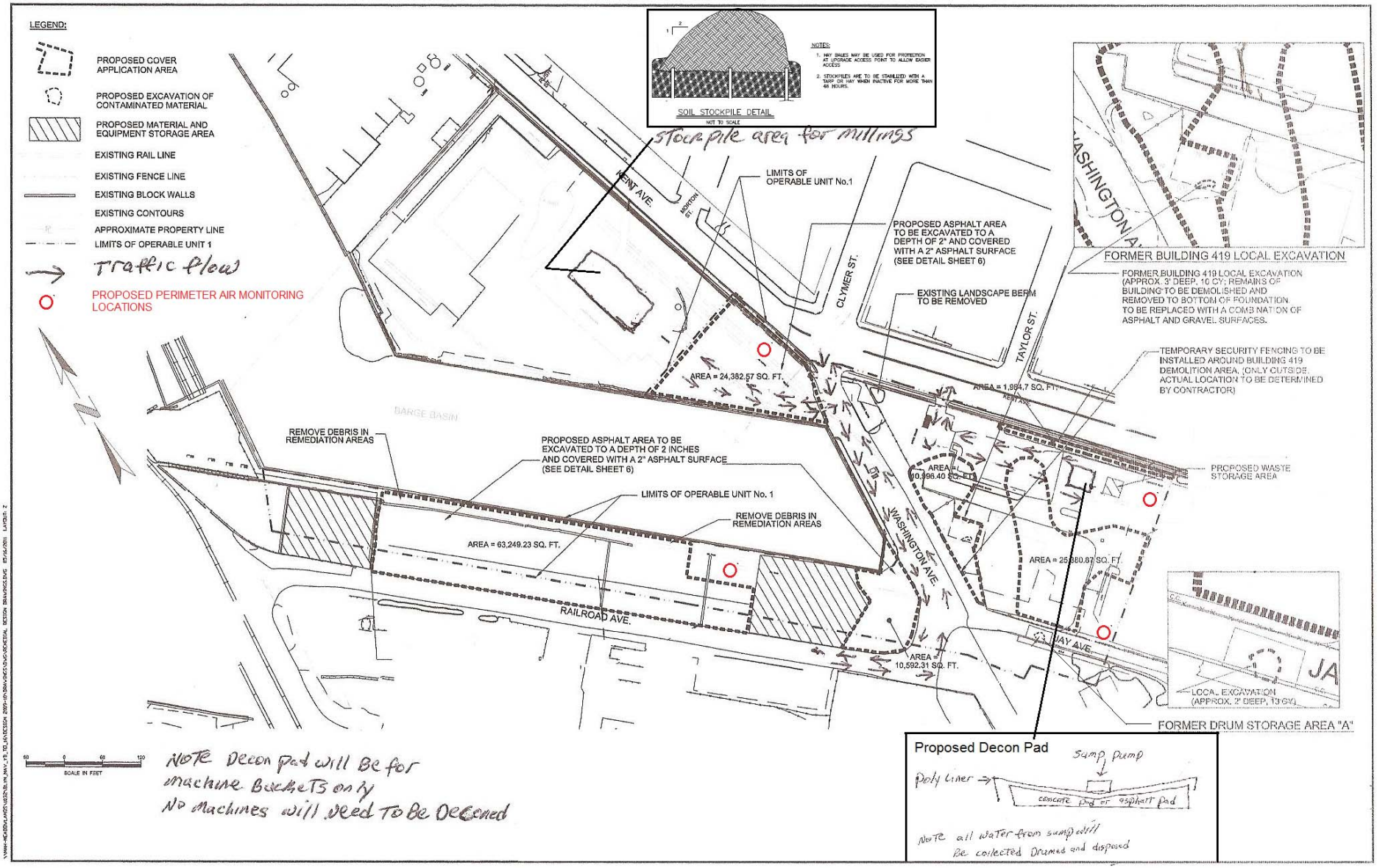
After Construction

- Remove erosion control measures.

