23-01 41ST AVENUE

QUEENS, NEW YORK

Remedial Action Work Plan

NYC OER Site Number: 15RHAZ357Q

NYC VCP Number 15CVCP133Q

Prepared for:

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C/D	Construction/Demolition
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
BCA	Brownfield Cleanup Agreement
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYC BCP	New York City Brownfield Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PE	Professional Engineer

PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CERTIFICATION

I, Andrew R. Levenbaum, am currently a registered professional engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for designing the remedial program for the 23-01 41st Avenue, Long Island City, New York site, site number 15CVCP133Q and OER Project Number 15EHAZ357Q. I certify to the following:

- I have reviewed this document and the Stipulation List, to which my signature and seal are affixed.
- Engineering Controls developed for this remedial action were designed by me or a person under my direct supervision and designed to achieve the goals established in this Remedial Action Work Plan for this site.
- The Engineering Controls to be constructed during this remedial action are accurately reflected in the text and drawings of the Remedial Action Work Plan and are of sufficient detail to enable proper construction.
- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

_____

Name

PE Stamp

_____

PE License Number

_____

Signature

_____

Date

I, Paul P. Stewart, am a qualified Environmental Professional. I will have primary direct responsibility for implementation of the remedial program for the 23-01 41st Avenue, Long Island City, New York site, site number 15CVCP133Q and OER Project Number 15EHAZ357Q. I certify to the following:

- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

_____

QEP Name

QEP Signature

Date

Certification by a Professional Engineer is required. Certification by a Qualified Environmental Professional (QEP) is optional unless the PE and QEP work for separate firms.

EXECUTIVE SUMMARY

Queens Bridgeview Tower LLC has enrolled in the New York City Voluntary Brownfield Cleanup Program (NYC VCP) to investigate and remediate an 8,519-square foot site located at 23-01 41st Avenue in Queens, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms with applicable laws and regulations.

Site Location and Current Usage

The Site is located at 23-01 41st Avenue in the Long Island City section of Queens, New York and is identified as Block 408 and Lot 5 on the New York City Tax Map. Figure 1 shows the Site location. The Site is an 8,519-square foot lot and is bounded by a two-story commercial building to the north, 41st Avenue followed by a fifteen-story mixed-use building to the south, a two-story commercial building to the east, and 23rd Street followed by a seven-story commercial building to the west. A map of the site boundary is shown in Figure 2. Currently, the Site contains a vacant one-story building and was most recently utilized as a gasoline filling station with a one-story auto repair shop.

Summary of Proposed Redevelopment Plan

The proposed future use of the Site will consist of a six-story mixed use commercial and residential building with a full cellar utilized for parking. Layout of the proposed site development is presented in Figure 3. The current zoning designation is M1-2/R6A. The proposed use is consistent with existing zoning for the property.

The proposed development consists of a full build-out of the property with a single building and a full cellar. The cellar will be set to a depth of approximately 10 feet below ground surface to account for footings and the foundation slab. The cellar will have a footprint of 6,117.8 square feet and contain 19 parking spots, meter rooms, a trash compactor room, laundry room and an

elevator. The remainder of property will include a ramp going down to cellar. The ground floor will contain a residential lobby and 5 commercial units. There will be a total area of 5,396.37 square feet of commercial space. Floors 2 through 6 will be utilized as residential living space with a total of 37 apartments. The final height of the building is projected to be 82.34', including the parapet. There are currently no proposed landscaped areas. An estimated 4,800 tons of soils are projected to be excavated from the property; groundwater is located approximately 10 feet below ground surface and is likely to be encountered during construction.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

Summary of Environmental Findings

1. The site is approximately 29 feet above sea level.
2. Depth to groundwater ranges from approximately 10 to 14 feet below ground surface at the Site.
3. Accurate depths to groundwater were not determined during this investigation. At the time of the investigation the MTA was working on the subway line adjacent to the property. A groundwater trailer was set up on the south side of 41st Avenue and is believed to be dewatering the area. Therefore, groundwater flow was not determined beneath the Site.
4. Bedrock was not encountered at the site during the investigation.
5. The stratigraphy of the site, from the surface down, consists of yellow-brown to orange-brown very fine and silty sands mixed with frequent clay.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6.8 Unrestricted Use (Track 1) and Restricted Residential Use (Track 2) Soil Cleanup Objectives (SCOs). Several VOC were identified and of those 1,2,4-Trimethylbenzene (max of 540,000 µg/kg), 1,3,5-Trimethylbenzene (max of 180,000 µg/kg), total xylenes (max of 230,000 µg/kg), benzene (max of 18,000 µg/kg) and ethylbenzene (max of 170,000 µg/kg) exceeded Unrestricted Use SCOs and Restricted Residential Use SCOs. Petroleum related compounds above Unrestricted Use SCOs were detected in eleven of

the twenty-two soil samples. Several SVOCs including benzo(a)anthracene (max of 2,690 µg/kg), benzo(a)pyrene (max of 1,210 µg/kg), benzo(b)fluoranthene (max of 1,150 µg/kg), indeno(1,2,3-c,d)pyrene (max of 1,020 µg/kg) and napthalene (max of 118,000 µg/kg). PCBs were not detected in any sample. One pesticide, 4,4'-DDT was detected above Unrestricted Use SCOs in shallow soil sample. Two metals were detected above Restricted Residential Use SCOs. Lead (max. of 1,040 µg/kg) and Mercury with a concentration of 1.42 µg/kg. Cadmium, chromium, copper, nickel, selenium and zinc exceeded Track 1 SCOs but did not exceed Track 2 Restricted Residential SCOs. During tank removal, the site was assigned spill number 14-10817.

7. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). A total of 15 VOCs including 1,2,4-Trimethylbenzene (1,400 µg/L), 1,3,5-Trimethylbenzene (440 µg/L), benzene (460 µg/L), ethylbenzene (2,000 µg/L), isopropylbenzene (110 µg/L), n-Propylbenzene (220 µg/L), sec-Butylbenzene (12 µg/L), toluene (780 µg/L), total xylenes (5,100 µg/L), acetone (250 µg/L), chloroform (16 µg/L), methylene chloride (720 µg/L), methylcyclohexane (200 µg/L) and p-Isopropyltoluene (24 µg/L) were detected above their respective GQSs. Four SVOC's including 2-Methylnapthalene (max concentration of 501 µg/L), naphthalene (max concentration of 453 µg/L), 1,1'-Biphenyl (27.4 µg/L) and phenanthrene (55.5 µg/L) exceeded their GQSs. Pesticides were not detected in groundwater. PCB, Aroclor 1260 was detected at trace concentrations. Several metals were identified, but only iron, manganese, sodium and selenium were detected above their respective GQSs in dissolved groundwater.

8. Soil vapor samples collected during the RI were compared to the compounds listed in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion. All of the detected compounds were below their respective guidance values. Soil vapor samples showed elevated levels of petroleum related compounds and trace levels of chlorinated VOCs in all soil vapor samples. Petroleum related BTEX compounds were detected at a maximum concentration of 45,100 ug/m^3 in SV-2. Elevated concentrations were detected for acetone (max. of 15,000 ug/m^3), cyclohexane (max. of 210,000 ug/m^3) and n-Hexane (max of 770,000 ug/m^3). Chlorinated VOCs,

tetrachlorethene (PCE) and carbon tetrachloride were detected in one sample with concentrations of 3.3 $\mu g/m^3$ and 0.52 $\mu g/m^3$, respectively. Trichloroethene (TCE), and 1,1,1-tetrachloroethane were not detected in any soil vapor samples. The detected concentrations of PCE and carbon tetrachloride were below the monitoring level range established by the NYSDOH.

Summary of the Remedy

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan (CPP).
2. Perform a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds.
3. Establishment of Site Specific Track 4 Soil Cleanup Objectives (SCOs).
4. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency required by disposal facility. A Waste Characterization Report documenting sample procedures, location, analytical results shall be submitted to NYCOER prior to the start of the remedial action;
5. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
6. Excavation and removal of soil/fill exceeding Site Specific Track 4 SCOs. Planned development-based excavation will be to a depth of approximately 10 feet in the cellar

area across the entire property. Approximately 4,800 tons of soil will be excavated and removed from this site.

7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media onsite.
8. Removal of USTs (if encountered) and closure of in compliance with applicable local, State, and Federal laws and regulations.
9. Performance of a remedial action for the petroleum spill #14-10817 under New York State Department of Environmental Conservation (NYSDEC) Spill program. This remedial action will consist of the excavation and removal of petroleum impacted soil to the extent feasible, application of ORC injections if required by NYSDEC and the installation of a vapor barrier.
10. Request for closure of onsite petroleum spill number 14-03152 under the authority of NYSDEC pending the results of the investigation and remediation and in accordance with CP-51 soil cleanup objectives. This RAWP does not alter or interfere with the remedial action for the petroleum spill. A separate Spill closure report will be prepared and submitted to NYSDEC.
11. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials as described in Appendix 3.
12. Based on the elevated concentrations of naphthalene detected in the subsurface soils from the RIR, a method for odor control such as foam or water spray will be utilized during the excavation of contaminated soils.
13. Implementation of temporarily dewatering the site to over-excavate areas of impacted soil and eliminate the source of groundwater contamination.
14. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media onsite.

15. Collection and analysis of five end-point samples beneath the building footprint to determine the performance of the remedy with respect to attainment of SCOs. If accessible, sidewall samples will be collected according to DER-10 specifications (1 samples for every 30 linear feet).

16. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.

17. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.

18. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.

19. Submission of a Remedial action report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.

20. Construction and maintenance of an engineered composite cover consisting of the concrete building foundation and concrete parking lot across the entire property to prevent human exposure to residual soil/fill remaining under the Site.

21. Installation of a vapor barrier system beneath the building slab and outside foundation sidewalls below grade. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven-layer co-extruded barrier made from polyethylene and EVOH resins.

22. Installation and operation of an active sub-slab depressurization system underneath the footprint of new building. The SSDS will consist of a network of horizontal perforated pipes installed within a minimum of 18-inch layers of crushed stone beneath the building's 6-inch concrete foundation floor and 8-inch reinforced concrete ramp. The perforated piping will consist of 4-inch diameter scheduled 40 PVC perforated pipe. A minimum of 4 inches of crushed stone will be placed above and below the pipes.

23. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.

24. The property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

COMMUNITY PROTECTION STATEMENT

The Office of Environmental Remediation created the New York City Voluntary Cleanup Program (NYC VCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan ("cleanup plan") describes the findings of prior environmental studies that show the location of contamination at the site, and describes the plans to clean up the site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

Remedial Investigation and Cleanup Plan. Under the NYC VCP, a thorough cleanup study of this property (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

Identification of Sensitive Land Uses. Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

Qualitative Human Health Exposure Assessment. An important part of the cleanup planning for the Site is the performance of a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.

Health and Safety Plan. This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this plan are in compliance with safety requirements of the United States Occupational Safety and Health Administration (OSHA). This plan includes many protective elements including those discussed below.

Site Safety Coordinator. This project has a designated Site safety coordinator to implement the Health and Safety Plan. The safety coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site safety coordinator is Yisong Yang and can be reached at 718-508-2970.

Worker Training. Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

Community Air Monitoring Plan. Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan or CAMP. Results will be regularly reported to the NYC Office of Environmental Remediation. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a 'Contingency Plan').

