

**APPENDIX K**  
**MATERIALS MANAGEMENT PLAN**

# Materials Management Plan

## Excavation & Capping of the Filled First Street Turning Basin, Gowanus Canal

**Borough of Brooklyn, New York**

**Project ID: PW77GOWAN**

**Contract No. HWDRCW02**

**Prepared for:**



**Submitted by:**



The AKRF-KSE JV

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## FIGURE

Figure 1: Site Plan

### LIST OF ACRONYMS

Acronym	Definition
AKRF-KSE JV	AKRF Engineering, P.C./KS Engineers, P.C. Joint Venture
C&D	Construction and Demolition
CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
CY	cubic yards
DER	Division of Environmental Remediation
DVCP	Dust and Vapor Control Plan
E&SC	Erosion and Sediment Control
ELAP	Environmental Laboratory Accreditation Program
EPA	United States Environmental Protection Agency
EQ	Equalization
GAC	granular activated carbon
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations Emergency and Response
ISS	In-situ Stabilization/Solidification
LPGAC	liquid phase granular activated carbon
mg/kg	milligrams per kilogram
mm	millimeter
MMP	Materials Management Plan
NAPL	non-aqueous phase liquid
NAVD88	North American Vertical Datum of 1988
NYC	New York City
NYCDCA	New York City Department of Consumer Affairs
NYCDDC	New York City Department of Design and Construction
NYCDEP	New York City Department of Environmental Protection
NYCDOT	New York City Department of Transportation
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OSHA	Occupational Safety and Health Administration
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	polychlorinated biphenyls

<b>Acronym</b>	<b>Definition</b>
PID	photoionization detector
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRUSCO	Restricted Residential Use Soil Cleanup Objectives
SCOs	Soil Cleanup Objectives
SVOCs	Semi-Volatile Organic Compounds
SWTP	Solid Waste Transporter Permitted
TCLP	toxicity characteristic leaching procedure
TSCA	Toxic Substances Control Act
USDOT	United States Department of Transportation
VOCs	Volatile Organic Compounds

## 1.0 INTRODUCTION

This Materials Management Plan (MMP) was prepared by AKRF Engineering, P.C./KS Engineers, P.C. Joint Venture (AKRF-KSE JV), on behalf of the New York City Department of Design and Construction (NYCDDC), for the excavation and capping of the Filled First Street Turning Basin, Gowanus Canal, Borough of Brooklyn, New York (Site). A Site Plan is provided as Figure 1. Details related to the removal activities are presented in the 100% Design Report, to which this MMP is included as an appendix and as a supporting plan.

The Site is a portion of the Gowanus Canal (Canal) Superfund Site. The former First Street Turning Basin was originally utilized, among other purposes, to deliver coal via barges to the adjacent electric generating station (the Powerhouse, Block 967, Lot 1). It was originally built to provide power to the former Brooklyn Rapid Transit Authority subway system, which was later incorporated into New York City's (NYC's) Transit system in 1940.

This MMP is provided as an appendix to the 100% Design Report for the Site and to be used by the Contractor as a guide in the performance of their remedial work at the former First Street Turning Basin. This MMP provides an overview of the potential waste streams categories to be generated during the implementation of the remedial project and governs the handling, storage, transport and disposal of these waste streams, and the treatment requirements for any contaminated dewatering fluids (if any).

The Contractor must prepare their own MMP for the remedial work required within the Site for the waste streams described herein. The Contractor's MMP will describe the specific means, methods, and control measures anticipated for implementation in order to achieve the performance standards set forth in this document. The MMP will be submitted to the Responsible Parties and the Engineer for acceptance.

### 1.1 Plan Organization

This MMP is organized into nine sections, as follows:

**Section 1 – Introduction:** provides an introduction and the plan's organization, purpose, and applicable regulatory framework.

**Section 2 – Characterization and Management of Waste/Material:** describes the categories of the excavated soils and debris, the requirements for the Contractor to develop sufficient waste characterization analytical testing data, and the requirements for the Contractor during material management, handling and transport.

**Section 3 – Waste Destinations:** describes the Contractor's responsibilities to identify commercial disposal facilities and relevant information on each disposal facility for review.

**Section 4 – Transportation:** describes the requirements to develop a barge transportation program that includes the means and methods for mooring, where the delivery of materials will occur, and routes of transport.

**Section 5 – Loading Procedures:** describes the on-site transport and loading of excavated soils and debris onto barges.

**Section 6 – Recordkeeping:** presents the approach for recordkeeping and tracking of waste transport and disposal activities.

**Section 7 – Health and Safety:** provides an overview of the health and safety plans applicable to the soil management, loading, transportation and disposal process.

**Section 8 – Contingency Measures for Spills that Occur in Work Area:** describes contingency plans for spills that may occur during on-site handling and loading activities related to the transport.

**Section 9 – References:** lists references for documents cited in this plan.

## **1.2 Regulatory Framework**

The selected remedy for the overall Gowanus Canal Superfund Site was described in the Record of Decision (ROD) issued by the United States Environmental Protection Agency (EPA) on September 27, 2013 under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The selected remedy for this Superfund site under the ROD specifically addressed sediment containing elevated concentrations of polycyclic aromatic hydrocarbons (PAHs) and non-aqueous phase liquids (NAPLs) (EPA, 2013). Components of the selected remedy included the dredging of accumulated (soft) sediment, in-situ stabilization/solidification (ISS) of native sediment with upward mobile NAPL, and capping over ISS-treated and native sediments to prevent both NAPL and dissolved contaminants from further migration into the Canal. The ROD also included the same components inclusive of excavation and restoration of the First Street Turning Basin.