Appendix A

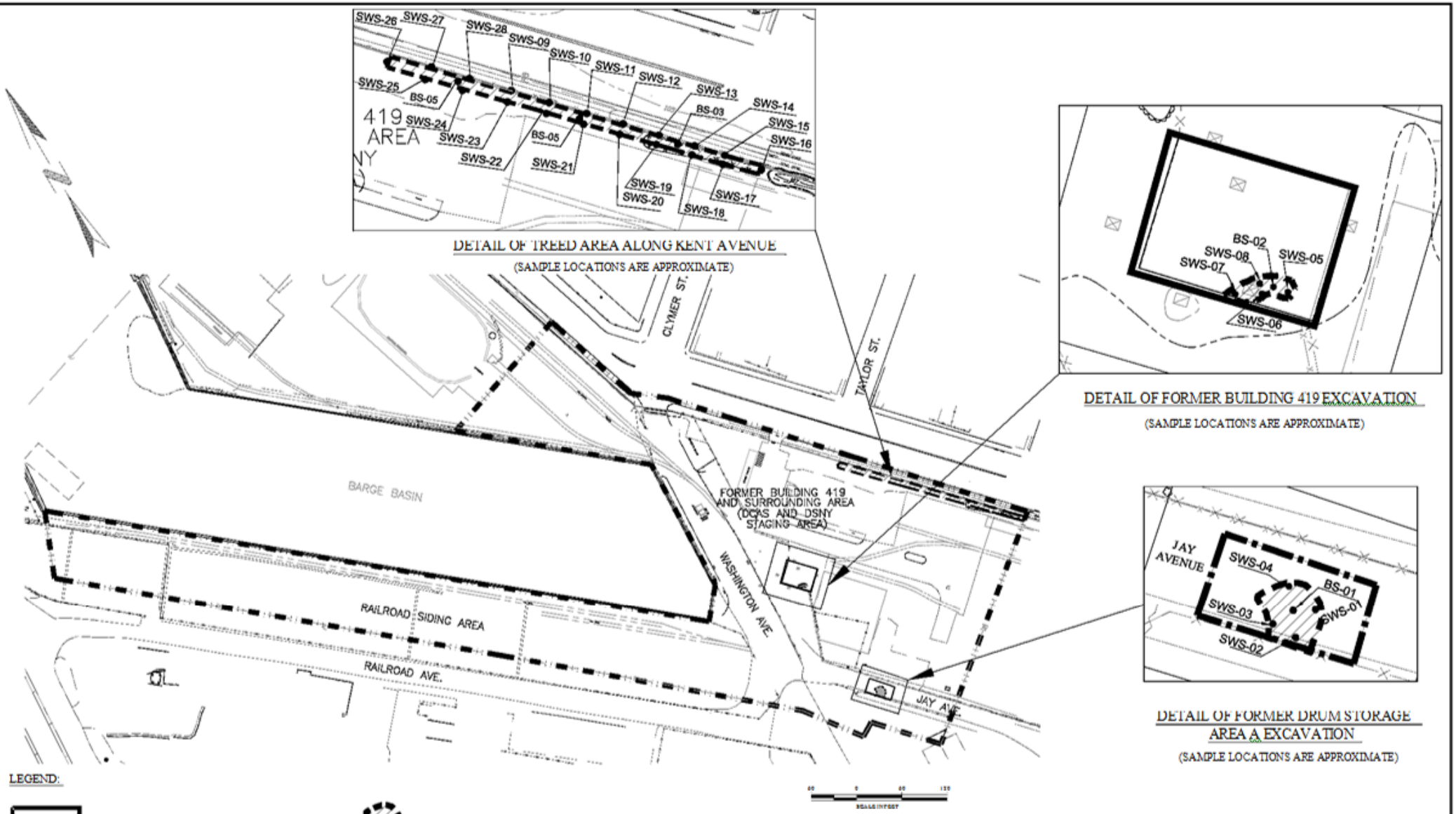
Site Plan

Appendix A - Site Plan



Appendix B

Proposed Sampling Locations



Field Sampling Plan and
Quality Assurance Project Plan

City of New York
Department of Sanitation

Appendix B

Proposed
Sampling Locations

Appendix C

Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN

1. INTRODUCTION

The following is a Quality Assurance Project Plan (QAPP) prepared for the portion of OU-1 of the Brooklyn Navy Yard that includes Former Drum Storage Area A, Former Building 419 and the treed area along Kent Avenue, which are the areas of concern for the Field Sampling Plan (FSP) provided in Section 2 and the Site Management Plan created for this project. These are the only three areas where contaminated soil will be removed and confirmatory testing conducted. This QAPP presents the QA/QC procedures to be followed for the collection of confirmatory samples and the analytical methods and procedures that
will be followed to analyze the confirmatory samples collected from the areas identified above.

2. PROJECT ORGANIZATION

HydroQual will have overall responsibility for overseeing the excavation of contaminated soils and collection of confirmatory soil samples by the selected Contractor in Former Drum Storage Area A, the location of Former Building 419 and the treed area along Kent Avenue for the DSNY. The responsibilities of the various team members are presented below:

DSNY Project Manager: Marshah-Reaff Barrett

The DSNY Project Manager is responsible for managing the project for the DSNY and will be the DSNY contact person for HydroQual during the excavation and sampling activities.

HydroQual Project Manager: Barry Cheney, P.E.

The HydroQual Project Manager is responsible for managing and coordinating the project as identified in the FSP, overseeing the production of project deliverables and ensuring that the project objectives are met.

HydroQual Field Personnel: To be identified

The field personnel will be responsible for observing the field procedures identified in the FSP. The field personnel will be responsible for overseeing the excavation of the soils and collection of samples by the Contractor as specified in the FSP, ensuring that sample custody is maintained, and documenting field activities in the field notes.

HydroQual Project QA Coordinator: Maureen Migliorini

The Project QA Coordinator will be responsible for reviewing the laboratory data deliverables, assessing that data quality for chemical analyses was maintained, performing data validation, and supervising project quality assurance coordination.

Construction Contractor (Contractor): To be identified

The selected Contractor will be responsible for conducting the excavation of the contaminated soils and for collecting the confirmatory samples following the procedures identified in the FSP. The Contractor will also be responsible for completing the chain of custody form and the packing and transport of the samples to the Analytical Laboratory.

Analytical Laboratory: To be identified

A certified Analytical Laboratory selected by the Contractor and approved by the DSNY will perform soil analyses. The NYSDOH-ELAP laboratory to be identified at a later date will perform all analyses. The laboratory will designate a Laboratory Project Manager. The Laboratory Project Manager will provide analytical support to this project and is responsible for ensuring that all laboratory analyses meet the project data quality objectives and other specifications detailed in this QAPP.

The Analytical Laboratory is expected to meet the following minimum requirements:

- Adhere to the methods outlined in the statement of work including those methods referenced for each analytical procedure;
- Deliver electronic data files as specified;
- Meet reporting requirements;
- Implement QA/QC procedures, including the QAPP data quality requirements, laboratory analysis plan requirements, and performance evaluation testing requirements;
- Allow the laboratory and data audits to be performed, if deemed necessary;
- Follow documentation, chain of custody, and sample logbook procedures; and
- Meet turnaround times for deliverables.

Changes in the laboratory procedures specified in the QAPP will not be permitted without written documentation of the intended change and the rationale. The Project QA Coordinator, as appropriate, must approve changes in advance.

3. SAMPLING OBJECTIVES

The objective of the FSP presented in Section 2.0 is to confirm that the remedial action of soil excavation has removed all soils with PCB concentrations greater than 10 ppm and all soils with a TCLP lead concentration greater than 5 mg/L. Field sampling will be conducted to achieve this objective.

The primary objective of this QAPP is to present the necessary information to assess and document the precision, accuracy, completeness, and representativeness of the data generated by this study.

4. METHODS OF ANALYSIS

Soil samples will be delivered to a NYSDOH ELAP-certified laboratory, under stringent chain of custody protocols. Soil samples will be analyzed for the following NYSDEC Analytical Service Protocol (ASP) parameters:

- PCBs following SW 846 Method 8082
- TCLP lead analyses using SW 846 Method 1311/6010.

The level of reporting will be Category B deliverables, Contract Laboratory Protocol (CLP) ASP. The parameters that will be used to specify data quality requirements and to evaluate the analytical system performance for the soil samples are precision, accuracy, representativeness, completeness, and comparability.

5. QUALITY ASSURANCE OBJECTIVES

The overall quality assurance objectives for this project are to develop and implement procedures that will ensure the collection of representative data of known, acceptable, and defensible quality.

The data quality parameters used to assess the acceptability of the data are precision, accuracy, representativeness, comparability, and completeness. These parameters are discussed below.

5.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Analytical precision is measured through matrix spike/matrix spike duplicate (MS/MSD) samples for organic analysis and through laboratory duplicate samples for inorganic analyses. Analytical precision measurements will be carried out on project specific samples at a minimum frequency of one per laboratory analysis group or one in twenty samples, whichever is more frequent, per matrix analyzed. Laboratory precision will be evaluated against quantitative relative percent difference (RPD) performance criteria.

Precision measurements can be affected by the nearness of a chemical concentration to the method detection limit, where the percent error (expressed as RPD) increases. The equation used to express precision is:

$$RPD = \frac{(C_1 - C_2) \times 100\%}{(C_1 + C_2)/2}$$

Where:

RPD = relative percent difference

C_1 = larger of the two observed values

C_2 = smaller of the two observed values

5.2 Accuracy

Accuracy is a measure of the overall agreement of a measurement to a known value. Field accuracy is controlled by adherence to sample collection procedures outlined in the FSP.