Odor, Dust and Noise Control. This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact the onsite Project Manager Jack Fang (646-533-2801) or NYC Office of Environmental Remediation Project Manager Alysha Alfieri (212-676-0459).

Quality Assurance. This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be

summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

Storm-Water Management. To limit the potential for soil erosion and discharge, this cleanup plan has provisions for storm-water management. The main elements of the storm water management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

Hours of Operation. The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation are 7am – 6pm Monday through Friday.

Signage. While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program, provides project contact names and numbers, and locations of project documents can be viewed.

Complaint Management. The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager Jack Fang at 346-533-2801, the NYC Office of Environmental Remediation Project Manager Alysha Alfieri at 212-676-0459, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

Utility Mark-outs. To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

Soil and Liquid Disposal. All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations and required permits will be obtained.

Soil Chemical Testing and Screening. All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held

instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

Stockpile Management. Soil stockpiles will be kept covered with tarps to prevent dust, odors and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed to protect storm water catch basins and other discharge points.

Trucks and Covers. Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

Imported Material. All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on-Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

Equipment Decontamination. All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

Housekeeping. Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

Truck Routing. Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

Final Report. The results of all cleanup work will be fully documented in a final report (called a Remedial Action Report) that will be available for you to review in the public document repositories located at Queens Library at Long Island City.

Long-Term Site Management. To provide long-term protection after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC Office of Environmental Remediation. Requirements that the property owner must comply with are defined in the property's deed or established through a city environmental designation. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

REMEDIAL ACTION WORK PLAN

1.0 SITE BACKGROUND

Queens Bridgeview Tower LLC has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 23-01 41st Avenue in the Long Island City section of Queens, New York (the "Site"). A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides a remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action described in this document provides for the protection of public health and the environment, complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 SITE LOCATION AND CURRENT USAGE

The Site is located at 23-01 41st Avenue in the Long Island City section of Queens, New York and is identified as Block 408 and Lot 5 on the New York City Tax Map. Figure 1 shows the Site location. The Site is an 8,519-square foot lot and is bounded by a two-story commercial building to the north, 41st Avenue followed by a fifteen-story mixed-use building to the south, a two-story commercial building to the east, and 23rd Street followed by a seven-story commercial building to the west. A map of the site boundary is shown in Figure 2. Currently, the Site contains a vacant one-story building and was most recently utilized as a gasoline filling station with a one-story auto repair shop.

1.2 PROPOSED REDEVELOPMENT PLAN

The proposed future use of the Site will consist of a six-story mixed use commercial and residential building with a full cellar utilized for parking. Layout of the proposed site development is presented in Figure 3. The current zoning designation is M1-2/R6A. The proposed use is consistent with existing zoning for the property.

The proposed development consists of a full build-out of the property with a single building and a full cellar. The cellar will be set to a depth of approximately 10 feet below ground surface to account for footings and the foundation slab. The cellar will have a footprint of 6,117.8 square feet and contain 19 parking spots, meter rooms, a trash compactor room, laundry room and an elevator. The ground floor will contain a residential lobby and 5 commercial units. There will be a total area of 5,396.37 square feet of commercial space. Floors 2 through 6 will be utilized as residential living space with a total of 37 apartments. The final height of the building is projected to be 82.34', including the parapet. There are currently no proposed landscaped areas. An estimated 4,800 tons of soils are projected to be excavated from the property, groundwater is located approximately 10 feet below ground surface and is likely to be encountered during construction.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The site is located at 23-01 41st Avenue in the Long Island City section of Queens. The surrounding area consists of commercial and residential buildings. The zoning for the area is M1-2/R6A for mixed-use properties. There are no sensitive receptors such as schools, hospitals or day care facilities within a 500-foot radius of the site.

Figure 4 shows the surrounding land usage.

1.4 REMEDIAL INVESTIGATION

A remedial investigation was performed and the results are documented in a companion document called "*Remedial Investigation Report, 23-01 41st Avenue, Long Island City, NY*", dated March, 2015 (RIR).

Summary of Past Uses of Site and Areas of Concern

Advanced Cleanup Technologies (ACT) completed a Phase I Environmental Site Assessment on January 26th, 2015. The previous usage of the property consisted of three one story residential buildings in the late 1800's that were demolished by 1915. By 1936 the property was occupied

by a one-story auto repair shop and filling station that remained active until 2015. The Phase I identified the following Recognized Environmental Conditions:

- Historical gasoline filling station at the subject property.
- An open petroleum spill at the adjacent property to the south.
- Inactive underground storage tanks at the subject property.
- A potential vapor encroachment condition at the subject property.

ACT recommended that a Phase II should be conducted to determine whether the environmental quality of the subject property had been impacted. The recommended Phase II was to include a Ground Penetrating Radar (GPR) Survey and the collection and analysis of soil, soil vapor and groundwater samples.

The AOCs identified for this site include:

1. Areas of soil contamination noted during the removal of USTs.
2. Open NYSDEC Spill No. 14-10817 at the property.
3. Staining from historic auto repair activities.

Summary of the Work Performed under the Remedial Investigation

Queens Bridgeview Tower LLC performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a geophysical investigation to determine the locations of USTs;
3. Installed eight soil borings across the entire project Site, and collected twenty-two soil samples for chemical analysis from the soil borings to evaluate soil quality;
4. Installed two temporary groundwater monitoring wells throughout the Site and collected two groundwater samples for chemical analysis to evaluate groundwater quality;
5. Installed four soil vapor probes around Site perimeter and collected four samples for chemical analysis.

Summary of Environmental Findings

1. The site is approximately 29 feet above sea level.
2. Depth to groundwater ranges from approximately 10 to 14 feet below ground surface at the Site.
3. Accurate depths to groundwater were not determined during this investigation. At the time of the investigation the MTA was working on the subway line adjacent to the property. A groundwater trailer was set up on the south side of 41st Avenue and is believed to be dewatering the area. Therefore, groundwater flow was not determined beneath the Site.
4. Bedrock was not encountered at the site during the investigation.
5. The stratigraphy of the site, from the surface down, consists of yellow-brown to orange-brown very fine and silty sands mixed with frequent clay.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6.8 Unrestricted Use (Track 1) and Restricted Residential Use (Track 2) Soil Cleanup Objectives (SCOs). Several VOC were identified and of those 1,2,4-Trimethylbenzene (max of 540,000 µg/kg), 1,3,5-Trimethylbenzene (max of 180,000 µg/kg), total xylenes (max of 230,000 µg/kg), benzene (max of 18,000 µg/kg) and ethylbenzene (max of 170,000 µg/kg) exceeded Unrestricted Use SCOs and Restricted Residential Use SCOs. Petroleum related compounds above Unrestricted Use SCOs were detected in eleven of the twenty-two soil samples. Several SVOCs including benzo(a)anthracene (max of 2,690 µg/kg), benzo(a)pyrene (max of 1,210 µg/kg), benzo(b)fluoranthene (max of 1,150 µg/kg), indeno(1,2,3-c,d)pyrene (max of 1,020 µg/kg) and napthalene (max of 118,000 µg/kg). PCBs were not detected in any sample. One pesticide, 4,4'-DDT was detected above Unrestricted Use SCOs in shallow soil sample. Two metals were detected above Track 2 SCOs. Lead (max concentration of 1,040 µg/kg) and Mercury with a concentration of 1.42 µg/kg. Cadmium, chromium, copper, nickel, selenium and zinc exceeded Track 1 SCOs but did not exceed Track 2 Restricted Residential SCOs. During tank removal, the site was assigned spill number 14-10817.

7. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). A total of 15 VOCs including 1,2,4-Trimethylbenzene (1,400 µg/L), 1,3,5-Trimethylbenzene (440 µg/L), benzene (460 µg/L), ethylbenzene (2,000 µg/L), isopropylbenzene (110 µg/L), n-Propylbenzene (220 µg/L), sec-Butylbenzene (12 µg/L), toluene (780 µg/L), total xylenes (5,100 µg/L), acetone (250 µg/L), chloroform (16 µg/L), methylene chloride (720 µg/L), methylcyclohexane (200 µg/L) and p-Isopropyltoluene (24 µg/L) were detected above their respective GQSs. Four SVOC's including 2-Methylnapthalene (max concentration of 501 µg/L), naphthalene (max concentration of 453 µg/L), 1,1'-Biphenyl (27.4 µg/L) and phenanthrene (55.5 µg/L) exceeded their GQSs. Pesticides were not detected in groundwater. PCB, Aroclor 1260 was detected at trace concentrations. Several metals were identified, but only iron, manganese, sodium and selenium were detected above their respective GQSs in dissolved groundwater.

8. Soil vapor samples collected during the RI were compared to the compounds listed in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion. All of the detected compounds were below their respective guidance values. Soil vapor samples showed elevated levels of petroleum related compounds and trace levels of chlorinated VOCs in all soil vapor samples. Petroleum related BTEX compounds were detected at a maximum concentration of 45,100 ug/m^3 in SV-2. Elevated concentrations were detected for acetone (max. of 15,000 ug/m^3), cyclohexane (max. of 210,000 ug/m^3) and n-Hexane (max of 770,000 ug/m^3). Chlorinated VOCs, tetrachlorethene (PCE) and carbon tetrachloride were detected in one sample with concentrations of 3.3 µg/m^3 and 0.52 µg/m^3, respectively. Trichloroethene (TCE), and 1,1,1-tetrachloroethane were not detected in any soil vapor samples. The detected concentrations of PCE and carbon tetrachloride were below the monitoring level range established by the NYSDOH.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this site.

2.0 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for this Site:

Groundwater

- Remove contaminant sources causing impact to groundwater.
- Monitor groundwater improvement if required by NYSDEC Spills in response to contaminant source removal and/or treatment.
- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

Soil

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

3.0 REMEDIAL ALTERNATIVES ANALYSIS

The goal of the remedy selection process is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values (SCGs). A remedy is then developed based on the following ten criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and permanence;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance;
- Land use; and
- Sustainability.

The following is a detailed description of the alternatives analysis and remedy selection to address impacted media at the Site. As required, minimum of two remedial alternatives (including a Track 1 scenario) are evaluated. Alternative 1 is a Track 1 alternative that involves removal of all soil impacted above Track 1 Unrestricted Use SCOs. Alternative 2 removes all impacted soil above Track 4 Site-Specific SCOs.

Alternative 1 involves:

- Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs);

- Removal of all soil/fill exceeding Track 1 Unrestricted Use SCOs and confirmation that Track 1 has been achieved with post-excavation endpoint sampling. If soil/fill containing chemical constituents at concentrations above Track 1 Unrestricted Use SCOs are still present at the base of the excavation after the removal of all soil required for new construction, additional excavation would be performed to ensure complete removal of soil that does not meet Track 1 Unrestricted Use SCOs;

- No Engineering or Institutional Controls are required for a Track 1 cleanup, but a vapor barrier/waterproofing membrane would be installed beneath the entire new floor slab and behind foundation sidewalls of the new building as part of new development to prevent any potential future exposures from off-Site soil vapor;

- As part of development, placement of a final cover over entire Site (Basement concrete foundation).

Alternative 2 involves:

- Establishment of Site-Specific (Track 4) SCOs;

- Excavation and removal of all soil/fill exceeding Site-specific SCOs and confirmation that Track 4 has been achieved with post-excavation end-point sampling. Excavation for construction of the new building's cellar level would take place to a depth of approximately 10 feet for the building footprint. Therefore, if soil/fill containing analytes at concentrations above Track 4 Site-Specific SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building is complete, additional excavation will be performed to achieve Site Specific SCOs.