The laws and regulations pertinent to transportation and disposal activities include:

- The federal Resource Conservation and Recovery Act (RCRA) and EPA's implementing regulations (40 Code of Federal Regulations [CFR] Parts 260-270), which regulate material that constitutes "hazardous waste"; and
- The federal Toxic Substances Control Act (TSCA) and EPA's implementing regulations (40 CFR Part 761), if necessary, which generally govern materials with polychlorinated biphenyl (PCB) concentrations at or above 50 parts per million (ppm).

Implementation of the regulatory program of RCRA has been delegated by EPA to the New York State Department of Environmental Conservation (NYSDEC). Specific governing codes and standards for soil management, transportation, and disposal are addressed in the following regulations:

### New York Codes, Rules and Regulations (NYCRR):

- 6 NYCRR Part 360, Solid Waste Management Facilities;
- 6 NYCRR Part 361, Material Recovery Facilities, Subpart 361-5 Construction and Demolition Debris Handling and Recovery Facilities;
- 6 NYCRR Part 364, Waste Transporter Permits;
- 6 NYCRR Part 370, Hazardous Waste Management System - General;
- 6 NYCRR Part 371, Identification and Listing of Hazardous Wastes;
- 6 NYCRR Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities; and
- 6 NYCRR Part 373, Hazardous Waste Management Facilities.

### United States Department of Transportation (USDOT):

- 49 CFR 172, Subpart C - Shipping Papers;
- 49 CFR 172, Subpart D - Marking;
- 49 CFR 172, Subpart E - Labeling;
- 49 CFR 172, Subpart F - Placarding;
- 49 CFR 172, Subpart G - Emergency Response Information;
- 49 CFR 173, General Requirements for Shipments and Packagings; and
- 49 CFR 177, Carriage by Public Highway.

EPA:

- 40 CFR Part 261, Identification and Listing of Hazardous Waste;
- 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; and
- 40 CFR Part 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

In addition, applicable New York City Department of Environmental Protection (NYCDEP) and NYC Department of Transportation (NYCDOT) regulations apply.



## 2.0 CHARACTERIZATION AND MANAGEMENT OF WASTE/MATERIAL

### 2.1 Background

An environmental investigation within the footprint of the proposed restoration of the First Turning Basin was completed in July 2017. Unsaturated soil quality was noted to be impacted by PCBs, volatile organic compounds (VOCs), naphthalene, semi-volatile organic compounds (SVOCs) and metals (arsenic, barium, cadmium, copper, lead, mercury, and nickel) above the NYSDEC restricted Commercial Use Soil Cleanup Objectives. Soil sampling did not identify any concentrations of Toxicity Characteristics Leaching Program (TCLP) constituents that would result in the materials sampled being characterized as hazardous waste. However, total lead was detected in numerous locations between 1,100 and 4,200 milligrams per kilograms (mg/kg) and it should be noted that additional TCLP testing could reveal the presence of hazardous levels of lead.

NAPL accumulations (ranging from 1.1 to 1.53 feet in thickness) were detected in four (4) soil borings within the First Turning Basin at elevations from -2 to -16 feet [North American Vertical Datum of 1988 (NAVD88)] situated at the interface, between coarse sands and underlying silty clays. Groundwater quality within the First Turning Basin was reported to contain elevated concentrations of chlorides, nitrates, various metals, in both their total and dissolved forms, Aroclor 1242, Aroclor 1254, and total PCBs and various VOCs and SVOCs above the NYSDEC Ambient Water Quality Standards and Guidance Values. Groundwater concentrations were also reported elevated above the New York City Department of Environmental Protection (NYCDEP) Limitations for Effluent to Sanitary or Combined Sewers (NYCDEP 2009) for naphthalene, ethylbenzene, toluene and for total xylenes at select shallow and deep monitoring wells.

### 2.2 Waste Stream Categories

Analytical testing is required to be performed by the Contractor to enable the characterization of the construction spoils to be generated as either 1) hazardous; 2) non-hazardous contaminated; or 3) non-regulated Solid Waste and to determine the specific requirements for handling, transport and disposal. Additionally, this same information will be used to ensure appropriate and adequate worker protection and protection of the surrounding community. The three (3) major categories of waste solids to be generated will fall into the following definitions:

**Hazardous:** Material should be considered a characteristic hazardous waste when it exhibits any of the following: ignitability, corrosivity, reactivity, or toxicity for VOCs, SVOCs, metals, pesticides, or herbicides, as defined in 6 NYCRR Part 371 or 40 CFR Section 261 [including analysis using the Toxicity Characteristic Leaching Procedure (TCLP)]. Under New York State (NYS) regulations, a material that contains greater than 50 ppm of PCBs is considered a hazardous waste. EPA considers greater than 50 ppm of PCB to be a PCB-contaminated waste under TSCA. All hazardous waste should be considered unsuitable and should be disposed of at an approved permitted hazardous waste landfill.

**Non-hazardous Contaminated:** This material will be considered to be non-hazardous contaminated soil due to one or more of the following characteristics:

1. Elevated photoionization detector (PID) readings subsequently confirmed by lab analysis (i.e., VOCs) identified in analytical test results above the applicable 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs);
2. Visual evidence of contamination (i.e., staining or discoloration);
3. Petroleum and/or chemical odors;

4. Soil that has been documented as contaminated by prior historic environmental reports and/or in-situ characterization data with exceedances of applicable 6 NYCRR Part 375 SCOs; and
5. Material that has been characterized and is below the applicable EPA hazardous waste thresholds for Toxicity Characteristic Leaching Procedure (TCLP), ignitability, corrosivity, and reactivity, and contains PCBs under EPA TSCA levels.