"Spiking" samples with known standards (surrogates, laboratory control samples, and/or matrix spike) and measuring the percent recovery will assess analytical accuracy. Accuracy measurements on matrix spike samples will be carried out at a minimum frequency of one in 20 samples per matrix analyzed. Because MS/MSDs measure the effects of potential matrix interference of a specific matrix, the laboratory will perform MS/MSDs only on samples from this project and not from other projects. Surrogate recoveries will be determined for every sample analyzed for organics.

Laboratory accuracy will be evaluated against quantitative matrix spike and surrogate spike recovery performance criteria. Accuracy can be expressed as a percentage of the true or reference value, or as a percent recovery in those analyses where reference materials are not available and spiked samples are analyzed. The equation used to express accuracy is as follow:

$$\%R = 100\% \times (S-U)/C_{sa}$$

Where:

%R = percent recovery

S = measured concentration in the spiked aliquot

U = measured concentration in the unspiked aliquot

C_{sa} = actual concentration of spike added

5.3 Representativeness

Representativeness expresses the degree to which data accurately and precisely represent an environmental condition. For this program, the analytes were selected based on NYSDEC requirements that were based on past sampling.

5.4 Comparability

Comparability expresses the confidence with which one data set can be evaluated in relation to another data set. This is not applicable to this sampling program.

5.5 Completeness

Completeness is a measure of the amount of data that is determined to be valid in proportion to the amount of data collected. Completeness will be calculated as follows:

$$C = \frac{(\text{Number of acceptable data points}) \times 100}{(\text{Total number of data points})}$$

The data quality objective for completeness for this project is 95 percent. Data that have been qualified as estimated because the quality control criteria were not met will be considered valid for the purpose of assessing completeness. Data that have been qualified as rejected will not be considered valid for the purpose of assessing completeness.

6. QUALITY CONTROL CRITERIA

Sampling procedures for this investigation are described in detail in the FSP.

6.1 Field Sampling Quality Control

6.1.1 Sample Handling

Sample containers will be labeled with the client name, sample location number, sampling date and time, required analyses, and initials of the individual processing the sample. Field personnel will check all container labels, custody form entries, and logbook entries for completeness and accuracy at the end of sampling.

6.1.2 Sample Collection Documentation

Field Activities. A complete record of field activities will be maintained for the duration of the field phase of work. Documentation includes:

- Daily recordkeeping (including log book and field reports) by field personnel of field activities;
- Recordkeeping of samples collected by the Contractor for analysis; and
- Use of sample labels and tracking forms for samples collected for analysis.

The field personnel will maintain the field logbook. The field logbook will provide a description of sampling activities, sampling personnel, weather conditions, instrument calibration and a record of any modifications to the procedures and plans identified in the project plans. The field logbook is intended to provide sufficient data and observations to enable participants to reconstruct events that occurred during the sampling period. Daily field reports will also document field activities.

Field Sample Observations. Information to be collected for the soil samples includes a description of the soil including a visual description and a notation of any odors that may be present. After sample collection, the following information will be recorded on a sampling form:

- Date, time, and name of person logging sample;
- Weather conditions;
- Equipment used for sampling;
- Sample location number;
- Project designation;
- Physical description of soil;

- Documentation of any unusual observations; and
- Other significant comments.

Any deviations or additions to the FSP will be documented in the field report prepared upon completion of field activities.

6.1.3 Sample Chain of Custody Documentation

Soil sample labeling and custody will be performed as described in the FSP in Sections 2.1 and 2.2, respectively.

6.1.4 Sample Preservation

To control the quality of laboratory analysis of samples, established preservation and storage measures will be taken. Immediately after the sample jars are filled with sample, they will be placed in the appropriate coolers with a sufficient number of ice packs or ice to keep them cold until arrival at the laboratory

6.1.5 Sample Shipment

The Contractor will be responsible for all sample tracking and custody procedures in the field. The Contractor will be responsible for final sample inventory and will maintain sample custody documentation. At the end of each day, and prior to transfer, custody form entries will be made for all samples. All custody forms will be completed in indelible ink. Copies of all forms will be retained as appropriate and included as appendices to QA/QC reports to management. Finally, information on the sample labels will be checked against logbook entries and custody forms, and samples will be recounted. Custody forms will accompany all samples; the forms will be signed at each point of transfer and will include sample numbers.

Prior to shipping, sample containers will be securely packed inside the cooler with ice packs or ice. The original, signed custody forms will be transferred with the cooler. The cooler will be secured and appropriately sealed and labeled for delivery to the laboratory. Samples will be couriered on the day of sampling.

6.1.6 Sample Receipt

The laboratory will ensure that the custody forms are properly signed upon receipt of the samples and will note questions or observations concerning sample integrity on the custody forms. The laboratories will contact the Contractor or the Project QA Coordinator immediately if discrepancies are discovered between the custody forms and the sample shipment upon receipt. The laboratory will specifically note any coolers that do not contain ice packs or are not sufficiently cold (4°C) upon receipt.

6.1.7 Intra-Laboratory Sample Transfer

The Laboratory Project Manager will ensure that a sample tracking record is maintained that follows each sample through all stages of laboratory processing. The sample tracking record must contain at a minimum the initials of responsible individuals performing the analyses, dates of sample extraction, preparation and analysis, and the type of analysis being performed.

7. CALIBRATION PROCEDURES AND FREQUENCY

7.1 Laboratory Calibration

The laboratory calibration procedures and frequency for the required analytical methods to be followed by the selected laboratory are specified in the NYSDEC ASP CLP Analytical Method Procedures (10/95). The selected laboratory's calibration schedule will adhere to all analytical method requirements.

7.2 Field Calibration

Trained field personnel will be familiar with the field calibration, operation, and maintenance of the equipment. They will perform field calibrations, checks, and instrument maintenance daily. A trained team member will perform daily field checks and instrument maintenance prior to use.

Maintenance, calibration, and equipment operation will follow the procedures outlined in the manufacturer's Operation and Field Manuals accompanying the respective instruments.

The field personnel will be responsible for keeping a master instrument calibration/maintenance form for each measuring device. Each form shall include at least the following information, where applicable:

- Name of device and/or instrument calibrated;
- Device/instrument serial and/or I.D. number;
- Frequency of calibration;
- Date of calibration;
- Results of calibration; and
- Name of person performing the calibration; and identification of the calibration standards.

8. LABORATORY QUALITY CONTROL PROCEDURES

8.1 Sample Analysis

The Laboratory Standard Operating Procedures (SOP) provided by the contracted analytical laboratory will describe in detail the chemical analyses for this study (PCBs and TLCP lead). These SOPs will be kept in the project file at the analytical laboratory and will include written protocols for the analytical methods to be used.