- Installation of a vapor barrier system beneath the entire new building slab and behind sub-grade foundation sidewalls of the new building as part of development to prevent exposure to soil vapor contaminants;

- Installation of an active sub-slab depressurization system (SSDS) beneath the entire new building slab and parking ramp;

- Placement of final cover over the Site (basement concrete foundation);

- Establishment of use restrictions including prohibitions on the use of groundwater from the Site and prohibitions on sensitive site uses, such as farming or vegetable gardening, to eliminate future exposure pathways;
- Establishment of an approved Site Management Plan to ensure long-term management of the above Engineering and Institutional Controls including the performance of periodic inspections and certification that the Controls are performing as they were intended; and

Continued registration as an E-designated property to memorialize the remedial action and the Engineering and Institutional Controls required by this RAWP

3.1 THRESHOLD CRITERIA

Protection of Public Health and the Environment

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Engineering Controls or Institutional Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing all soil/fill exceeding Track 1 Unrestricted Use SCOs and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contamination leaching into groundwater.

Alternative 2 would achieve comparable protections of human health and the environment by excavating hazardous material at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site Specific SCOs as well as by future placement of Institutional and Engineering Controls, including installation of a vapor barrier system beneath the entire new building slab and behind foundation sidewalls as part of construction would prevent exposures from potential soil vapor intrusion. Implementing Institutional Controls, a Site Management Plan would ensure that the vapor barrier remains intact and protective and that the SSDS system remains active.

For both remedial Alternatives, potential exposure to contaminated soils during construction would be minimized by implementing a Construction Health and Safety Plan (CHASP), an

approved Soils/Materials Management Plan, and a Community Air Monitoring Plan (CAMP). Potential contact with groundwater would be prevented as its use is prohibited by city laws and regulations. Potential future mitigation of off-Site soil vapors into the new building would be prevented by installing a vapor barrier/ waterproofing membrane below the new building's basement slab and continuing the vapor barrier around foundation walls.

3.2. BALANCING CRITERIA

Compliance with Standards, Criteria and Guidance (SCGs)

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to meet Track 1 Unrestricted Use SCOs. Compliance with SCGs for soil vapor would also be achieved by installing a vapor barrier system below the new building's basement slab and continuing the vapor barrier around foundation walls, as part of development.

Alternative 2 would achieve compliance with remedial goals, chemical-specific SCGs and RAOs for soil through the removal of soil to meet Track 4 Site-Specific SCOs. Compliance with SCGs for soil vapor would also be achieved by installation and operation of active SSD System and by installation of a vapor barrier system beneath the entire floor slab and behind foundation sidewalls as part of construction as well as an active sub-slab depressurization system (SSDS). A Site Management Plan would ensure that these controls remain protective for the long term.

Health and safety measures contained in the CHASP and CAMP that comply with the applicable SCGs would be implemented during the Site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs. These measures would protect on-site workers and the surrounding community from exposure to Site-related contaminants.

Short-term effectiveness and impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their effects on public health and the environment during implementation of the remedial action, including protection of the community, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

Both remedial alternatives have similar short-term effectiveness during their respective implementations, as each requires excavation of soil/fill material. Alterative 1 would eliminate and Alternative 2 would reduce exposure to contaminant sources. Both alternatives would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short-term impacts could potentially be higher for Alternative 1 if excavation of greater amounts of historic fill material is encountered below the excavation depth of the proposed building. However, focused attention to means and methods during the remedial action during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize or negate the overall impact of these activities.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flaggers will be used to protect pedestrians at Site entrances and exits.

Both Alternatives would employ appropriate measures to prevent short-term impacts, including a Community Air Monitoring Plan (CAMP) and a Soil/Materials Management Plan (SMMP), during all on-site soil disturbance activities and would effectively mitigate the release of significant contaminants into the environment. Construction workers operating under appropriate management procedures and a Health and Safety Plan (HASP) will be protected from on-site contaminants (personal protective equipment would be work consistent with the documented risks within the respective work zones).

Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs/ICs that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of Engineering Controls.

Alternative 1 would achieve higher long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill and enabling unrestricted usage of the property. Potential sources of soil vapor contamination would also be eliminated as part of the Track 1 remedy.

Alternative 2 would be effective over the long-term by attaining Track 4 SCOs for soil, establishing use restrictions, establishing a Site Management Plan to ensure long-term management of Institutional and Engineering Controls, and placing a deed restriction to memorialize these controls for the long term. Groundwater use restrictions will eliminate potential exposure to groundwater and establishment of an SMP would ensure that this protection remains effective for the long-term. The SMP would ensure long-term effective of all Engineering and Institutional Controls by requiring periodic inspection and certification that these controls and use restrictions continue to be in place and functioning as they were intended assuring that protections designed into the remedy will provide continued high level of protection in perpetuity.

Both Alternatives would result in removal of soil contamination exceeding the SCOs providing the highest level, most effective and permanent remedy over the long-term with respect to a remedy for contaminated soil, which will eliminate any migration to groundwater. A vapor barrier as part of the remedy would also eliminate potential sources of soil vapor and groundwater contamination. If on-site sources are removed, soil vapor impacts would be expected to dissipate.

Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 would permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 – Unrestricted Use SCOs.

Alternative 2 would greatly reduce the toxicity, mobility, and volume of contaminants from on-Site soil because it would include removal of contaminants that exceed Track 4 – Restricted Residential SCOs. Alternative 1 would eliminate a greater total mass of contaminants on Site.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The techniques, materials and equipment to implement Alternatives 1 and 2 are readily available and have been proven effective in remediating the contaminants associated with the Site. They use standard materials and services that are well-established technology. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

For implementation of both Alternatives, standard construction equipment utilized for the overall earthwork would be used. OSHA trained personnel will complete all activities that include excavation and handling of impacted soils. No special permits other than earthwork permits required for completion of the required site redevelopment scope are required for implementation of the remedy.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

The capital costs associated with the Track 1 Alternative are marginally higher than the Track 4 Alternative in that a higher volume of soil/fill might have to be excavated for off-site disposal to achieve a Track 1 status over the entire site. In both cases, appropriate public health and environmental protections are achieved. Track 4 would require long term monitoring and higher associated costs.

The remedial plan creates an approach that combines the remedial action with the redevelopment of the Site, including the construction of the building foundation and subgrade structures. The remedial plan is also cost-effective in that it will take into consideration the selection of the closest and most appropriate disposal facilities to reduce transportation and disposal costs during the excavation of historic fill and other soils during the development of the Site.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action. Observations here will be supplemented by public comment received on the RAWP.

Based on the overall goals of the remedial program and initial permitting associated with the proposed site development, no adverse community opinion is anticipated for either alternative. This RAWP will be subject to and undergo public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedial

action. This public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Appendix 1. Observations here will be supplemented by public comment received on the RAWP.

Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the site.

Because of the complete soil removal, the Track 1 alternative provides protection of public health and the environment for both the proposed use of the Site and any future use. The Track 1 alternative provides a remedial action that is beneficial to the surrounding community and is consistent with the goals of the City for remediating and redeveloping brownfield sites. The Track 4 alternative also provides protection for the intended use.

Both alternatives for remedial action at the site are comparable with respect to the proposed use and to land uses in the vicinity of the Site. The proposed use is consistent with the existing zoning designation for the property and is consistent with recent development patterns. The Site is surrounded by residential properties, and both alternatives provide comprehensive protection of public health and the environment for these uses. Improvements in the current environmental condition of the property achieved by both alternatives are also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. Both alternatives are equally protective of natural resources and cultural resources. This RAWP will undergo public review under the NYC VCP and will provide the opportunity for detailed public

input on the land use factors described in this section. This public comment will be considered by OER prior to approval of this plan.

Sustainability of the Remedial Action

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in *PlaNYC: A Greener, Greater New York*. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

Both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action. The remedial plan would take into consideration the shortest trucking routes during off-Site disposal of historic fill and other soils, which would reduce greenhouse gas emissions and conserve energy used to fuel trucks. New York City Clean soil Bank may be utilized for transfer of clean soil to nearby facilities. To the extent practicable, energy efficient building materials, appliances, and equipment will be utilized to complete the development. A complete list of green remedial activities considered as part of the NYC VCP is included in the Sustainability Statement, included as Appendix 2.

4.0 REMEDIAL ACTION

4.1 SUMMARY OF PREFERRED REMEDIAL ACTION

The preferred remedial action alternative is Alternative 2, the Track 4 Alternative. The preferred remedial action alternative achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan (CPP).
2. Perform a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds.
3. Establishment of Site Specific Track 4 Soil Cleanup Objectives (SCOs).
4. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency required by disposal facility. A Waste Characterization Report documenting sample procedures, location, analytical results shall be submitted to NYCOER prior to the start of the remedial action;
5. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas;
6. Excavation and removal of soil/fill exceeding Site Specific Track 4 SCOs. Planned development-based excavation will be to a depth of approximately 10 feet in the cellar area across the entire property. Approximately 4,800 tons of soil will be excavated and removed from this site;

7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media onsite;
8. Removal of USTs (if encountered) and closure of in compliance with applicable local, State, and Federal laws and regulations;
9. Performance of a remedial action for the petroleum spill #14-10817 under New York State Department of Environmental Conservation (NYSDEC) Spill program. This remedial action will consist of the excavation and removal of petroleum impacted soil to the extent feasible, application of ORC injections if required by NYSDEC and the installation of a vapor barrier;
10. Request for closure of onsite petroleum spill number 14-03152 under the authority of NYSDEC pending the results of the investigation and remediation and in accordance with CP-51 soil cleanup objectives. This RAWP does not alter or interfere with the remedial action for the petroleum spill. A separate Spill closure report will be prepared and submitted to NYSDEC
11. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials as described in Appendix 3;
12. Based on the elevated concentrations of naphthalene detected in the subsurface soils from the RIR, a method for odor control such as foam or water spray will be utilized during the excavation of contaminated soils;
13. Implementation of temporarily dewatering the site to over-excavate areas of impacted soil and eliminate the source of groundwater contamination.
14. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media onsite;
15. Collection and analysis of five end-point samples beneath the building footprint to determine the performance of the remedy with respect to attainment of SCOs. If

accessible, sidewall samples will be collected according to DER-10 specifications (1 samples for every 30 linear feet);

16. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations;

17. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations;

18. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;

19. Submission of a Remedial action report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP;

20. Construction and maintenance of an engineered composite cover consisting of the concrete building foundation and concrete parking lot across the entire property to prevent human exposure to residual soil/fill remaining under the Site;

21. Installation of a vapor barrier system beneath the building slab and outside foundation sidewalls below grade. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven-layer co-extruded barrier made from polyethylene and EVOH resins.

22. Installation and operation of an active sub-slab depressurization system underneath the footprint of new building. The SSDS will consist of a network of horizontal perforated pipes installed within a minimum of 18-inch layers of crushed stone beneath the building's 6-inch concrete foundation floor and 8-inch reinforced concrete ramp. The perforated piping will consist of 4-inch diameter scheduled 40 PVC perforated pipe. A minimum of 4 inches of crushed stone will be placed above and below the pipes.

23. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance,

monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.