**Non-regulated Solid Waste:** Uncontaminated soil which has been excavated as part of the construction project and analytical testing of this material is compliant with the applicable SCOs as set forth in Table 375-6.8(b) of 6 NYCRR Part 375 or the material is deemed to be uncontaminated solid waste (debris such as concrete, rebar, etc.). In accordance with 6 NYCRR Part 360, if uncontaminated solid waste is removed from the Site to a construction and demolition (C&D) debris processing facility, measures must be taken to prevent inadvertent acceptance of historic fill or other unauthorized waste which can render otherwise acceptable material (i.e., concrete, brick, rocks) unsuitable for recycling or beneficial reuse.

### **2.3 Potential Waste Streams**

The majority of the materials (waste solids) to be generated during this remedial project will be construction-related spoils including fill (consisting of construction debris, concrete, rebar, and brick) and sand with varying proportions of silt and clay. This material will consist of unsaturated solids, saturated soils from excavation and some associated debris. Water will be generated during the decanting of the saturated soils. In addition, the wastewater treatment system will need to address the possibility of encountering NAPL in the fluids generated from the excavated soils.

Additional debris that has historically been found in the main Canal has included glass, metal plastic, rubber, concrete, brick, rock, timber, tires, drums, and to a lesser extent, paper and cardboard. Debris is defined as solid material exceeding a 60 millimeter (mm) particle size that is intended for disposal and that is: a manufactured object; plant or animal matter; or natural geologic material. Large assorted debris that may be present can include vehicles, pilings, concrete, rocks, tires, sunken vessels, and other assorted debris greater than approximately 5 feet in any dimension. This debris by itself is not a listed or characteristic hazardous waste. However, if the debris is in contact with sediment that is classified as hazardous waste, then the debris may be also classified in a similar manner. Hazardous debris is defined as debris that contains a hazardous waste listed in Subpart D of Part 261, or that exhibits a characteristic of hazardous waste identified in Subpart C of Part 261. The Contractor must include methods for debris management in their MMP that will include screening, separation and the potential for specialized handling.

Although the excavation for this project will be conducted “in the wet,” materials management will also include the handling of contaminated groundwater drained from the soils, following excavation.

### **2.4 Waste Characterization and Testing**

Waste Characterization to be performed by the Contractor includes the sampling and laboratory assessment of the solid waste generated, the review of the analytical data, and the characterization of material as described above. All analytical testing data must be performed by a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) certified laboratory. The waste characterization information will be used by the Contractor to identify and propose acceptable off-site waste disposal facilities based upon a comparison of the analytical testing data and the proposed waste disposal facility permits.

Although excavation for the project will be conducted “in the wet,” materials management will also include the management and treatment of water drained from the soils following excavation, and the separation of any NAPL impacts from the water, before returning the treated water to the open

excavation. It is likely that some of the contaminated groundwater draining from the staged soil will be impacted with light and/or dense NAPL. This contaminated groundwater will be required to be conveyed through the on-site wastewater treatment system before being returned to the open excavation. Any separated NAPL also must be characterized by the Contractor for appropriate off-site transport and disposal in accordance with Federal, State, and local regulations. The analytical testing requirements for the NAPL are to be identified in the Contractor's MMP, in accordance with the permit requirements of their proposed waste disposal facility.

As historic testing of soil has been conducted, this data can be used by the Contractor in the preliminary identification of potentially acceptable waste disposal facilities. Additional waste handling and disposal considerations include the limited area for both site access and laydown (450 Carroll Street) and the need to use barges for the export of excavated materials. Due to the limited available laydown area and Site access constraints, the Contractor may elect to perform an in-situ (pre-excavation) waste characterization program via the installation of soil borings, to allow for excavation and live-loading into transport barges. Live loading of unsaturated soils in particular should offer significant advantages. Ex-situ (stockpile) waste characterization can also be utilized but is severely limited due to Site layout restrictions.

The Contractor should provide waste characterization sampling and analysis requirements in their MMP for the review and approval of the Engineer. Analytical testing to be performed for all waste streams must include, at a minimum, complete 6 NYCRR NYSDEC Part 375 constituents, and hazardous waste determination (Full TCLP and Ignitibility, Reactivity and Corrosivity) to enable a determination of non-regulated under NYSDEC Part 375, non-hazardous regulated and/or hazardous. In order to provide sufficient waste characterization data, sampling frequency is set at a minimum of one (1) composite sample generated per each 500 cubic yards of construction waste spoils. The Contractor should also pre-identify any additional waste characterization testing or modified sampling frequencies required by their proposed waste disposal facility, in accordance with its applicable permits.

In addition, to preclude the possibility of disposing of materials containing free liquid, the dewatered soil will be monitored by the Engineer prior to transport to confirm that the material passes the Paint Filter Liquids Test, per EPA Method 9095 of "Test Methods for Evaluating Solid Waste" – Publication SW-846. All dewatered soil will be monitored via observation and/or testing by the Engineer to assure absence of free liquid before transport to the disposal facility. Occasionally, the material may need to be stabilized with a sorbent in order to load and transport the material or to pass the paint filter test. The mass of sorbent used and the material into which the stabilized material is placed will be recorded. If waste is observed to contain free liquids due to separation of liquid during shipping, the receiving waste disposal facility will remix or stabilize the material to remove free-liquid content.