The laboratory will also calculate the method detection limit for each analyte and establish an initial calibration curve for all analytes.

8.2 Laboratory Quality Control Criteria

Results of the quality control samples from each sample group will be reviewed immediately after a sample group has been analyzed. The quality control sample results will then be evaluated to determine if control limits have been exceeded. If control limits are exceeded in the sample group, the Project QA Coordinator will be contacted immediately, and corrective action (e.g., method modifications followed by reprocessing the affected samples) will be initiated prior to processing a subsequent group of samples.

All primary chemical standards and standard solutions used in this project will be traceable to the National Institute of Standards and Technology, Environmental Resource Associates, National Research Council of Canada, or other documented, reliable, commercial sources. Standards will be validated to determine their accuracy by comparison with an independent standard. Any impurities found in the standard will be documented.

The following sections summarize the procedures that will be used to assess data quality throughout sample analysis.

8.2.1 Initial and Continuing Calibration

Multipoint initial calibration will be performed on each instrument at the start of the project, after each major interruption to the analytical instrument, and when any ongoing calibration does not meet control criteria. Ongoing calibration will be performed daily for metals and organic analyses and with every sample batch for conventional parameters (when applicable) to track instrument performance.

Instrument blanks or continuing calibration blanks provide information on the stability of the baseline established. Continuing calibration blanks will be analyzed immediately prior to continuing calibration verification at a frequency of one continuing calibration blank for every 10 samples analyzed at the instrument for inorganic analyses and every 21 hours for organic analyses. If the ongoing calibration is out of control, the analysis must come to a halt until the source of the control failure is eliminated or reduced to meet control specifications. All project samples analyzed while instrument calibration was out of control will be reanalyzed.

8.2.2 Field Blanks

Field blanks shall be taken to evaluate the cleanliness of sampling equipment, sample bottles, and the potential for cross-contamination of samples due to airborne contaminants present in the air at the site and handling of equipment and sample bottles. Field blank samples shall be performed on the sampling equipment used to collect the soil samples. The frequency of field blanks taken shall be one per decontamination event for each type of sampling equipment (e.g., a hand auger for soil sampling), at a minimum of one per equipment type per day.

Where required, field blanks shall be obtained prior to the occurrence of any analytical field sampling event by pouring laboratory-supplied water over a particular piece of sampling

equipment and into a sample container. The Analytical Laboratory shall provide field blank water and sample jars with preservatives as required for the collection of all field blanks. Glass jars shall be used for organic blanks. The field blanks shall accompany field personnel to the sampling location. The field blanks shall be analyzed for the same analytes as the soil samples being collected that day and shall be shipped with the samples taken subsequently that day.

Field blanks shall be taken in accordance with the procedure described below:

- Decontaminate sampler using the procedures specified in this plan.
- Pour distilled/de-ionized water over the sampling equipment and collect the rinsate water in the appropriate sample bottles.
- The sample shall be immediately placed in a sample cooler and maintained at a temperature of 4°C until receipt by the laboratory.
- Fill out sample log, labels, and chain of custody forms, and record in field notebook.

8.2.3 Matrix Replicates

Analytical replicates provide information on the precision of the analysis and are useful in assessing potential sample heterogeneity and matrix effects. Analytical replicates are sub samples of the original sample that are prepared and analyzed as a separate sample. A minimum of one replicate will be analyzed per sample group or for every 20 samples, whichever is more frequent. When matrix spikes are not available or appropriate, a matrix triplicate will be analyzed per sample group or for every 20 samples, whichever is more frequent.

8.2.4 Matrix Spikes and Matrix Spike Duplicates

Analysis of matrix spike samples provides information on the extraction efficiency of the method on the sample matrix. By performing duplicate matrix spike analyses, information on the precision of the method is also provided for organic analyses. A minimum of one matrix spike will be analyzed for every sample group or for every 20 samples, whichever is more frequent, when possible.

8.2.5 Surrogate Spikes

The project samples analyzed for organic compounds will be spiked with appropriate surrogate compounds as defined in the analytical methods. The laboratories will report surrogate recoveries; however, no sample result will be corrected for recovery using these values.

8.2.6 Method Blanks

Method blanks are analyzed to assess possible laboratory contamination at all stages of sample preparation and analysis. A minimum of one method blank will be analyzed for every extraction batch or for every 20 samples (10 samples for conventional parameters), whichever is more frequent.

8.2.7 Sample Labeling

All sample containers will be labeled at the time of sampling clearly identifying the project name, sampler's initials, location number, sample number, analysis to be performed, date, and time.

8.2.8 Sample Handling

Soil samples obtained for chemical analyses will be placed in appropriate laboratory supplied containers. The Analytical Laboratory will provide pre-cleaned sample containers containing preservatives as required. Upon collection, samples will be placed in a cooler maintained at a temperature of approximately 4°C. Chain of custody and field log forms will be completed.

Prior to transport to the laboratory, sample containers will be appropriately packed and secured inside a cooler with ice packs or ice. The original signed custody forms will be transported with the cooler. The cooler will be secured by taping and sealing with a custody seal.

The laboratory will ensure that custody forms are properly signed upon receipt of the samples and note questions or observations concerning sample integrity on the custody forms. The laboratories will contact the Project QA Coordinator immediately if discrepancies between the custody forms and the sample shipment are discovered upon receipt. The laboratory will specifically note any coolers that do not contain ice packs or ice and are not sufficiently cold upon receipt. The laboratory will not dispose of the environmental samples for this project until notified by the Project QA Coordinator or the client in writing.

8.2.9 Sample Custody

It is essential that the possession of samples be traceable from the time they are collected through analysis. This section describes minimum program requirements for sample handling and chain of custody procedures.

Samples are considered to be in "custody" if they are:

- In the custodian's possession or view;
- Retained in a secured place (under lock) with restricted access; or
- Placed in a container and secured with an official seal(s) such that the sample cannot be reached without breaking the seal(s).