24. The property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

4.2 SOIL CLEANUP OBJECTIVES AND SOIL/FILL MANAGEMENT

The Site-Specific Track 4 SCOs for this Site are:

Contaminant	**Track 4 SCOs**
VOCs	VOC List and Soil Cleanup Levels per NYSDEC CP-51 Table 2
Total SVOCs	250 ppm
Lead	1,000 ppm
Mercury	2.5 ppm

These SCOs were established during the RAWP scoping meeting.

Soil and materials management on-Site and off-Site, including excavation, handling and disposal, will be conducted in accordance with the Soil/Materials Management Plan in Appendix 3. The location of endpoint sampling is shown in Figure 9.

Discrete contaminant sources (such as hotspots) identified during the remedial action will be identified by GPS or surveyed. This information will be provided in the Remedial Action Report.

Estimated Soil/Fill Removal Quantities

The total quantity of soil/fill expected to be excavated and disposed off-Site is approximately 4,800 tons. Disposal facilities will be reported to OER when they are identified and prior to the start of remedial action.

End-Point Sampling

Removal actions for development purposes under this plan will be performed in conjunction with confirmation soil sampling. Five confirmation samples will be collected from the base of the excavation at locations shown on Figure 9. For comparison to Track 4 SCOs, analytes will include VOCs, SVOC, pesticides, PCBs and metals according to analytical methods described below.

Hot-spot removal actions, whether established under this RAWP or identified during the remedial program, will be performed in conjunction with post remedial end-point samples to ensure that hot-spots are fully removed. Analytes for end-point sampling will be those parameters that are driving the hot-spot removal action and will be approved by OER. Frequency for hot-spot end-point sample collection is as follows:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.

2. For excavations 20 to 300 feet in perimeter:

- For surface removals, one sample from the top 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.
- For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.

3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.

4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation end-point sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field

indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples should be biased toward locations and depths of the highest expected contamination.

New York State ELAP certified labs will be used for all confirmation and end-point sample analyses. Labs performing confirmation and end-point sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all confirmation and end-point sample results and will include all data including non-detects and applicable standards and/or guidance values. End-point samples will be Confirmation samples will be analyzed for compounds and elements as described above utilizing the following methodology:

Soil analytical methods will include:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and "finger print analysis" and required regulatory reporting (i.e. spills hotline) will be performed.

Quality Assurance/Quality Control

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol. The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

One blind duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. One trip blank will be submitted to the

laboratory with each shipment of soil samples. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or "cold-paks" to maintain a temperature of 4°C.

Dedicated disposable sampling materials will be used for the collection of endpoint samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash with alconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Field blanks will be prepared by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers.

Import and Reuse of Soils

Import of soils onto the property and reuse of soils already onsite will be performed in conformance with the Soil/Materials Management Plan in Appendix 3. The estimated quantity of soil to be imported into the Site for the parking ramp is approximately 179 tons. There will be no reuse of contaminated soils on-site.

4.3 ENGINEERING CONTROLS

The excavation required for the proposed Site development will achieve Track 4 Site Specific SCOs. Engineering Controls are required to address residual contamination remaining at the site. The Site has three primary Engineering Control Systems as:

- composite cover system consisting of a concrete building slab;
- an active sub-slab depressurization system beneath the newly installed foundation slab;
- soil vapor barrier/waterproof membrane;

Composite Cover System

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system is comprised of:

- asphalt covered roads;
- concrete covered sidewalks;
- 6-inch concrete building foundation slab and 8-inch reinforced parking ramp;

Figure 10 shows the location of each cover type built at the Site.

The composite cover system is a permanent engineering control for the Site. The system will be inspected and reported at specified intervals as required by this RAWP and the SMP. A Soil Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the RAR.

Vapor Barrier

Migration of soil vapor will be mitigated with a combination of building slab and vapor barrier. A pre-applied integrally bonded sheet waterproofing membrane with a High Density Polyethylene (HDPE) film will be installed as an impermeable vapor barrier underneath the

entire foundation of the proposed building and the sidewalls of the cellar level. Photo documentation of the waterproofing membrane installation will be submitted as part of the Remedial Action Report. Vapor barrier/waterproofing specifications are provided in Figure 7.

The project's Professional Engineer licensed by the State of New York will have primary direct responsibility for overseeing the implementation of the vapor barrier. The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturers certificate of warranty.

o **Active Sub-Slab Depressurization System**

Migration of soil vapor will be mitigated with the construction of an active sub-slab depressurization system. Contaminated sub-slab vapor is likely to be present mainly beneath the Site as a result of off gassing from residual contaminated subsurface soil and ground water.

An active sub-slab depressurization system will be installed beneath the entire building foundation as well as the parking ramp. The SSDS will be designed in conjunction with the vapor barrier to create a negative pressure beneath the entire Site and prevent the migration of fugitive soil vapors into the proposed building. The SSDS will consist of a network of horizontal perforated pipes installed within a minimum of 18-inch layers of crushed stone beneath the building's 10-inch foundation floor. The perforated piping will consist of 4-inch diameter scheduled 40 PVC perforated pipe. A minimum of 4 inches of crushed stone will be placed above and below the pipes.

The horizontal depressurization piping will be connected to one or more vertical header pipes that will discharge above the first floor commercial units. A vacuum blower will be installed on the exhaust pipe to maintain negative pressure beneath the building foundation. Following installation of the active SSDS, indoor air samples will be collected and analyzed to provide a basis for the operation of the SSDS as a passive system. Design plans and specifications for the SSDS are provided in Figure 8.

Ventilated Garage

A ventilated sub surface garage will be operated per high volume air exchange requirements and codes of the NYC Building's Department.

4.4 INSTITUTIONAL CONTROLS

Institutional Controls (IC) will be incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. Institutional Controls are listed below. Long-term employment of EC/ICs will be implemented under a site-specific Site Management Plan (SMP) that will be included in the RAR. The property will continue to be registered with an E-Designation by the NYC Buildings Department.

Institutional Controls for this remedial action are:

- Continued registration of the E-Designation for the property. This RAWP includes a description of all ECs and ICs and summarizes the requirements of the SMP which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;
- Submittal of an SMP in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, monitoring, inspection, reporting and certification of ECs and ICs. The SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted at a frequency to be determine by OER in the SMP and will comply with RCNY §43-1407(l)(3).
- Vegetable gardens and farming on the Site are prohibited in contact with residual soil materials;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;

- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;
- The Site will be used for mixed commercial and residential use and will not be used for a higher level of use without prior approval by OER.

4.5 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by this RAWP. The SMP is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The property owner is responsible to ensure that all Site Management responsibilities defined in the SMP are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Brownfield Cleanup Agreement with OER. This includes a plan for: (1) implementation of EC's and ICs; (2) implementation of monitoring programs; (3) operation and maintenance of EC's; (4) inspection and certification of EC's; and (5) reporting.

Site management activities, reporting, and EC/IC certification will be scheduled by OER on a periodic basis to be established in the SMP and will be subject to review and modification by OER. The Site Management Plan will be based on a calendar year and certification reports will be due for submission to OER by March 31 of the year following the reporting period.

4.6 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The objective of the qualitative exposure assessment is to identify potential receptors and pathways for human exposure to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Data and information reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA). As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk under current and future conditions by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This QHHEA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation.

Known and Potential Sources

Based on the results of the RIR, the contaminants of concern are:

Soil:

- VOCs including, petroleum constituents BTEX, 1,2,3-Trichlorobenzene and 1,3,5-Trimethylbenzene exceeded Restricted Residential SCOs.
- SVOCs consisting of Polycyclic Aromatic Hydrocarbons (PAHs) including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, napthalene and indeno(1,2,3-c,d)pyrene, exceeded Restricted Residential Use SCOs.
- Metals including lead and mercury exceeded Restricted Residential SCOs.

Groundwater:

- Multiple VOCs including the petroleum constituents BTEX, were detected above corresponding GQS's.
- Four SVOCs including 1,1'-Biphenyl, 2-methylnaphthalene, naphthalene and phenanthrene were detected above their GQS's.
- Metals including iron, manganese, selenium and sodium were detected above their corresponding GQS's in the dissolved groundwater samples.

Soil Vapor:

- Petroleum related BTEX compounds detected at elevated concentrations.

Nature, Extent, Fate and Transport of Contaminants

Based on the sampling results described above, the majority of the VOC, SVOC and metal contamination is due to the historical use of the site as a gasoline filling station.

Metals and SVOCs are present throughout the property at concentrations exceeding Restricted Residential Use SCOs. Groundwater concentrations of VOCs, SVOCs and metals are likely due to petroleum spills at the Site.

Soil vapor samples showed high levels of petroleum-related VOCs in all soil vapor samples. The majority of compounds detected in soil vapor such as 2-butanone, total xylenes are common components of petroleum and readily found in soil vapor in commercial areas.

Potential Routes of Exposure

The five elements of an exposure pathway are: (1) a contaminant source, (2) contaminant release and transport mechanisms, (3) a point of exposure, (4) a route of exposure, and (5) a receptor population.

An exposure pathway is considered complete when all five elements of an exposure pathway are documented. A potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway cannot be documented. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future. Three potential primary routes exist by which chemicals can enter the body:

• Ingestion of water, fill, or soil;

• Inhalation of vapors and particulates; and

• Dermal contact with water, fill, soil, or building materials

Existence of Human Health Exposure

Current Conditions: The Site is currently vacant.. Exposure to contaminated soil is unlikely because site access is restricted through the use of construction fencing and locks. Groundwater is not exposed at the Site, and because the Site is served by the public water supply and groundwater use for potable supply is prohibited, there is no potential for exposure. As there are no buildings, the potential for soil vapor does not exist.

Construction/ Remediation Activities: Once redevelopment activities begin, construction workers will come into direct contact with surface and subsurface soils, as a result of on-Site construction and excavation activities. On-Site construction workers potentially could ingest, inhale or have dermal contact with any exposed impacted soil and fill. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. During construction, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through dust controls, and through the implementation of the Community Air Monitoring Plan and Construction Health and Safety Plan. Groundwater is not anticipated to be encountered, and there will be no structures on-Site where soil vapor could accumulate.

Proposed Future Conditions: Under future remediated conditions, all soils in excess of Track 4 SCOs will be removed. The Site will be fully capped, limiting potential direct exposure to soil and groundwater remaining in place, and a vapor barrier system and sub-slab depressurization system will prevent any exposure to potential off-Site soil vapors in the future. The Site is served by a public water supply, and groundwater is not used at the Site for potable supply. There are no plausible off-Site pathways for ingestion, inhalation, or dermal exposure to contaminants derived from the Site under future conditions.

Receptor Populations

The immediate area is mixed use residential and commercial, and is anticipated to remain as such. The new building at the Site will be utilized as a residential property. Potential receptors populations are as follows:

On-Site Receptors – The Site is currently a vacant. Therefore, the only potential on-Site receptors are Site representatives, trespassers and visitors granted access to the property. During redevelopment of the Site, the on-Site potential receptors will include construction workers, site

representatives, and visitors. Once the Site is redeveloped, the on-Site potential sensitive receptors will include adult and child building residents and visitors.