Debris management will include screening, separation and separate handling, if necessary. Any easily recoverable recyclable material (steel, large rock) can be segregated, prepared if necessary (washed) and shipped to an approved recycling facility. Additionally, based upon historical work in the area, glass, metal, plastic, rubber, concrete, brick, and rock/rip-rap debris will likely be acceptable for recycling or disposal in a Subtitle D disposal facility.

## **2.5 Material Management**

During waste characterization and excavation, the excavated materials are also to be field screened for evidence of contamination (e.g., visually, with a PID and for odor). Depending on the screening/sampling results, contaminated spoils may be further segregated, based upon the waste characterization data, physical condition (saturated) and field screening. Due to the nature of the material, the Contractor's MMP and formal approval request must include provisions for any

amendment of materials to be transported and the location where the mixing may occur (e.g., in-barge mixing). Upon the completion of facility waste profiling, and receipt of formal approval from the proposed waste disposal facility, the Contractor should provide a detailed submittal for review and approval by the Responsible Parties and the Engineer.

Unanticipated buried structures and demolition debris may be encountered within the excavation area. If encountered, the Contractor should process (cut or break) the structures/debris into lengths or pieces suitable for potential off-site disposition. If the C&D debris is not visually impacted, such debris may be disposed of at a licensed C&D disposal facility. If the C&D is contaminated (e.g., creosote-soaked wood), it should be segregated from clean materials and disposed by the Contractor as a regulated waste at a suitable disposal facility.

### **2.5.1 Unsaturated Material Management**

If an in-situ characterization method is employed, and acceptance for transportation and disposal is received from the Responsible Parties, the Engineer and the disposal facility, the material can be live-loaded into barges. This approach has significant advantages and can be implemented for all unsaturated soils within the excavation footprint prior to removal of saturated soils.

If ex-situ sampling and staging methods are employed, the Contractor must provide a Stockpiling Management Plan in their MMP. The Contractor's stockpiling procedures must adhere to the following minimum requirements:

- All excavated and stockpiled soils should be segregated according to category of waste stream confirmed to be present.
- Stockpiled materials must be maintained on a minimum of 20-mil thick impermeable polyethylene sheeting or equivalent and covered with 10-mil polyethylene sheeting. Soil should be segregated and stockpiled separately from concrete and other debris. Polyethylene sheeting covering the stockpiles should be anchored firmly in place.
- The Contractor should slope stockpile areas and provide collection points/sumps to collect any rainwater that has drained off the stockpiled soils. Drained water should be removed from the sump, as required, and handled in accordance with the same procedures developed for the treatment of contaminated groundwater.

### **2.5.2 Dewatered Material Management and Staging**

Following completion of the excavation and loading of unsaturated soils, the dredging and management of saturated soils will be implemented. All saturated soils will be directly loaded into barges that will be moored adjacent to the Site at a location to be determined by the Contractor in consultation with the Responsible Parties and the Engineer. Soils will be decanted on the barges and the water will be conveyed to the on-site wastewater treatment facility. The Contractor will process the soils on-site via in-barge mixing and will develop amending means and methods to achieve adequate stabilization/dewatering. The Contractor will develop plans for the delivery and storage of the amending agent(s) and methods to ensure that dust is not generated during application of the amendment.

Each batch of material will consist of 500 to 1,000 cubic yards (CY) and will be analyzed to ensure it passes the Paint Filter Test (EPA Method 9095B) and is suitable for being transported safely off-site. In addition to paint filter testing, each batch of processed soil will be sampled and analyzed on a bulk chemistry basis to assist in determining its ultimate end-use destination. The Contractor will develop a hierarchy for end use of the material to determine the most cost-effective means of final disposition of the materials.

### **2.5.3 Materials Associated with Fluids Management/Treatment/Disposal**

The Contractor will develop procedures for handling and disposal of materials associated with waste generated during treatment of dredge water, as follows:

- Large grained soils, sands and silts from the equalization (EQ) tank can be returned to the dredge spoil barge and handled the same as dredge spoils.
- Silts and fines from the settling tank can be returned to dredge spoil barge and handled the same as dredge spoils.
- NAPL with some silty material from the oil/water separator can be vacuumed from the storage tank and disposed by a licensed waste hauler.
- A sludge mix from the clarifier containing metals, silts and colloidal particles—including large amount of iron, other cation metals, and possibly heavy metals—can be disposed by a licensed waste hauler. The sludge mix should be sampled for waste characterization parameters to determine if it is a non-hazardous or hazardous waste. Non-hazardous materials can be placed in the dredge spoil barge and handled the same as dredge spoils.
- Spent bag filters impacted with iron and particulates can be disposed by a licensed waste hauler.
- Granular activated carbon (GAC) Vessels: Spent liquid phase granular activated carbon (LPGAC) will be impacted with hydrocarbons, chlorinated solvents, and some metals. Spent GAC can be characterized and vacuumed from vessels and disposed by a licensed waste hauler.
- Decontamination water, equipment washdown waters, and stormwater contained in secondary containment spill berms can be contained and returned to the head of the wastewater treatment plant at the EQ Storage Tank.
- Treated effluent water will meet the Water Quality Requirements for Permit Equivalency presented in Table 44 08 40-2 of the Technical Specifications appended to the 65% Remedial Design Report for RTA 1 (Geosyntec, 2017). These limits are modified or further defined based on the Additional Conditions and Footnotes for Table 44 08 40-2 that are included in the Technical Specifications (Appendix F).

### **2.6 Agency Coordination and Oversight**

The Responsible Parties have the final authority on all aspects of the remedial construction activities. The Responsible Parties will assign an Engineer to be responsible for verifying that the Contractor completes the remedial construction activities in accordance with the Final Design and associated specifications.