The principal documents used to identify samples and to document possession are custody records and seals, field logbooks, and field tracking forms. Custody procedures will be initiated during sample collection. A custody record similar to that shown on Figure 3-1 will accompany each sample. Each person who has custody of the samples will sign the form and ensure that the samples are not left unattended unless properly secured. Minimum documentation of sample handling and custody will include:

- Sample location, project name, and unique sample number;
- Sample collection date and time;

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION

CUSTOMER: ______
ADDRESS: ______
TELEPHONE: ______
FAX: ______
PROJECT: ______
PROJECT MANAGER: ______
PROJECT LOCATION: ______
STATE: ______
PO NUMBER: ______

REPORT INFORMATION

SEND REPORT TO: ______

SEND INVOICE TO: ______

PROJECT INFORMATION

TURNAROUND
(CONFIRM RUSH TAT'S WITH LAB)
☐ STANDARD
☐ RUSH

☐ 24 HOURS 100%
☐ 48 HOURS 75%
☐ 72 HOURS 50%
☐ 1 WEEK 25%
☐ 10 DAYS 10%

DELIVERABLES
(PLEASE CHECK BOX)
☐ STANDARD ☐ FULL/CAT-B
☐ WASTE ☐ BUST
☐ NJ REDUCED ☐ CAT-A

ELECTRONIC DELIVERABLES
(PLEASE CHECK BOX)
☐ HAZSITE/CSV ☐ EXCEL-NJCC
☐ EQUIS ☐ EXCEL-NY TAGM
☐ CD ROM ☐ EXCEL-PA ACT II
☐ OTHER (SPECIFY)

ANALYTICAL REQUESTS

LAB SAMPLE NUMBER (LAB USE ONLY)	SAMPLE IDENTIFICATION	METHANOL BOTTLE #	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE: COMPOSITE (C)	SAMPLE TYPE: GRAB (G)	SAMPLE MATRIX	No. of Bottles: H2SO4	HNO3	HCl	NaOH	Zinc + NaOH	Ascorbic	NONE	Methanol	Other	ANALYSIS

SAMPLER CERTIFIES THAT EACH SAMPLE RECEIVED PROPER FIELD PRESERVATION (IF REQUIRED) (INITIALS) ______

SAMPLE HAZARDS: FLAMMABLE ☐ SKIN IRRITANT ☐ NON-HAZARD ☐ UNKNOWN ☐ NOXIOUS FUMES ☐

SPECIAL INSTRUCTIONS: ______ TEMPERTURE UPON RECEIPT: ______

RELINQUISHED BY: ______ AGENT OF: ______	DATE / TIME	RECEIVED BY: ______ AGENT OF: ______	DATE / TIME
RELINQUISHED BY: ______ AGENT OF: ______	DATE / TIME	RECEIVED BY: ______ AGENT OF: ______	DATE / TIME

Sample Chain of Custody Record

.Any special notations on sample characteristics or problems;
- Description of analysis to be performed;
- Initials of the person collecting the sample; and
- Date sample was sent to the laboratory.

The completed custody form will be placed in a plastic envelope that will accompany the ice chest containing the listed samples. The ice chest will be sealed with a custody seal. Upon transfer and receipt of samples at the laboratory, the shipping container custody seal will be broken. The persons transferring custody of the samples will sign the custody form. The receiver will record the condition of the samples. Custody records will be included in the analytical report prepared by the laboratory.

9. DATA DELIVERABLES

The laboratory will be responsible for internal checks on data reporting and will correct errors identified during the quality assurance review. Close contact will be maintained with the laboratories to resolve any quality control problems in a timely manner. The Analytical Laboratories will be required, where applicable, to report the following:

- **Project Narrative**. This summary, in the form of a cover letter, will discuss problems, if any, encountered during any aspect of analysis. This summary should discuss, but not be limited to, quality control, sample shipment, sample storage, and analytical difficulties. Any problems encountered, actual or perceived, and their resolutions will be documented in as much detail as necessary.

- **Chain of Custody Records.** Legible copies of the custody forms will be provided as part of the data package. This documentation will include the time of receipt and condition of each sample received by the laboratory. Additional internal tracking of sample custody by the laboratory will also be documented.

- **Sample Results.** The data package will summarize the results for each sample analyzed. The summary will include the following information when applicable:

  - Field sample identification code;
  - Corresponding laboratory identification code;
  - Sample matrix;
  - Date of sample extraction;
  - Date and time of analysis;
  - Weight and/or volume used for analysis;
  - Final dilution volumes or concentration factor for the sample;
  - Percent moisture in the sediment sample;
  - Identification of the instrument used for analysis;
  - Method reporting and quantification limits;

- Analytical results reported to three significant figures with reporting units identified;
- All data qualifiers and their definitions; and
- Computer diskettes with the data in Excel format.

- **Quality Assurance/Quality Control Summaries**. This section will contain the results of all QA/QC procedures. Each QA/QC sample analysis will be documented with the same information required for the sample results (see above). The laboratory will make no recovery or blank corrections. The required summaries are listed below; additional information may be requested.

- **Calibration Data Summary.** Report the concentrations of the initial calibration and daily calibration standards, and the date and time of analysis. List the response factor, percent difference, and retention time for each analyte as appropriate. Report results for standards to indicate instrument sensitivity.

- **Internal Standard Area Summary.** Report the stability of internal standard areas.

- **Method Blank Analysis.** Report the method blank analyses associated with each sample and the concentration of all compounds of interest identified in these blanks.

- **Surrogate Spike Recovery.** Report all surrogate spike recovery data for organic compounds. List the name and concentration of all compounds added, percent recoveries, and range of recoveries.

- **Matrix Spike Recovery.** Report all matrix spike recovery data for organic analyses. List the name and concentration of all compounds added, percent recoveries, and range of recoveries. Report the RPD for all duplicate analyses.

- **Matrix Duplicate.** Report the RPD for all matrix duplicate analyses.

- **Relative Retention Time.** Report the relative retention time of each analyte detected in the samples for both primary and conformational analyses.

- **Original Data.** Legible copies of the original data generated by the laboratory will include:

  - Sample refrigerator temperature log;
  - Sample extraction, preparation, and cleanup logs;
  - Instrument specifications and analysis logs for all instruments used on days of calibration and analysis;
  - Reconstructed ion chromatograms for all samples, standards, blanks, calibrations, spikes, replicates, and reference materials;
  - Enhanced spectra of detected compounds with associated best-match spectra for each sample;

- Printouts and quantification reports for each instrument used, including reports for all samples, standards, blanks, calibrations, spikes, and replicates;
- Original data quantification reports for each sample; and
- Original data for blanks and samples not reported

The laboratory will make no recovery or blank corrections.

10. DATA REDUCTION

Data reduction is the process by which original data (analytical measurements) are converted or reduced to a specified format or unit to facilitate analysis of the data. Data reduction requires that all aspects of sample preparation that could affect the test result (such as sample volume analyzed or dilutions required) be taken into account in the final result. It is the laboratory analyst's responsibility to reduce the data, which are subjected to further review by the Laboratory Project Manager, the Project Manager, and the Project QA Coordinator. Formulas used for calculating sample results are presented in the laboratory SOPs.

The laboratory analyst is responsible for ensuring that the analytical data are correct and complete, the appropriate SOPs have been followed, and the quality control results are within the acceptable limits. The Project QA Coordinator is responsible for confirming that all analyses are performed by the Analytical Laboratory and are correct, properly documented, complete, and satisfy the project data quality objectives for samples.