Off-Site Receptors - Potential off-Site receptors within a 0.25-mile radius of the Site include: adult and child residents; commercial and construction workers; pedestrians; trespassers; and passerby based on the following:

1. Commercial Businesses (up to 0.25 mile) – existing and future
2. Residential Buildings (up to 0.25 mile) – existing and future
3. Building Construction/Renovation (up to 0.25 mile) – existing and future
4. Pedestrians, Trespassers, Cyclists (up to .25 mile) – existing and future
5. Schools (up to .25 mile) – existing and future

Overall Human Health Exposure Assessment

There are potential complete exposure pathways for the current site condition. There is a potential complete exposure pathway that requires mitigation during implementation of the remedy. There is no complete exposure pathway under future conditions after the Site is developed. This assessment takes into consideration the reasonably anticipated use of the site, which includes a residential structure, site-wide surface cover cap, and a vapor barrier system and sub-slab depressurization system for the building. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. There are no surface waters in close proximity to the Site that could be impacted or threatened.

During the remedial action, on-Site exposure pathways will be eliminated by preventing access to the Site, through the implementation of soils/materials management, storm water pollution prevention, dust controls, employment of Community Air Monitoring Plan, and implementation of a Construction Health and Safety Plan. After the remedial action is complete, there will be no remaining exposure pathways to on-Site soil/fill or groundwater, as all soil that exceed Track 4 Site-Specific SCOs will have been removed and the vapor barrier, sub-slab depressurization system and concrete building slab will interrupt potential for soil vapor intrusion and vapor build-up inside the building.

5.0 REMEDIAL ACTION MANAGEMENT

5.1 PROJECT ORGANIZATION AND OVERSIGHT

Principal personnel who will participate in the remedial action include Yisong Yang (ACT) as the designated Site Safety Officer, Timothy Young (ACT) as the alternate Site Safety Officer and Theresa Burkard (ACT) as the Project Manager. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Andrew R. Levenbaum and Paul P. Stewart, respectively.

5.2 SITE SECURITY

Site access will be controlled by a steel construction fence and gated entryway.

5.3 WORK HOURS

The hours for operation of remedial construction will be from 7am to 6pm. These hours conform to the New York City Department of Buildings construction code requirements.

5.4 CONSTRUCTION HEALTH AND SAFETY PLAN

The Health and Safety Plan is included in Appendix 4. The Site Safety Coordinator will be Yisong Yang. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, including 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and be required to sign an HASP acknowledgment. Site-specific training will be provided to field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the HASP. That document will define the specific project contacts for use in case of emergency.

5.5 COMMUNITY AIR MONITORING PLAN

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed 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, for instance, will 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. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed 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. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion 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.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate

monitoring will 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 will 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.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

5.6 AGENCY APPROVALS

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

5.7 SITE PREPARATION

Pre-Construction Meeting

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed incompliance with applicable laws and regulations to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Dewatering

Dewatering would be required in order to excavate the contaminated soil and fill material below the saturated zone or water table (expected to be ten to twelve feet below grade). Dewatering for this site would require a pumping system, settling tanks, possibly a treatment system, and the appropriate NYCDEP permits for discharged the groundwater into the sewer system.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations.

Stabilized Construction Entrance

Steps will be taken to ensure that trucks departing the site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

Truck Inspection Station

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the NYC VCP Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and potable water will be utilized for the removal of soil from vehicles and equipment, as necessary.

Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; lose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and

generators will be removed from holes, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, haybales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will by collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Storm-water control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If onsite petroleum spills are identified, a qualified environmental

professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362. If the source of the spill is ongoing and can be identified, it should be stopped it this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website (www.nyc.gov/oer) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

5.8 TRAFFIC CONTROL

Drivers of trucks leaving the NYC VCP Site with soil/fill will be instructed to proceed without stopping in the vicinity of the site to prevent neighborhood impacts. The planned route on local roads for trucks leaving the site is shown in Figure 11.

5.9 DEMOBILIZATION

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (*e.g.*, soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

5.10 REPORTING AND RECORD KEEPING

Daily Reports

Daily reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary

mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

Record Keeping and Photo-Documentation

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

5.11 COMPLAINT MANAGEMENT

All complaints from citizens will be promptly reported to OER. Complaints will be addressed and outcomes will also be reported to OER in daily reports. Notices to OER will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

5.12 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

All changes to the RAWP will be reported to the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and
- Determination that the remedial action with the deviation(s) is protective of public health and the environment.

5.13 DATA USABILITY SUMMARY REPORT

The primary objective of a Data Usability Summary Report (DUSR) is to determine whether or not data meets the site specific criteria for data quality and data use. The DUSR provides an evaluation of analytical data without third party data validation. The DUSR for post-remedial samples collected during implementation of this RAWP will be included in the Remedial Action Report (RAR).

6.0 REMEDIAL ACTION REPORT

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- As-built drawings for all constructed remedial elements, required certifications, manifests and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan (if Track 1 is not achieved);
- Description of any changes in the remedial action from the elements provided in this RAWP and associated design documents;
- Tabular summary of all end point sampling results and all material characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action and DUSR;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including a map showing source areas;
- Account of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material.
- Account of the origin and required chemical quality testing for material imported onto the Site.
- Recorded Declaration of Covenants and Restrictions.

- Continue registration of the property with an E-Designation by the NYC Department of Buildings.
- Reports and supporting material will be submitted in digital form.

Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, _____, am currently a professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the Site name Site Site number.

I, _____, am a qualified Environmental Professional. I had primary direct responsibility for implementation remedial program for the Site name Site Site number . (Optional)

I certify that the OER-approved Remedial Action Work Plan dated month day year and Stipulations in a letter dated month day, year; if any were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

7.0 SCHEDULE

The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a 24 month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	1	1
Remedial Excavation	2	24
Demobilization	26	2
Submit Remedial Action Report		

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8

FIGURE 9

FIGURE 10

FIGURE 11

Tables

APPENDIX 1

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Queens Bridgeview Tower LLC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Queens Bridgeview Tower LLC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Alysha Alfieri, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 788-8841

Project Contact List. OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The

Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at brownfields@cityhall.nyc.gov.

Repositories. A document repository is maintained in the nearest public library that maintains evening and weekend hours. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project. Queens Bridgeview Tower LLC will inspect the repositories to ensure that they are fully populated with project information. The repository for this project is:

Queens Library at Long Island City

37-44 21st Street

Queens, NY 11101

718-752-3700

Monday	9:00 am – 8:00 pm
Tuesday	1:00 – 6:00 pm
Wednesday	10:00 am – 6:00 pm
Thursday	12:00 – 8:00 pm
Friday	10:00 am – 6:00 pm
Saturday	10:00 am – 5:30 pm
Sunday	Closed

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. Queens Bridgeview Tower LLC is required to identify whether there are specific issues of concern to stakeholders proximate to the project site. Such issues include but are not limited to interests of Environmental Justice communities. This section should list any site-specific issues of public concern and the method that they will be used resolved them. If needed, contact OER for additional guidance on how to identify issues of public concern. .

Public Notice and Public Comment. Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Queens Bridgeview Tower LLC, reviewed and approved by OER prior to distribution and mailed by Queens Bridgeview Tower LLC. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones. Public notice and public comment activities occur at several steps during a typical NYC VCP project. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.**

  Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides

details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.

- **Public Notice announcing the approval of the RAWP and the start of remediation**

  Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.**

Appendix 2

Sustainability statement

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials. Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will be reported.

Conversion to Clean Fuels. Use of clean fuel improves NYC's air quality by reducing harmful emissions.

An estimate of the volume of clean fuels used during remedial activities will be quantified and reported in the RAR.

Recontamination Control. Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later or impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site.

An estimate of the area of the Site that utilizes recontamination controls under this plan will be reported in the RAR in square feet.

Storm-water Retention. Storm-water retention improves water quality by lowering the rate of combined storm-water and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters.

An estimate of the enhanced storm-water retention capability of the redevelopment project will be included in the RAR.

Linkage with Green Building. Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use.

The number of Green Buildings that are associated with this brownfield redevelopment property will be reported in the RAR. The total square footage of green building space created as a function of this brownfield redevelopment will be quantified for residential, commercial and industrial/manufacturing uses.

Paperless Brownfield Cleanup Program. Queens Bridgeview Tower LLC is participating in OER's Paperless Brownfield Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program. Queens Bridgeview Tower LLC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

Trees and Plantings. Trees and other plantings provide habitat and add to NYC's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance.

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APPENDIX 3

SOIL/MATERIALS MANAGEMENT PLAN

1.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

1.2 STOCKPILE METHODS

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 CHARACTERIZATION OF EXCAVATED MATERIALS

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

1.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site;
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 OFF-SITE MATERIALS TRANSPORT

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

Outbound truck transport routes are show in Figure 11. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 MATERIALS DISPOSAL OFF-SITE

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Queens, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the RAR.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization

sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

1.7 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. The SCOs for on-Site reuse are Track 1 Unrestricted Use SCOs **or** Track 2 Restricted/Restricted Residential/Commercial/Industrial as modified by the Track 4 Site-Specific SCOs listed Section 4.2. 'Reuse on-Site' means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed. No reused materials are anticipated as part of the property development.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 DEMARCATION

After completion of hotspot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the

remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The only backfill on the site will be restricted to the area of the future-parking ramp. It will require approximately 179 tons of imported controlled fill.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence

that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the RAR. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

1.10 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department

of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

1.12 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings

will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

1.13 ODOR, DUST AND NUISANCE CONTROL

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying the Remedial Action Report.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying the Remedial Action Report.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during Site clearing and grubbing, and during the remedial program, as necessary, to prevent nuisances.