The Engineer will communicate with the designated EPA representative to facilitate their review of materials management operations.

The Responsible Parties or the Engineer (on behalf of the Responsible Parties) will obtain an EPA Identification Number for the Site prior to shipment of any hazardous waste during the remedial activities.

### **2.7 Material to be Imported As Clean Fill**

Some quantity of clean fill will be required to be imported to the Site. This will include materials to build the intertidal vegetative shelf and restore the top soil cap, as well as materials required for other grading and restoration activities. All material required to be imported to the Site must adhere to the NYSDEC Division of Environmental Remediation (DER)-10 May 3, 2010, *Technical*

*Guidance for Site Investigation and Remediation Table 5.4(e) 10 Recommended Number of Soil Samples for Soil Imported To or Exported From a Site* and other relevant *NYSDEC DER-10* requirements. Unless virgin approved material is proposed for use by the Contractor, analytical testing of the proposed clean fill material must meet the 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs). The Contractor's MMP must provide details on the importation of clean fill, such as source, location, analytical and geotechnical laboratory tests (where applicable).

### **3.0 WASTE DISPOSAL FACILITIES**

The Engineer should ensure that the Contractor's operations associated with the loading, transportation, and disposal of excess construction materials from the Site are in compliance with all applicable Federal, State, and local statutes and regulations.

The Engineer should review primary and backup proposed Treatment Storage or Disposal facilities for each category of waste streams identified herein and in the Contractor's MMP. Relevant information on each waste disposal facility is required to be provided for review and should include the following minimum information:

- Facility name and the State identification number.
- Facility location.
- Name of responsible contact for the facility and telephone number.
- Types of waste that can be accepted and treatment/landfill options.
- Signed letter of agreement to accept waste (if it can be generated with the existing historic data).
- Permits, licenses, letters of approval, and other authorizations to operate, which are currently held and valid for the proposed facility.
- The date of the proposed facility's last compliance inspection, as requested by the Engineer.
- A list of all active (unresolved) compliance orders (or agreements), enforcement notices, or notices of violations issued to the proposed facility. The source and nature of the cause of violation will be stated, if known.
- Certificate of Insurance.
- Example of Weight Ticket and Manifest forms.
- Description of all sampling and field/laboratory analyses that will be needed to obtain disposal facility approval.

## **4.0 TRANSPORTATION**

### **4.1 On-Road Transportation**

In the event that on-road off-site waste disposal transportation is used, the Contractor should provide a list of valid NYSDEC Solid Waste Transporter Permitted (SWTP), and/or NYSDEC Part 364 permitted transportation entities to transport the various waste streams, as part of their MMP. These transportation entities must demonstrate that they are permitted to enter and bring the permitted solid waste to each of the identified waste disposal facilities to be used for this project. The Contractor should investigate the conditions of public thoroughfares and roads as to availability, clearances, loads, limits, restrictions, and other limitations affecting transportation to, ingress, and egress of the Site. The Contractor should conform to all Federal, State, and local regulations in regard to the transportation of materials to, from, and at the Site and should secure in advance any such permits that may be required. A truck-transportation route map from the Site to the nearest major commercial roadway leading to the off-site disposal facility(ies) must be provided in the Contractor's MMP.

### **4.2 Barge Transportation**

As barges will be the primary means of waste transportation for use in this project, the Contractor should provide a barge transportation program that includes, but is not limited to, information on where the delivery of materials for mixing or amendments will occur for saturated construction spoils, mooring means and methods, routes of transport, on and off-loading requirements, and barge traffic limitations.

The Contractor should directly transport and deliver material only from the Site to the previously approved disposal facilities, with no mixing of waste from other properties. Any transporter of contaminated/hazardous soils materials should be licensed in the state in which handling and transportation will take place, and all other states traversed in accordance with all applicable regulations.

The Contractor should be responsible for appropriate and accurate measurement of unit quantity of material removed from the Site (projected yardage and scale-measured tons). The Contractor should coordinate barge inspection and recording of quantities leaving the Site with the Responsible Parties and the Engineer. These quantities should be compared to recorded quantities received at the disposal facilities. A copy of each manifest or waste loading ticket for each barge or container must be provided and a daily log must be maintained listing the type, quantity, and weight of all material that leaves the Site or is accepted to the Site. A final executed copy of the waste manifest or loading ticket must be provided to the Responsible Parties and the Engineer upon receipt of waste at the facility.



## **5.0 LOADING PROCEDURES**

### **5.1 Heavy Equipment**

The Contractor should provide all heavy equipment to the Site free of contamination. The Contractor should inspect all transport vehicles and equipment, prior to entry and prior to leaving the Site, to ensure that no material adheres to the wheels, undercarriage, tailgates, covers, or other areas. The Contractor should provide equipment/materials for vehicle wheel cleaning to prevent tracking of soil, dirt, etc., onto public streets; with the construction and maintenance of an engineered truck and equipment wash area for pressure washing and/or steam spraying of trucks prior to leaving the Site and heavy equipment (excavators, backhoes, etc.) between working in contaminated and clean areas and before leaving the Site.

### **5.2 Interim Stockpiles**

Any areas proposed for interim use to load, or temporarily stockpile, soils and/or clean construction materials should be graded (if required) by the Contractor to provide positive drainage away from the intended stockpile locations. All large stones, roots, debris and other large objects that may potentially puncture polyethylene (plastic layer) ground protection must also be removed. The ground surface where soil will be stockpiled is to be covered with a minimum of 0.50-millimeter (20-mil) polyethylene sheeting, or an equivalent material, and covered with 0.25-millimeter (10-mil) polyethylene sheeting. Stockpile covers, site grading, signing and security measures will be properly maintained by the Contractor for the duration of required soil storage. Damaged covers and other stockpile protections used will be repaired or replaced by the Contractor in an expedited manner.