The laboratory will provide a data package that will allow independent validation of the sample identity and integrity, the laboratory measurement system, and to provide for validated quantitative and qualitative data.

11. DATA QUALITY CONTROL

Once data are received from the laboratory, a number of QC procedures will be followed to provide a prompt, accurate, and meaningful evaluation of the data. Specific routine procedures will be followed in assessing data precision, accuracy, and completeness.

Data Quality Review

The laboratory will deliver complete data packages for all chemical analyses. The data will be evaluated in accordance with the QAPP. Chemical data will be reviewed with regard to the following, as appropriate to the particular analysis:

- Chain of custody documentation;
- Holding times;
- Blanks;
- Detection limits;
- Surrogate recoveries;
- Matrix spike/matrix spike duplicate recoveries; and
- Laboratory and field duplicate relative percent differences.

Data Quality Summary

The data will be summarized in a quality assurance report. The quality assurance report will be included in the report of investigation. This summary will also include an evaluation of the QA/QC results reported by the laboratory.

Data are not considered final until validated. All data, including laboratory and field quality control sample results, will be summarized in a quality assurance report and submitted after validation. The quality assurance report will be included as an appendix to the data report. In addition, the data report will include a summary of the sampling event, deviations from this QAPP, and actions taken to address those deviations.

12. LABORATORY PERFORMANCE AND DATA MANAGEMENT

The laboratory and field performance audits, corrective action procedures, data management, data validation, and data reporting procedures described in the following sections apply to the laboratory analysis performed as part of the FSP.

12.1 Laboratory and Field Performance Audits

Laboratory and field performance audits consist of on-site reviews of quality assurance systems and equipment for sampling, calibration, and measurement. Laboratory and field audits will not be conducted as part of this study; however, all laboratory audit reports will be made available to the Project QA Coordinator upon request. The laboratory is required to have written procedures addressing internal QA/QC; these procedures will be submitted and reviewed by a Project QA Coordinator to ensure compliance with the QAPP. The Laboratory Project Manager and QA Coordinator are required to ensure that all personnel engaged in sampling and analysis tasks have appropriate training.

12.2 Corrective Action Procedures

12.2.1 Corrective Action for Field Sampling

The field personnel, or their designees, will be responsible for correcting equipment malfunctions throughout the field sampling effort. The Project QA Coordinator will be responsible for resolving situations in the field that may result in nonconformance or noncompliance with the QAPP. Corrective measures will be immediately documented in the field logbook.

12.2.2 Corrective Action for Laboratory Analyses

The laboratory is required to submit and comply with the SOPs. The Laboratory Project Manager will be responsible for ensuring that appropriate corrective actions are initiated as required for conformance with this QAPP. Laboratory personnel will be responsible for reporting problems that may compromise the quality of the data.

The Project QA Coordinator will be notified immediately if any quality control sample exceeds the project-specified control limits. The analyst will identify and correct the anomaly

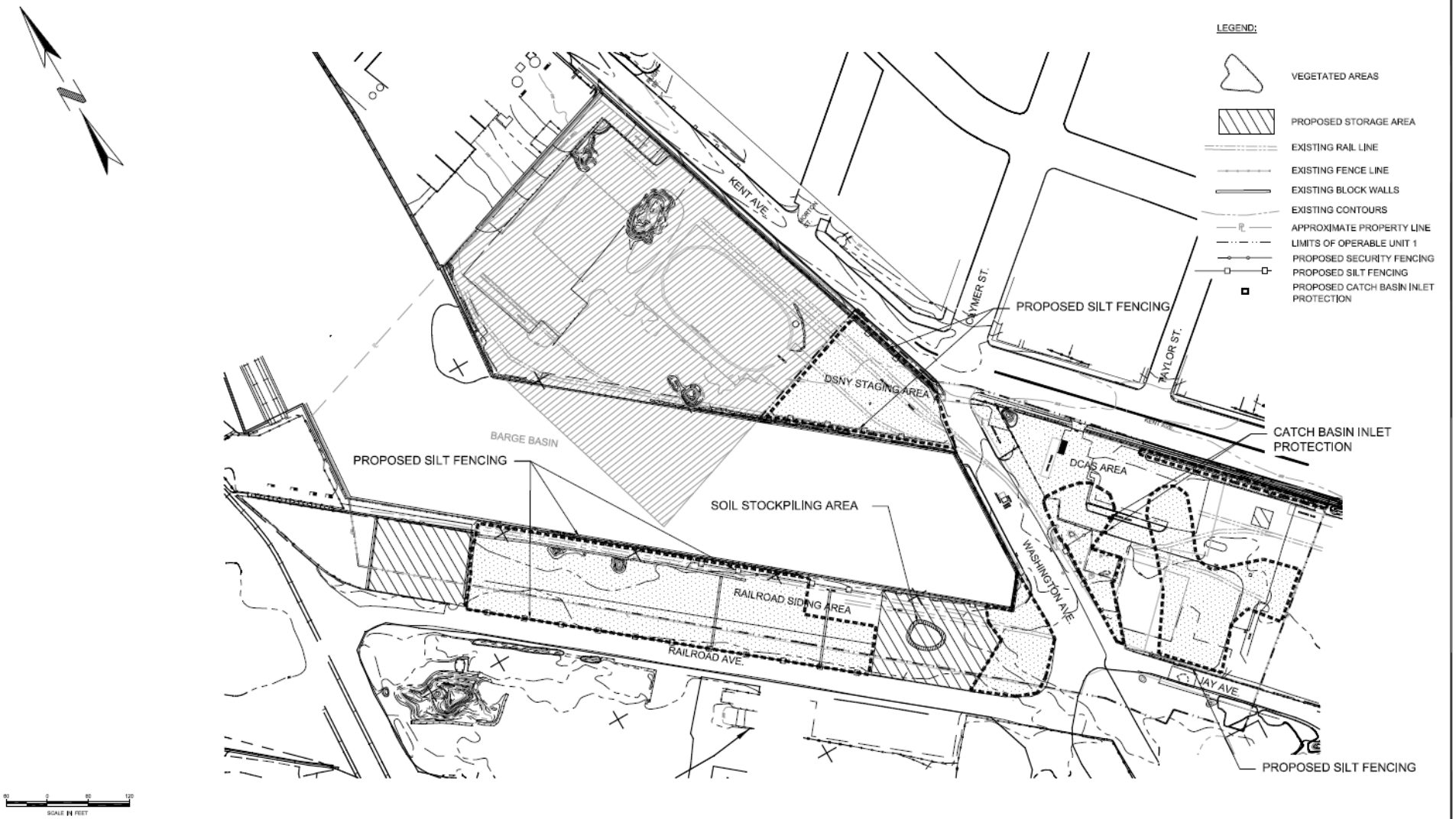
before continuing with the sample analysis. The Laboratory Project Manager will document the corrective action taken in a memorandum submitted to the Project QA Coordinator within five days of the initial notification. A narrative describing the anomaly, the steps taken to identify and correct the anomaly, and the treatment of the relevant sample batch (i.e., recalculation, reanalysis, re-extraction) will be submitted with the data package in the form of a cover letter.