APPENDIX 4

HEALTH AND SAFETY PLAN

Table 1

Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8260
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-1 (0-2) 3/12/15	SB-2 (0-2) 3/4/15	SB-2 (8-10) 3/4/15	SB-2 (12-14) 3/4/15	SB-3 (0-2) 3/3/15	SB-3 (8-10) 3/3/15
1,1,1,2-Tetrachloroethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1,1-Trichloroethane	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1,2,2-Tetrachloroethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1,2-Trichloroethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1-Dichloroethane	26,000	240,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,1-Dichloroethene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2,4-Trichlorobenzene	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2,4-Trimethylbenzene	5,200	19,000	<2.4	**87,000**	<2,900	**160,000**	**13**	<2.3
1,2-Dibromo-3-chloropropane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2-Dibromoethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2-Dichlorobenzene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2-Dichloroethane	3,100	30,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,2-Dichloropropane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,3,5-Trimethylbenzene	5,200	19,000	<2.4	**31,000**	<2,900	**53,000**	**13**	<2.3
1,3-Dichlorobenzene	49,000	280,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,4-Dichlorobenzene	13,000	130,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
1,4-Dioxane	1,300	13,000	<47	<68,000	<57,000	<56,000	<61	<46
Cyclohexane	NS	NS	<2.4	**44,000**	**13,000**	<2,800	**120**	**9.4**
2-Butanone	100,000	500,000	**3.1**	<3,400	<2,900	<2,800	**44**	<2.3
2-Hexanone	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
4-Methyl-2-pentanone	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Acetone	100,000	500,000	<4.7	<6,800	**7,000**	<5,600	**140**	**30**
Acrolein	NS	NS	<4.7	<6,800	<5,700	<5,600	<6.1	<4.6
Acrylonitrile	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Benzene	4,800	44,000	<2.4	**5,200**	<2,900	<2,800	**69**	**53**
Bromodichloromethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Bromoform	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Bromomethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Carbon disulfide	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Carbon tetrachloride	2,400	22,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Chlorobenzene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Chloroethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Chloroform	49,000	350,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Chloromethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
cis-1,2-Dichloroethene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
cis-1,3-Dichloropropene	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Dibromochloromethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Dibromomethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Dichlorodifluoromethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Ethylbenzene	41,000	390,000	<2.4	**110,000**	**32,000**	**34,000**	**15**	<2.3
Methylcyclohexane	NS	NS	<2.4	**65,000**	**16,000**	**51,000**	**140**	**7.7**
Hexachlorobutadine	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Isopropylbenzene	NS	NS	<2.4	**20,000**	**6,700**	**10,000**	**7**	<2.3
Methyl acetate	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Methyl tert-butyl ether	100,000	500,000	<2.4	<3,400	<2,900	<2,800	**18**	**210**
Methylene chloride	100,000	500,000	**4.7**	**47,000**	**43,000**	**46,000**	**29**	**26**
n-Butylbenzene	NS	NS	<2.4	**29,000**	**8,800**	**16,000**	<3.0	<2.3
1,2,3-Trichlorobenzene	NS	NS	<2.3	<3,400	<2,900	<2,800	<2.3	<2.3
n-Propylbenzene	NS	NS	<2.4	**63,000**	**20,000**	**28,000**	**3.1**	<2.3
o-Xylene	NS	NS	<2.4	<3,400	<2,900	**33,000**	**8.0**	<2.3
p- & m- Xylenes	NS	NS	<4.7	**46,000**	<5,700	**150,000**	**32**	<4.6
p-Isopropyltoluene	NS	NS	<2.4	<3,400	<2,900	**4,300**	**6.0**	<2.3
sec-Butylbenzene	NS	NS	<2.4	**7,500**	**4,600**	**5,900**	<3.0	<2.3
Styrene	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
tert-Butyl alcohol (TBA)	NS	NS	**20**	<3,400	<2,900	<2,800	<3.0	**2,100**
tert-Butylbenzene	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Tetrachloroethene	19,000	150,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Toluene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	**7.6**	<2.3
trans-1,2-Dichloroethene	100,000	500,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
trans-1,3-Dichloropropene	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Trichloroethene	21,000	200,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Trichlorofluoromethane	NS	NS	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Vinyl chloride	900	13,000	<2.4	<3,400	<2,900	<2,800	<3.0	<2.3
Xylenes (Total)	100,000	500,000	<7.1	**46,000**	<8,600	**180,000**	**40**	<6.9

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 1 continued.

Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8260
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-3 (12-14) 3/3/15	SB-4 (0-2) 3/4/15	SB-4 (8-10) 3/4/15	SB-4 (12-14) 3/4/15	SB-5 (0-2) 3/3/15	SB-5 (8-10) 3/3/15
1,1,1,2-Tetrachloroethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1,1-Trichloroethane	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1,2,2-Tetrachloroethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1,2-Trichloroethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1-Dichloroethane	26,000	240,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,1-Dichloroethene	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2,4-Trichlorobenzene	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2,4-Trimethylbenzene	5,200	19,000	**1,800**	**8.5**	**9,000**	**140,000**	**17**	**98**
1,2-Dibromo-3-chloropropane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2-Dibromoethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2-Dichlorobenzene	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2-Dichloroethane	3,100	30,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,2-Dichloropropane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,3,5-Trimethylbenzene	5,200	19,000	**170**	**4.7**	**3,000**	**44,000**	**9.1**	**28**
1,3-Dichlorobenzene	49,000	280,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,4-Dichlorobenzene	13,000	130,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
1,4-Dioxane	1,300	13,000	<55	<45	<42	<10,000	<65	<49
Cyclohexane	NS	NS	**130**	**21**	**1,900**	**65,000**	**26**	**2.7**
2-Butanone	100,000	500,000	<2.7	**10**	<2.1	<510	<3.2	**6.6**
2-Hexanone	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
4-Methyl-2-pentanone	NS	NS	**29**	<2.3	<2.1	<510	<3.2	<2.5
Acetone	100,000	500,000	<5.5	**25**	<4.2	<1,000	**18**	**44**
Acrolein	NS	NS	<5.5	<4.5	<4.2	<1,000	<6.5	<4.9
Acrylonitrile	NS	NS	<2.7	<2.3	<2.1	<1,000	<3.2	<2.5
Benzene	4,800	44,000	**60**	<2.3	**770**	**15,000**	**9.1**	**57**
Bromodichloromethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Bromoform	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Bromomethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Carbon disulfide	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Carbon tetrachloride	2,400	22,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Chlorobenzene	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Chloroethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Chloroform	49,000	350,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Chloromethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
cis-1,2-Dichloroethene	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
cis-1,3-Dichloropropene	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Dibromochloromethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Dibromomethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Dichlorodifluoromethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Ethylbenzene	41,000	390,000	**250**	**2.7**	**2,900**	**53,000**	**22**	**32**
Methylcyclohexane	NS	NS	**1,500**	**19**	**2,200**	**58,000**	**31**	<2.5
Hexachlorobutadine	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Isopropylbenzene	NS	NS	**49**	<2.3	**98**	**10,000**	**3.5**	**4.2**
Methyl acetate	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Methyl tert-butyl ether	100,000	500,000	**4.2**	<2.3	**230**	**1,100**	<3.2	**5,600**
Methylene chloride	100,000	500,000	**23**	**26**	**19**	**4,700**	<6.5	<4.9
n-Butylbenzene	NS	NS	<2.7	<2.3	<2.1	**17,000**	<3.2	<2.5
1,2,3-Trichlorobenzene	NS	NS	<2.3	<2.3	<2.1	<510	<3.2	<2.5
n-Propylbenzene	NS	NS	**75**	<2.3	**1,300**	**26,000**	<3.2	**9.6**
o-Xylene	NS	NS	**17**	**2.4**	**2,100**	**43,000**	**3.6**	**35**
p- & m- Xylenes	NS	NS	**310**	**9.6**	**8,900**	**190,000**	**12**	**140**
p-Isopropyltoluene	NS	NS	**9.3**	<2.3	**23**	**5,400**	**64**	**3.7**
sec-Butylbenzene	NS	NS	<2.7	<2.3	<2.1	**6,500**	<3.2	<2.5
Styrene	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
tert-Butyl alcohol (TBA)	NS	NS	**410**	<2.3	**230**	<510	<3.2	**210**
tert-Butylbenzene	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Tetrachloroethene	19,000	150,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Toluene	100,000	500,000	**5.8**	<2.3	**100**	**8,800**	**6.2**	**21**
trans-1,2-Dichloroethene	100,000	500,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
trans-1,3-Dichloropropene	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Trichloroethene	21,000	200,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Trichlorofluoromethane	NS	NS	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Vinyl chloride	900	13,000	<2.7	<2.3	<2.1	<510	<3.2	<2.5
Xylenes (Total)	100,000	500,000	**330**	**12**	**11,000**	**230,000**	**76**	**170**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 1 continued.

Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8260
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-5 (12-14) 3/3/15	SB-6 (0-2) 3/3/15	SB-6 (8-10) 3/3/15	SB-6 (12-14) 3/3/15	SB-7 (0-2) 3/15/15	SB-7 (8-10) 3/12/15
1,1,1,2-Tetrachloroethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1,1-Trichloroethane	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1,2,2-Tetrachloroethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1,2-Trichloroethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1-Dichloroethane	26,000	240,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,1-Dichloroethene	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2,4-Trichlorobenzene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2,4-Trimethylbenzene	5,200	19,000	**270,000**	<2.4	**37**	**540,000**	<3.1	**57**
1,2-Dibromo-3-chloropropane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2-Dibromoethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2-Dichlorobenzene	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2-Dichloroethane	3,100	30,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,2-Dichloropropane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,3,5-Trimethylbenzene	5,200	19,000	**84,000**	<2.4	**16**	**180,000**	<3.1	**16**
1,3-Dichlorobenzene	49,000	280,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,4-Dichlorobenzene	13,000	130,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
1,4-Dioxane	1,300	13,000	<9,600	<48	<52	<54,000	<62	<55
Cyclohexane	NS	NS	**57,000**	<2.4	**9.7**	**66,000**	<3.1	<2.8
2-Butanone	100,000	500,000	<480	<2.4	**5.4**	<2,700	<3.1	**5.6**
2-Hexanone	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
4-Methyl-2-pentanone	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Acetone	100,000	500,000	<960	**7.8**	**31**	<5,400	<6.2	**39**
Acrolein	NS	NS	<960	<4.8	<5.2	<5,400	<6.2	<5.5
Acrylonitrile	NS	NS	<960	<2.4	<2.6	<5,400	<3.1	<2.8
Benzene	4,800	44,000	**18,000**	<2.4	**53**	**7,300**	<3.1	<2.8
Bromodichloromethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Bromoform	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Bromomethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Carbon disulfide	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Carbon tetrachloride	2,400	22,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Chlorobenzene	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Chloroethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Chloroform	49,000	350,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Chloromethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
cis-1,2-Dichloroethene	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
cis-1,3-Dichloropropene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Dibromochloromethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Dibromomethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Dichlorodifluoromethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Ethylbenzene	41,000	390,000	**92,000**	<2.4	**23**	**170,000**	<3.1	**4.2**
Methylcyclohexane	NS	NS	**65,000**	<2.4	**8.4**	**110,000**	<3.1	<2.8
Hexachlorobutadine	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Isopropylbenzene	NS	NS	**15,000**	<2.4	**3.5**	**31,000**	<3.1	<2.8
Methyl acetate	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Methyl tert-butyl ether	100,000	500,000	**4,200**	**50**	**530**	<2,700	<3.1	**680**
Methylene chloride	100,000	500,000	<960	<4.8	<5.2	<2,700	<6.2	<5.5
n-Butylbenzene	NS	NS	<480	<2.4	<2.6	**29,000**	<3.1	<2.8
1,2,3-Trichlorobenzene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
n-Propylbenzene	NS	NS	**41,000**	<2.4	**5.3**	**80,000**	<3.1	**3.1**
o-Xylene	NS	NS	**19,000**	<2.4	**7.3**	**160,000**	<3.1	**15**
p- & m- Xylenes	NS	NS	**360,000**	<4.8	**88**	**750,000**	<6.2	**26**
p-Isopropyltoluene	NS	NS	**7,100**	<2.4	<2.6	**13,000**	<3.1	<2.8
sec-Butylbenzene	NS	NS	**8,400**	<2.4	<2.6	**16,000**	<3.1	<2.8
Styrene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
tert-Butyl alcohol (TBA)	NS	NS	<480	<2.4	**32**	<2,700	<3.1	**85**
tert-Butylbenzene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Tetrachloroethene	19,000	150,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Toluene	100,000	500,000	**5,400**	<2.4	**4.0**	**17,000**	<3.1	**5.0**
trans-1,2-Dichloroethene	100,000	500,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
trans-1,3-Dichloropropene	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Trichloroethene	21,000	200,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Trichlorofluoromethane	NS	NS	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Vinyl chloride	900	13,000	<480	<2.4	<2.6	<2,700	<3.1	<2.8
Xylenes (Total)	100,000	500,000	**370,000**	<7.2	**96**	**910,000**	<9.2	**41**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 1 continued.

Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8260
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-7 (12-14) 3/12/15	SB-8 (0-2) 3/12/15	SB-8 (8-10) 3/12/15	SB-8 (12-14) 3/12/15
1,1,1,2-Tetrachloroethane	NS	NS	<330	<3.6	<2.8	<230
1,1,1-Trichloroethane	100,000	500,000	<330	<3.6	<2.8	<230
1,1,2,2-Tetrachloroethane	NS	NS	<330	<3.6	<2.8	<230
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	<330	<3.6	<2.8	<230
1,1,2-Trichloroethane	NS	NS	<330	<3.6	<2.8	<230
1,1-Dichloroethane	26,000	240,000	<330	<3.6	<2.8	<230
1,1-Dichloroethene	100,000	500,000	<330	<3.6	<2.8	<230
1,2,4-Trichlorobenzene	NS	NS	<330	<3.6	<2.8	<230
1,2,4-Trimethylbenzene	5,200	19,000	**23,000**	<3.6	<2.8	**11,000**
1,2-Dibromo-3-chloropropane	NS	NS	<330	<3.6	<2.8	<230
1,2-Dibromoethane	NS	NS	<330	<3.6	<2.8	<230
1,2-Dichlorobenzene	100,000	500,000	<330	<3.6	<2.8	<230
1,2-Dichloroethane	3,100	30,000	<330	<3.6	<2.8	<230
1,2-Dichloropropane	NS	NS	<330	<3.6	<2.8	<230
1,3,5-Trimethylbenzene	5,200	19,000	**7,200**	<3.6	<2.8	**3,700**
1,3-Dichlorobenzene	49,000	280,000	<330	<3.6	<2.8	<230
1,4-Dichlorobenzene	13,000	130,000	<330	<3.6	<2.8	<230
1,4-Dioxane	1,300	13,000	<6,600	<72	<56	<4,600
Cyclohexane	NS	NS	**1,400**	<3.6	<2.8	<230
2-Butanone	100,000	500,000	<330	<3.6	**4.2**	<230
2-Hexanone	NS	NS	<330	<3.6	<2.8	<230
4-Methyl-2-pentanone	NS	NS	<330	<3.6	<2.8	<230
Acetone	100,000	500,000	<660	<7.2	**46**	<460
Acrolein	NS	NS	<660	<7.2	<5.6	<460
Acrylonitrile	NS	NS	<660	<3.6	<2.8	<460
Benzene	4,800	44,000	<330	<3.6	<2.8	**260**
Bromodichloromethane	NS	NS	<330	<3.6	<2.8	<230
Bromoform	NS	NS	<330	<3.6	<2.8	<230
Bromomethane	NS	NS	<330	<3.6	<2.8	<230
Carbon disulfide	NS	NS	<330	<3.6	<2.8	**360**
Carbon tetrachloride	2,400	22,000	<330	<3.6	<2.8	<230
Chlorobenzene	100,000	500,000	<330	<3.6	<2.8	<230
Chloroethane	NS	NS	<330	<3.6	<2.8	<230
Chloroform	49,000	350,000	<330	<3.6	<2.8	<230
Chloromethane	NS	NS	<330	<3.6	<2.8	<230
cis-1,2-Dichloroethene	100,000	500,000	<330	<3.6	<2.8	<230
cis-1,3-Dichloropropene	NS	NS	<330	<3.6	<2.8	<230
Dibromochloromethane	NS	NS	<330	<3.6	<2.8	<230
Dibromomethane	NS	NS	<330	<3.6	<2.8	<230
Dichlorodifluoromethane	NS	NS	<330	<3.6	<2.8	<230
Ethylbenzene	41,000	390,000	**6,700**	<3.6	<2.8	**3,500**
Methylcyclohexane	NS	NS	**2,100**	<3.6	<2.8	**1,900**
Hexachlorobutadine	NS	NS	<330	<3.6	<2.8	<230
Isopropylbenzene	NS	NS	**1,100**	<3.6	<2.8	**550**
Methyl acetate	NS	NS	<330	<3.6	<2.8	<230
Methyl tert-butyl ether	100,000	500,000	**4,700**	<3.6	<2.8	**1,100**
Methylene chloride	100,000	500,000	<660	<7.2	<5.6	<460
n-Butylbenzene	NS	NS	**1,000**	<3.6	<2.8	**1,000**
1,2,3-Trichlorobenzene	NS	NS	<330	<3.6	<2.8	<230
n-Propylbenzene	NS	NS	**3,400**	<3.6	<2.8	**1,800**
o-Xylene	NS	NS	**11,000**	<3.6	<2.8	**5,700**
p- & m- Xylenes	NS	NS	**27,000**	<7.2	<5.6	**140,000**
p-Isopropyltoluene	NS	NS	**470**	<3.6	<2.8	<230
sec-Butylbenzene	NS	NS	**580**	<3.6	<2.8	**330**
Styrene	NS	NS	<330	<3.6	<2.8	<230
tert-Butyl alcohol (TBA)	NS	NS	<330	<3.6	<2.8	<230
tert-Butylbenzene	NS	NS	<330	<3.6	<2.8	<230
Tetrachloroethene	19,000	150,000	<330	<3.6	<2.8	<230
Toluene	100,000	500,000	**2,300**	<3.6	<2.8	**3,400**
trans-1,2-Dichloroethene	100,000	500,000	<330	<3.6	<2.8	<230
trans-1,3-Dichloropropene	NS	NS	<330	<3.6	<2.8	<230
Trichloroethene	21,000	200,000	<330	<3.6	<2.8	<230
Trichlorofluoromethane	NS	NS	<330	<3.6	<2.8	<230
Vinyl chloride	900	13,000	<330	<3.6	<2.8	<230
Xylenes (Total)	100,000	500,000	**39,000**	<9.2	<9.2	**20,000**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 3

Semi Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8270
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-1 (0-2) 3/12/15	SB-2 (0-2) 3/4/15	SB-2 (8-10) 3/4/15	SB-2 (12-14) 3/4/15	SB-3 (0-2) 3/3/15	SB-3 (8-10) 3/3/15
Acenaphthene	100,000	500,000	**356**	**1,160**	<24.9	**693**	<48.3	<24.1
Acenaphthylene	100,000	500,000	**143**	<52.6	<24.9	<26.5	<48.3	<24.1
Acetophenone	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Aniline	10,000	500,000	<185	<210	<99.5	<106	<193	<96.2
Anthracene	100,000	500,000	**1,250**	**1,040**	**1,590**	**49.4**	<48.3	<24.1
Atrazine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Benzaldehyde	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Benzidine	NS	NS	<185	<210	<99.5	<106	<193	<96.2
Benzo(a)anthracene	1,000	5,600	**2,690**	**358**	**113**	**49.7**	**235**	<24.1
Benzo(a)pyrene	1,000	1,000	**886**	**166**	<24.9	<26.5	**101**	<24.1
Benzo(b)fluoranthene	1,000	5,600	**813**	**166**	<24.9	<26.5	**80.2**	<24.1
Benzo(g,h,i)perylene	100,000	500,000	**909**	**71**	<24.9	<26.5	**109**	<24.1
Benzoic acid	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Benzo(k)fluoranthene	3,900	56,000	**1,150**	**191**	<24.9	<26.5	**123**	<24.1
Benzyl alcohol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Benzyl butyl phthalate	NS	NS	**419**	<52.6	<24.9	<26.5	<48.3	<24.1
1,1'-Biphenyl	NS	NS	<46.3	**1,310**	<24.9	**1,360**	<48.3	<24.1
4-Bromophenyl-phenylether	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Caprolactam	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
Carbazole	NS	NS	**423**	<52.6	<24.9	<26.5	<48.3	<24.1
4-Chloro-3-methylphenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
4-Chloroaniline	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Bis(2-chloroethoxy)methane	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Bis(2-chloroethyl)ether	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Bis(2-chloroisopropyl)ether	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2-Chloronaphthalene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2-Chlorophenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
4-Chlorophenyl phenyl ether	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Chrysene	3,900	56,000	**2,500**	**443**	**224**	**90.7**	**267**	<24.1
Dibenzo(a,h)anthracene	330	560	**511**	<52.6	<24.9	<26.5	<48.3	<24.1
Dibenzofuran	NS	NS	**387**	<52.6	<24.9	<26.5	<48.3	<24.1
Di-n-butyl phthalate	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
1,2-Dichlorobenzene	100,000	500,000	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
1,3-Dichlorobenzene	49,000	280,000	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
1,4-Dichlorobenzene	13,000	130,000	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
3,3´-Dichlorobenzidine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2,4-Dichlorophenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Diethyl phthalate	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2,4-Dimethylphenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Dimethyl phthalate	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
4,6-Dinitro-2-methylphenol	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
2,4-Dinitrophenol	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
2,4-Dinitrotoluene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2,6-Dinitrotoluene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Di-n-octyl phthalate	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
1,2-Diphenylhydrazine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Bis(2-ethylhexyl)phthalate	NS	NS	**390**	<52.6	<24.9	<26.5	<48.3	<24.1
Fluoranthene	100,000	500,000	**9,030**	**1,090**	**726**	**199**	**447**	<24.1
Fluorene	100,000	500,000	**710**	**2,970**	**5,680**	**1,300**	<48.3	<24.1
Hexachlorobenzene	12	60	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Hexachlorobutadiene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Hexachlorocyclopentadiene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Hexachloroethane	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Indeno(1,2,3-c,d)pyrene	500	5,600	**1,020**	<52.6	<24.9	<26.5	**94.8**	<24.1
Isophorone	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2-Methylnaphthalene	NS	NS	<46.3	**112,000**	**35,300**	**24,300**	<48.3	<24.1
2-Methylphenol	100,000	500,000	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
3- & 4-Methylphenols	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Naphthalene	100,000	500,000	**93.9**	**118,000**	**15,700**	**11,900**	<48.3	<24.1
4-Nitroaniline	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
2-Nitroaniline	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
3-Nitroaniline	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
Nitrobenzene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2-Nitrophenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
4-Nitrophenol	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
N-Nitrosodi-n-propylamine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
N-Nitrosodiumethylamine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
N-Nitrosodiphenylamine	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Pentachlorophenol	6,700	6,700	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Phenanthrene	100,000	500,000	**7,030**	**7,970**	**10,800**	**3,210**	**214**	<24.1
Phenol	100,000	500,000	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
Pyrene	100,000	500,000	**7,200**	**1,000**	**1,070**	**314**	**616**	<24.1
1,2,4,5-Tetrachlorobenzene	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
2,3,4,6-Tetrachlorophenol	NS	NS	<92.5	<105	<49.7	<52.8	<96.4	<48.1
1,2,4-Tricholobenzene	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2,4,6-Trichlorophenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1
2,4,5-Trichlorophenol	NS	NS	<46.3	<52.6	<24.9	<26.5	<48.3	<24.1

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 3 continued.