### **5.3 Dust Odor and Vapor Control**

VOCs and particulates will be monitored continuously by the Environmental Monitor under the oversight of the Engineer during potential vapor- and dust-generating remedial construction activities. The project-specific Community Air Monitoring Plan (CAMP), included as Appendix G to the 100% Design Report, includes details pertaining to air monitoring and required corrective actions. A Dust and Vapor Control Plan (DVCP) will be prepared by the Contractor to ensure that mitigation measures are implemented during remedial construction activities (i.e., excavation, in-barge mixing, etc.). The DVCP will outline measures to be implemented for air emissions control and fugitive dust suppression to limit the potential for organic vapor, dust, and odor emissions at the Site. Such control measures will include, but not be limited to:

- Applying a water spray to suppress dust originating from excavation and in-barge mixing;
- Applying a foam or Biosolve® spray that uses encapsulation and chemical masking to suppress vapors/odors originating from the excavation, excavator bucket, or staging areas;
- Minimizing the number and size of excavation areas open at one time; and
- Covering the excavation and materials in the staging area(s) using ultraviolet resistant polyethylene sheeting.

These vapor, dust, and odor control measures will be mobilized to the Site by the Contractor at the beginning of the project and will be maintained on-site in sufficient supply throughout the work.

### **5.4 Barge Loading**

The treatment and transport of excavated material is anticipated to be performed using water tight barges. Excavation buckets will initially be allowed to dewater over the active remediation area within the turbidity curtain before depositing excavated material in the water tight barge. If the

loading barge is located outside the turbidity curtailed area, a drip pad and ramp will be installed along the swing path of the excavator bucket such that any material/water lost from the excavator bucket will be controlled and redirected back to the active excavation area. Excess water from the scows will be collected and treated on-site prior to discharge to the active remediation area or stored for later transport to an approved publicly owned treatment works.

As necessary, the sediments will be further stabilized in the scows with excavator buckets which will mix the dewatered sediments with other Site materials or Portland cement, to facilitate transport for further treatment at an off-site location or for final disposal.

## **6.0 RECORD KEEPING**

### **6.1 Pre-Shipment Notifications**

For each proposed waste disposal facility, the Contractor should submit the following as part of their record keeping package to the Responsible Parties and the Engineer:

- Name, address, and location of the facility, including owner's name, address, telephone, and fax number and the contact person at the facility.
- The EPA Disposal Facility Identification Number (if hazardous), insurance certification, and expiration date of all permits.
- Total acreage and total daily capacity of facility permitted to specifically accept the materials to be generated from the Site.
- The EPA region, State regulatory agency, and the local regulatory agency for which permits are required.
- Copies of valid, existing operating permits for the facility from the applicable regulatory agencies.
- Copies of currently valid permits from all applicable regulatory agencies to specifically accept the material. Such permits should indicate that they are presently in effect. Permits should state the maximum capacity of the landfill to accept the materials.
- A notarized commitment letter from the facility owner/representative, indicating receipt of representative/complete waste characterization data from the Contractor granting permission to bring material to the facility throughout the life of the Contract and adherence to the facility permit conditions. Commitment letters must be supplied on the facility's letterhead, and include the Site as the originating site, the specific analytical data provided to and reviewed by the facility, a statement that the facility is in compliance with its permit, any restrictions on delivery schedules or other conditions that may cause rejection of transported materials, and the accepted daily quantities of soil that may be disposed.
- A listing of the number and types of analytical tests required for initial determinations of the material for the facility. Also to be included are the testing requirements and frequency of testing of the material once the initial characterization has been made.
- Submit copies of all licenses and permits during the life of the Contract that apply to transportation, including but not limited to NYSDEC Part 364 permits, NYC and New York State Department of Transportation (NYSDOT) permits, and New York City Department of Consumer Affairs (NYCDCA) permits. For all other States traversed by the transport vehicles, the Contractor should obtain and submit all necessary vehicle and hauling permits.

### **6.2 Waste Manifesting Procedures**

Transportation of the material will be conducted over barges as well as some public highways. The Contractor should ensure that all barges, and trucks (if any), will be manifested appropriately to ensure compliance with the New Jersey State and NYC/NYS DOT highway, waterway regulations, and any state the material may be transported in. The following information is to be included on the manifesting of materials:

- Date;
- Site of Origin;

- Type of material;
- Disposal location;
- Transporter Name and Truck Identification;
- Grid/Cell location of the contaminated material/soil;
- Truck Weight information;
- Signature of the Engineer as the Generator of the waste and as the designated Agent for the Responsible Parties; and
- Disposal Facility Signature.

### **6.3 Records Management and Retention**

The Contractor will provide the Responsible Parties and the Engineer with copies of all receipts from the disposal/treatment facilities. Copies of each manifest will be submitted to the Engineer within four (4) business days following shipment and within three (3) business days after notification of receipt at the facility. For soil determined to be RCRA regulated hazardous waste, the Contractor will also provide the Responsible Parties and the Engineer with the appropriate copies of each signed manifest within seven (7) business days of receipt. Any manifest discrepancies, including the need for exception reporting, will be reported immediately to the Responsible Parties and the Engineer and will be resolved by the Contractor.