12.2. 3 Data and Data Documentation

The original data and documentation generated by the laboratories will be kept in the project files after the data have been validated. Custody procedures will be followed for all laboratory data/documentation, whether in hard copy or electronic format. All data and data documentation are the responsibility of the Project Manager.

Appendix D

Erosion and Sediment Control Plan



APPENDIX D

BROOKLYN NAVY YARD KINGS COUNTY, NY OPERABLE UNIT 1	PROJECT NO. NYCS.020
REMEDIAL DESIGN	DRAWING NO. 5
EROSION AND SEDIMENT CONTROL PLAN	

Appendix E

Disposal Facility
Soil Sampling Protocol &
Acceptance Criteria

APPENDIX - E

DEEP GREEN of NEW YORK

Thermal Treatment of Petroleum Contaminated Soils

SOIL SAMPLING PROTOCOL

All SOURCES OTHER THAN RESIDENTIAL

Total Petroleum Hydrocarbons (8015 or 418.1)
If Gasoline Contaminated include Total Benzene (8260B)*****
Total Lead (6010)*
Total Halogenated Organics (9020B, 9023, 8260, 8021)
Total PCB's (8082)
Total Metals (8-RCRA)*****

RESIDENTIAL SOURCES GREATER THAN 100 CUBIC YARDS

Total Petroleum Hydrocarbons (8015 or 418.1)
Total Lead (6010)*
If Gasoline Contaminated include Total Benzene (8260B)*****
If non-virgin material include Total Halogenated Organics (9020B, 9023, 8260, 8021)
Total PCB's (8082)
Total Metals (8-RCRA)*****

RESIDENTIAL SOURCES LESS THAN 100 CUBIC YARDS

Total Petroleum Hydrocarbons (8015 or 418.1)
If non-virgin material include Total Halogenated Organics (9020B, 9023, 8260, 8021), Total PCB's (8082)
Total Metals (8-RCRA)*****

***** If elevated Benzene or Total Metal concentrations are detected, additional analysis for TCLP Benzene and TCLP Metals may be required.

FREQUENCY OF TESTING

1 SET = UP TO 150 TON
2 SETS = UP TO 300 TON
3 SETS = UP TO 750 TON
ONE SET FOR EVERY 750 TON THERE AFTER

ALL LABS MUST BE NY STATE CERTIFIED

1106 River Road, New Windsor, NY 12553
PH 845-562-8778 ● FX 845-562-956

Table 1. Testing Requirements and Acceptance Criteria for Petroleum Contaminated Soil

Parameters to be Tested	Testing Requirement Applicable to:	Maximum Allowable Concentration
Total Petroleum Hydrocarbons (EPA Method 418.1 or 8015M)	All soils	As specified by the Article 19, Title 5 Air Permit
Total Benzene (EPA Method 8020, 8021 0r 8240)	All soils contaminated with gasoline except where the source is a residential property and the volume is less that 100 cubic yards	10 ppm
Total Lead (EPA 6010 or 7420)	All soils except where the source is a residential property and the volume is less that 100 cubic yards	400 ppm
Total Halogenated Organics (EPA Method 9020, 8010, 8021, 8240, 9252 or 9253	Soils contaminated with non-virgin petroleum products or soils from non-residential sources	1000 mg/kg
Total PCBs (EPA Method 8080)		1 mg/kg
Total Metals		See Section III of Attachment 1

Additional Requirements:

1. This testing is required in addition to the testing which may be required as part of a hazardous waste determination carried out in accordance with 6 NYCRR Part 372.2(a)(2).
2. The minimum number of samples shall conform with the following: one sample for a volume less than 100 cy; two samples for a volume between 100 and 200 cy; three samples for a volume between 200 and 500 cubic yards and, for volumes over 500 cubic yards, 3 samples for the first 500 cy plus one additional sample for each additional 500 cy or portion thereof.
3. Each sample of petroleum-contaminated soil collected shall be a composite sample made by combining a minimum of 3 individual grab samples taken from varying depths and at equally spaced locations which are chosen to provide a representative composite sample.
4. Unless otherwise approved by the Department in writing, all analyses must be conducted by a laboratory currently certified under the appropriate approval categories by the New York State Department of Health's Environmental Laboratory Approval Program (ELAP). Test methods used shall conform with USEPA SW-846. The analytical results must be signed by the laboratory.

Table last revised on 1/06/06

Appendix F

Notice of Intent (NOI)

1358331598

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
New York City Department of Sanitation

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Barrett

Owner/Operator Contact Person First Name
Marsha-Reaff

Owner/Operator Mailing Address
125 Worth STreet

City
New York

State
NY

Zip
10013-____

Phone (Owner/Operator)
646-885-4776

Fax (Owner/Operator)
212-788-3889

Email (Owner/Operator)
mbarrett@dsny.nyc.gov

FED TAX ID
__-_____ (not required for individuals)

Project Site Information

Project/Site Name
DSNY Brooklyn Navy Yard 13 Acre Parcel

Street Address (NOT P.O. BOX)
Kent Avenue

Side of Street
○ **North** ● **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Brooklyn

State: NY
Zip: 11205 -
County: Kings
DEC Region: 2

Name of Nearest Cross Street
Washington Ave

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 415246

Y Coordinates (Northing): 4372581

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in imperviousness**

● **Redevelopment with no increase in imperviousness**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ● PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ● PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

*note: for gas well drilling, non-high volume hydraulic fractured wells only

4. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law ? ○ **Yes** ● **No**

5. Is this a project which does not require coverage under the General Permit (e.g. Project done under an Individual SPDES Permit, or department approved remediation)? ○ **Yes** ● **No**

6. Is this property owned by a state authority, state agency, federal government or local government? ● **Yes** ○ **No**

7. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area. Round to the nearest tenth of an acre.

Total Site Acreage	**Acreage To Be Disturbed**	**Existing Impervious Area Within Disturbed**	**Future Impervious Area Within Disturbed**
13.5	3.0	2.9	2.9

8. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

9. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	**B**	**C**	**D**
%	100 %	%	%

10. Is this a phased project? ○ **Yes** ● **No**

11. Enter the planned start and end dates of the disturbance

Start Date 07/05/12 – **End Date** 08/31/12

12. Identify the nearest, natural, surface waterbody(ies) to which construction site runoff will discharge.

Name

Wallabout Channel -- Barge Basin

12a. Type of waterbody identified in Question 12?

- ○ Wetland / State Jurisdiction On Site (Answer 12b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 12b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ● Other Type Off Site: Coastal

12b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

13. Has the surface waterbody(ies) in question 12 been identified as a 303(d) segment in Appendix E of GP-0-10-001? ○ **Yes** ● **No**

14. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001? ○ **Yes** ● **No**

15. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? **If no, skip question 16.** ○ **Yes** ● **No**

16. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? **If Yes, what is the acreage to be disturbed?**

○ **Yes** ● **No**

[ ][ ][ ][ ].[ ]

17. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?

○ **Yes** ● **No**

18. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?

○ **Yes** ● **No** ○ **Unknown**

19. What is the name of the municipality/entity that owns the separate storm sewer system?

20. Does any runoff from the site enter a sewer classified as a Combined Sewer?

○ **Yes** ● **No** ○ **Unknown**

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book) ?

● **Yes** ○ **No**

22. Does this construction activity require the development of a SWPPP that includes Water Quality and Quantity Control components (Post-Construction Stormwater Management Practices) **(If No, skip questions 23 and 27-35)**

○ **Yes** ● **No**

23. Have the Water Quality and Quantity Control components of the SWPPP been developed in comformance with the current NYS Stormwater Management Design Manual ?

○ **Yes** ○ **No**

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ○ Professional Engineer (P.E.)
- ○ Soil and Water Conservation District (SWCD)
- ○ Registered Landscape Architect (R.L.A)
- ○ Certified Professional in Erosion and Sediment Control (CPESC)
- ● Owner/Operator
- ○ Other

contractor

SWPPP Preparer

Vincent Alison

Contact Name (Last, Space, First)

Alison Vincent

Mailing Address

64 Giegerich av

City

Staten Island

State

ny

Zip

10307-

Phone

718-356-6921

Fax

718-356-4035

Email

dcaconstltd@verizon.net

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-10-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name

Vincent

MI

Last Name

Alison

Signature

Vincent Alison

Date

02/26/2012

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ○ Stabilized Construction Entrance
- ○ Storm Drain Inlet Protection
- ● Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ○ Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Site is paved with millings, and will be re-paved upon completion

Water Quality and Quantity Control

Important: Completion of Questions 27-35 is not required if response to Question 22 is No.

Post-Construction Stormwater Management Practices

27. Indicate **all** Stormwater Management Practice(s) that will be installed/constructed on this site:

Ponds
- ○ **Micropool Extended Detention (P-1)**
- ○ **Wet Pond (P-2)**
- ○ **Wet Extended Detention (P-3)**
- ○ **Multiple Pond System (P-4)**
- ○ **Pocket Pond (P-5)**

Filtering
- ○ **Surface Sand Filter (F-1)**
- ○ **Underground Sand Filter (F-2)**
- ○ **Perimeter Sand Filter (F-3)**
- ○ **Organic Filter (F-4)**
- ○ **Bioretention (F-5)**
- ○ **Other**

Alternative Practice
- ○ **Rain Garden**
- ○ **Cistern**
- ○ **Green Roof**
- ○ **Stormwater Planters**
- ○ **Permeable Paving (Modular Block)**

Wetlands
- ○ **Shallow Wetland (W-1)**
- ○ **Extended Detention Wetland (W-2)**
- ○ **Pond/Wetland System (W-3)**
- ○ **Pocket Wetland (W-4)**

Infiltration
- ○ **Infiltration Trench (I-1)**
- ○ **Infiltration Basin (I-2)**
- ○ **Dry Well (I-3)**
- ○ **Underground Infiltration System**

Open Channels
- ○ **Dry Swale (O-1)**
- ○ **Wet Swale (O-2)**

Verified Proprietary Practice
- ○ **Hydrodynamic**
- ○ **Wet Vault**
- ○ **Media Filter**

28. Describe other stormwater management practices not listed above or explain any deviations from the technical standards.

29. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

30. Provide the total water quality volume required and the total provided for the site.

WQv Required ___.___ **acre-feet**

WQv Provided ___.___ **acre-feet**

31. Provide the following Unified Stormwater Sizing Criteria for the site.

Total Channel Protection Storage Volume (CPv) - Extended detention of post-developed 1 year, 24 hour storm event

CPv Required ___.___ **acre-feet**

CPv Provided ___.___ **acre-feet**

31a. The need to provide for channel protection has been waived because:

○ **Site discharges directly to fourth order stream or larger**

Total Overbank Flood Control Criteria (Qp) - Peak discharge rate for the 10 year storm

Pre-Development ___.___ **CFS**

Post-development ___.___ **CFS**

Total Extreme Flood Control Criteria (Qf) - Peak discharge rate for the 100 year storm

Pre-Development ___.___ **CFS**

Post-development ___.___ **CFS**

31b. The need to provide for flood control has been waived because:

○ **Site discharges directly to fourth order stream or larger**

○ **Downstream analysis reveals that flood control is not required**

IMPORTANT: For questions 31 and 32, impervious area should be calculated considering the project site and all offsite areas that drain to the post-construction stormwater management practice(s). (Total Drainage Area = Project Site + Offsite areas)

32. Pre-Construction Impervious Area - As a percent of the Total Drainage Area enter the percentage of the existing impervious areas before construction begins. ___ %

33. Post-Construction Impervious Area - As a percent of the Total Drainage Area, enter the percentage of the future impervious areas that will be created/remain on the site after completion of construction. ___ %

34. Indicate the total number of post-construction stormwater management practices to be installed/constructed. ___

35. Provide the total number of stormwater discharge points from the site. (include discharges to either surface waters or to separate storm sewer systems) ___

36. Identify other DEC permits that are required for this project.

DEC Permits

○ Air Pollution Control	○ Navigable Waters Protection / Article 15
○ Coastal Erosion	○ Water Quality Certificate
○ Hazardous Waste	○ Dam Safety
○ Long Island Wells	○ Water Supply
○ Mined Land Reclamation	○ Freshwater Wetlands/Article 24
○ Other SPDES	○ Tidal Wetlands
○ Solid Waste	○ Wild, Scenic and Recreational Rivers
● None	○ Stream Bed or Bank Protection / Article 15

○ Other

37. Does this project require a US Army Corps of Engineers Wetland Permit? ○ Yes ● No
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

38. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ Yes ● No
(If No, skip question 39)

39. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ Yes ○ No

40. If this NOI is being submitted for the purpose of continuing coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. NYR[ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name Marshah-Reaff **MI**

Print Last Name Barrett

Owner/Operator Signature D. Barrett

Date 06/26/2012

Attachment

DCA Site Specific
Health and Safety Plan