### **6.4 Required Reporting**

NYSDEC regulations include a requirement for the generator of any hazardous waste shipped off-site to submit an annual report on such shipments by March 1 of the following year (6 NYCRR § 372.2(c)(2)). To address this annual reporting requirement for the off-site hazardous waste shipments, the Engineer will prepare a report on behalf of the Responsible Parties covering the total quantity of hazardous waste (as defined under these regulations) transported and disposed, and will submit the report to NYSDEC, with a copy to EPA, by March 1 of the following year.

## **7.0 HEALTH AND SAFETY**

### **7.1 Site-Wide HASP**

A Site-Specific Environmental Health and Safety Plan (HASP) was prepared by AKRF-KSE JV, on behalf of NYCDDC, for the excavation and capping of the Filled First Street Turning Basin and is included as Appendix I of the 100% Design Report. It is provided for use by the Contractor in the development of their own Construction HASP (CHASP) during the implementation of the remediation work at the former First Street Turning Basin.

### **7.2 Contractor CHASP**

The Contractor's CHASP must meet the requirements specified in Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations Emergency and Response (HAZWOPER) program per 29 CFR 1910.120, and other applicable OSHA Construction and General Industry regulations. The Contractor's CHASP must be maintained on-site during all construction work and must address the health and safety hazards of each phase of Site operations, including the procedures and equipment required for worker protection.

The Contractor's CHASP must include safety program elements that are broadly applicable to the remediation construction project, as well as the specific potential hazards and safety measures that may arise during the specific construction activities required to complete the remedial design. The Contractor should prepare a Task Hazard Analysis for each task, prior to its execution, describing the specific hazards and safety measures appropriate for that task.

The Contractor's CHASP is intended for their workers as well as any subcontractors used by them during the implementation of the excavation and restoration project. Subcontractors should also be required to prepare their own Site-specific health and safety planning document and should use the Contractor's CHASP as a guide.

## **8.0 SPILLS PREVENTION MEASURES**

### **8.1 Stormwater Pollution Prevention**

The Contractor will implement erosion and sediment control (E&SC) practices for all construction activities where any excavation, staging, or loading activities are conducted. The required E&SC primarily consists of runoff control, stabilization, and then sediment control.

Prior to the start of the remedial activities, the Contractor should construct/install erosion and sediment control measures in general accordance with the Construction Drawings and the New York State Standards and Specifications for Erosion and Sediment control. The Engineer will document, through visual observations and inspection logs, that erosion and sediment control measures are constructed and being maintained by the Contractor, as required.

### **8.2 Spill Prevention and Control**

The Contractor will control potential sources of pollution at the Site that could arise from discharges from construction-related and construction support activities (e.g., equipment storage and staging areas, material storage areas, excavated material, and use of heavy machinery such as support vehicles, excavators, or dewatering equipment), NAPL containerization, contaminated groundwater from the temporary on-site treatment system, etc.

The Contractor will contain all regulated waste materials such as oil filters, petroleum products, paint, and equipment maintenance fluids in structurally sound and sealed shipping containers, within a regulated materials storage area. Regulated waste materials are to be stored in appropriate and clearly marked containers and segregated from other non-waste materials. The Contractor will provide for secondary containment for waste materials required to be disposed of in accordance with Federal, State, and local regulations. The Contractor's personnel and subcontractors will be instructed, during tailgate training sessions, on the proper procedures for regulated waste disposal. The Contractor's regulated hazardous waste material storage areas will be inspected weekly and after storm events and maintenance performed as deemed required. These storage areas are to be kept clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Material safety data sheets, material inventory, and emergency contact numbers are to be maintained in the Contractor's office trailer. The Contractor's trailers are to have a spill response kit. All spills will be cleaned up immediately upon discovery. Spills large enough to discharge to surface water will be reported to the National Response Center at 1-800-424-8802.

For the First Street Turning Basin, the Contractor is responsible for the installation, operation, and maintenance of any temporary on-site water containment or treatment system in support of the remedial construction activities. Where work practices may generate quantities of chemical waste, or where a significant risk of a chemical spill may be present, a specific waste management or spill containment and response plan will be developed by the Contractor.

## **9.0 REFERENCES**

EPA. 2013. Record of Decision for the Gowanus Canal Superfund Site. September 27.

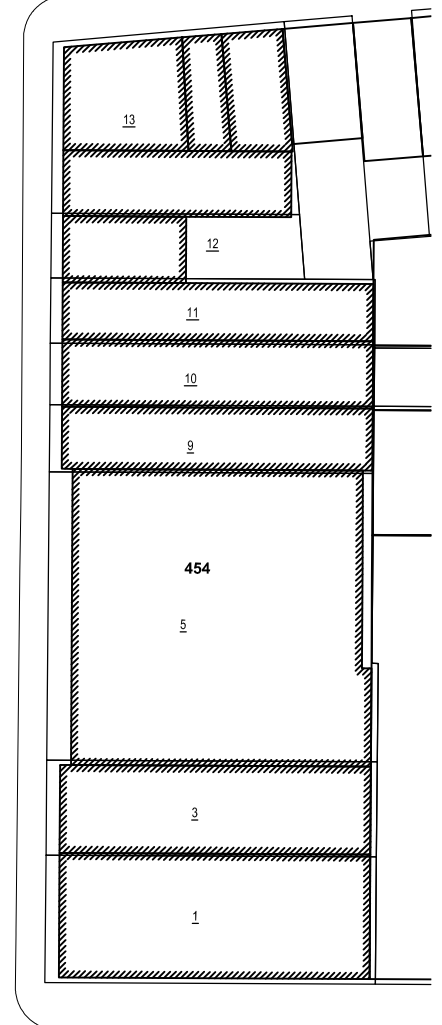
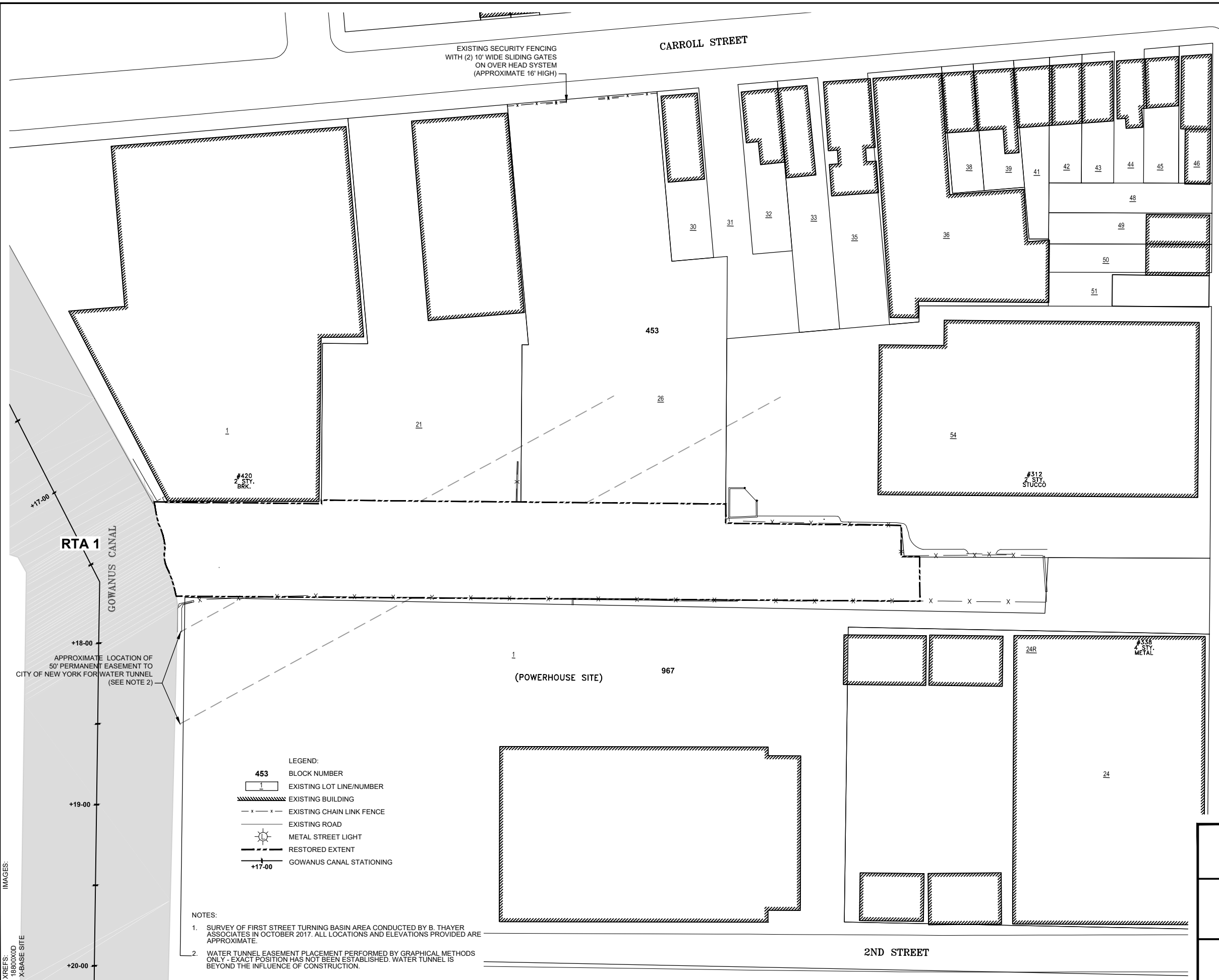
Geosyntec. 2017. Consultants and Beech and Bonaparte Engineering, 65% Remedial Design Report, Gowanus Canal Superfund Site. October.

NYCDEP. 2009. Limitation for Effluent to Sanitary or Combined Sewers, DEP WQ-D001/Wastewater Quality Control Application/Rev. 11/2009, Table A.

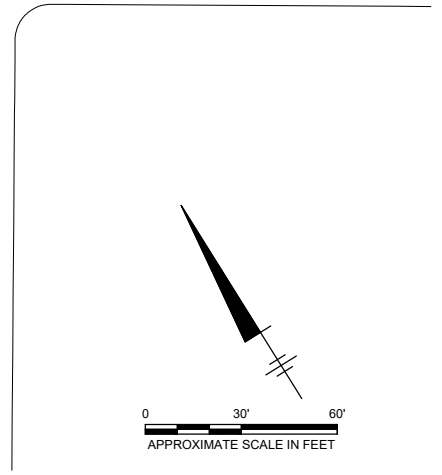
**FIGURE**



CITY OF BROOKLYN, NY - DIVISION OF PLANNING AND DESIGN - 12/13/2018 11:23 AM - PLOTTED: 12/13/2018 11:23 AM BY: SANCHEZ, ADRIAN  
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3RD AVENUE  
80'



FIRST STREET TURNING BASIN - GOWANUS CANAL  
BROOKLYN, NEW YORK

**SITE PLAN**

**AKRF KSE**  
The AKRF-KSE JV

FIGURE  
**1**