Semi Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8270
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-3 (12-14) 3/3/15	SB-4 (0-2) 3/4/15	SB-4 (8-10) 3/4/15	SB-4 (12-14) 3/4/15	SB-5 (0-2) 3/3/15	SB-5 (8-10) 3/3/15
Acenaphthene	100,000	500,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Acenaphthylene	100,000	500,000	<28.2	<124	<25.1	<24.1	**448**	<22.8
Acetophenone	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Aniline	10,000	500,000	<113	<494	<100	<96.3	<183	<90.9
Anthracene	100,000	500,000	<28.2	<124	<25.1	**1,180**	**156**	<22.8
Atrazine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Benzaldehyde	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Benzidine	NS	NS	<113	<494	<100	<96.3	<183	<90.9
Benzo(a)anthracene	1,000	5,600	<28.2	<124	<25.1	**73.8**	**2,750**	<22.8
Benzo(a)pyrene	1,000	1,000	<28.2	<124	<25.1	<24.1	**1,210**	<22.8
Benzo(b)fluoranthene	1,000	5,600	<28.2	<124	<25.1	<24.1	**1,150**	<22.8
Benzo(g,h,i)perylene	100,000	500,000	<28.2	<124	<25.1	<24.1	**816**	<22.8
Benzoic acid	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Benzo(k)fluoranthene	3,900	56,000	<28.2	<124	<25.1	<24.1	**1,460**	<22.8
Benzyl alcohol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Benzyl butyl phthalate	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
1,1'-Biphenyl	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
4-Bromophenyl-phenylether	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Caprolactam	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
Carbazole	NS	NS	<28.2	<124	<25.1	<24.1	**62.0**	<22.8
4-Chloro-3-methylphenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
4-Chloroaniline	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Bis(2-chloroethoxy)methane	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Bis(2-chloroethyl)ether	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Bis(2-chloroisopropyl)ether	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2-Chloronaphthalene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2-Chlorophenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
4-Chlorophenyl phenyl ether	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Chrysene	3,900	56,000	<28.2	<124	<25.1	**120**	**2,660**	<22.8
Dibenzo(a,h)anthracene	330	560	<28.2	<124	<25.1	<24.1	**292**	<22.8
Dibenzofuran	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Di-n-butyl phthalate	NS	NS	<28.2	<124	<25.1	<24.1	**126**	<22.8
1,2-Dichlorobenzene	100,000	500,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
1,3-Dichlorobenzene	49,000	280,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
1,4-Dichlorobenzene	13,000	130,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
3,3´-Dichlorobenzidine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2,4-Dichlorophenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Diethyl phthalate	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2,4-Dimethylphenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Dimethyl phthalate	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
4,6-Dinitro-2-methylphenol	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
2,4-Dinitrophenol	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
2,4-Dinitrotoluene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2,6-Dinitrotoluene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Di-n-octyl phthalate	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
1,2-Diphenylhydrazine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Bis(2-ethylhexyl)phthalate	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Fluoranthene	100,000	500,000	<28.2	<124	**38.8**	**515**	**7,700**	<22.8
Fluorene	100,000	500,000	<28.2	<124	<25.1	<24.1	**54.7**	<22.8
Hexachlorobenzene	12	60	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Hexachlorobutadiene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Hexachlorocyclopentadiene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Hexachloroethane	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Indeno(1,2,3-c,d)pyrene	500	5,600	<28.2	<124	<25.1	<24.1	**852**	<22.8
Isophorone	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2-Methylnaphthalene	NS	NS	**53.5**	<124	**305**	**38,600**	**122**	53.5
2-Methylphenol	100,000	500,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
3- & 4-Methylphenols	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Naphthalene	100,000	500,000	<28.2	<124	**331**	**21,800**	**72.9**	<22.8
4-Nitroaniline	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
2-Nitroaniline	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
3-Nitroaniline	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
Nitrobenzene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2-Nitrophenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
4-Nitrophenol	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
N-Nitrosodi-n-propylamine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
N-Nitrosodiumethylamine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
N-Nitrosodiphenylamine	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Pentachlorophenol	6,700	6,700	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Phenanthrene	100,000	500,000	<28.2	<124	**66.7**	**8,630**	**510**	<22.8
Phenol	100,000	500,000	<28.2	<124	<25.1	<24.1	<45.7	<22.8
Pyrene	100,000	500,000	<28.2	<124	**29.6**	**663**	**8,670**	<22.8
1,2,4,5-Tetrachlorobenzene	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
2,3,4,6-Tetrachlorophenol	NS	NS	<56.2	<247	<50.0	<48.1	<91.2	<45.4
1,2,4-Tricholobenzene	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2,4,6-Trichlorophenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8
2,4,5-Trichlorophenol	NS	NS	<28.2	<124	<25.1	<24.1	<45.7	<22.8

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 3 continued.

Semi Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8270
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-5 (12-14) 3/3/15	SB-6 (0-2) 3/3/15	SB-6 (8-10) 3/3/15	SB-6 (12-14) 3/3/15	SB-7 (0-2) 3/15/15	SB-7 (8-10) 3/12/15
Acenaphthene	100,000	500,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Acenaphthylene	100,000	500,000	<22.9	**238**	<24.4	<22.6	**169**	<21.4
Acetophenone	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Aniline	10,000	500,000	<91.4	<190	<97.4	<90.4	<182	<85.4
Anthracene	100,000	500,000	**1,120**	**108**	<24.4	**1,200**	**122**	<21.4
Atrazine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Benzaldehyde	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Benzidine	NS	NS	<91.4	<190	<97.4	<90.4	<182	<85.4
Benzo(a)anthracene	1,000	5,600	**78.1**	**523**	<24.4	**88.4**	**1,270**	<21.4
Benzo(a)pyrene	1,000	1,000	<22.9	**366**	<24.4	<22.6	**1,140**	<21.4
Benzo(b)fluoranthene	1,000	5,600	<22.9	**446**	<24.4	<22.6	**835**	<21.4
Benzo(g,h,i)perylene	100,000	500,000	<22.9	**927**	<24.4	<22.6	**687**	<21.4
Benzoic acid	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Benzo(k)fluoranthene	3,900	56,000	<22.9	**271**	<24.4	<22.6	**1,240**	<21.4
Benzyl alcohol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Benzyl butyl phthalate	NS	NS	<22.9	<47.5	**32.3**	<22.6	<45.5	<21.4
1,1'-Biphenyl	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
4-Bromophenyl-phenylether	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Caprolactam	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
Carbazole	NS	NS	<22.9	**53.8**	<24.4	<22.6	**60.2**	<21.4
4-Chloro-3-methylphenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
4-Chloroaniline	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Bis(2-chloroethoxy)methane	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Bis(2-chloroethyl)ether	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Bis(2-chloroisopropyl)ether	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2-Chloronaphthalene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2-Chlorophenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
4-Chlorophenyl phenyl ether	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Chrysene	3,900	56,000	**140**	**693**	<24.4	**158**	**1,230**	<21.4
Dibenzo(a,h)anthracene	330	560	<22.9	**294**	<24.4	<22.6	**212**	<21.4
Dibenzofuran	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Di-n-butyl phthalate	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
1,2-Dichlorobenzene	100,000	500,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
1,3-Dichlorobenzene	49,000	280,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
1,4-Dichlorobenzene	13,000	130,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
3,3´-Dichlorobenzidine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2,4-Dichlorophenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Diethyl phthalate	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2,4-Dimethylphenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Dimethyl phthalate	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
4,6-Dinitro-2-methylphenol	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
2,4-Dinitrophenol	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
2,4-Dinitrotoluene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2,6-Dinitrotoluene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Di-n-octyl phthalate	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
1,2-Diphenylhydrazine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Bis(2-ethylhexyl)phthalate	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Fluoranthene	100,000	500,000	**666**	**570**	<24.4	**442**	**1,910**	<21.4
Fluorene	100,000	500,000	**4,380**	<47.5	<24.4	<22.6	<45.5	<21.4
Hexachlorobenzene	12	60	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Hexachlorobutadiene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Hexachlorocyclopentadiene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Hexachloroethane	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Indeno(1,2,3-c,d)pyrene	500	5,600	<22.9	**661**	<24.4	<22.6	**678**	<21.4
Isophorone	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2-Methylnaphthalene	NS	NS	**46,500**	**56.0**	<24.4	**25,400**	<45.5	53.5
2-Methylphenol	100,000	500,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
3- & 4-Methylphenols	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	**134**
Naphthalene	100,000	500,000	**27,400**	**55.3**	<24.4	**26,300**	<45.5	<21.4
4-Nitroaniline	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
2-Nitroaniline	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
3-Nitroaniline	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
Nitrobenzene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2-Nitrophenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
4-Nitrophenol	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
N-Nitrosodi-n-propylamine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
N-Nitrosodiumethylamine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
N-Nitrosodiphenylamine	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Pentachlorophenol	6,700	6,700	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Phenanthrene	100,000	500,000	**9,730**	**410**	<24.4	**10,600**	**562**	<21.4
Phenol	100,000	500,000	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
Pyrene	100,000	500,000	**811**	**1,780**	<24.4	**557**	**1,900**	<21.4
1,2,4,5-Tetrachlorobenzene	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
2,3,4,6-Tetrachlorophenol	NS	NS	<45.6	<94.7	<48.6	<45.2	<90.7	<42.7
1,2,4-Tricholobenzene	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2,4,6-Trichlorophenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4
2,4,5-Trichlorophenol	NS	NS	<22.9	<47.5	<24.4	<22.6	<45.5	<21.4

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 3 continued.

Semi Volatile Organic Compounds in Soil (ug/kg-dry)
EPA Method 8270
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-7 (12-14) 3/12/15	SB-8 (0-2) 3/12/15	SB-8 (8-10) 3/12/15	SB-8 (12-14) 3/12/15
Acenaphthene	100,000	500,000	<23.6	<47.2	<22.2	<214
Acenaphthylene	100,000	500,000	**32.0**	<47.2	<22.2	<214
Acetophenone	NS	NS	<23.6	<47.2	<22.2	<214
Aniline	10,000	500,000	<94.5	<189	<88.8	<854
Anthracene	100,000	500,000	**89.0**	**72.3**	<22.2	**460**
Atrazine	NS	NS	<23.6	<47.2	<22.2	<214
Benzaldehyde	NS	NS	<23.6	<47.2	<22.2	<214
Benzidine	NS	NS	<94.5	<189	<88.8	<854
Benzo(a)anthracene	1,000	5,600	<23.6	**277**	<22.2	<214
Benzo(a)pyrene	1,000	1,000	<23.6	**172**	<22.2	<214
Benzo(b)fluoranthene	1,000	5,600	<23.6	**161**	<22.2	<214
Benzo(g,h,i)perylene	100,000	500,000	<23.6	**122**	<22.2	<214
Benzoic acid	NS	NS	<23.6	<47.2	<22.2	<214
Benzo(k)fluoranthene	3,900	56,000	<23.6	**187**	<22.2	<214
Benzyl alcohol	NS	NS	<23.6	<47.2	<22.2	<214
Benzyl butyl phthalate	NS	NS	<23.6	<47.2	**32.3**	<214
1,1'-Biphenyl	NS	NS	<23.6	<47.2	<22.2	**1,550**
4-Bromophenyl-phenylether	NS	NS	<23.6	<47.2	<22.2	<214
Caprolactam	NS	NS	<47.2	<94.2	<44.3	<427
Carbazole	NS	NS	<23.6	<47.2	<22.2	<214
4-Chloro-3-methylphenol	NS	NS	<23.6	<47.2	<22.2	<214
4-Chloroaniline	NS	NS	<23.6	<47.2	<22.2	<214
Bis(2-chloroethoxy)methane	NS	NS	<23.6	<47.2	<22.2	<214
Bis(2-chloroethyl)ether	NS	NS	<23.6	<47.2	<22.2	<214
Bis(2-chloroisopropyl)ether	NS	NS	<23.6	<47.2	<22.2	<214
2-Chloronaphthalene	NS	NS	<23.6	<47.2	<22.2	<214
2-Chlorophenol	NS	NS	<23.6	<47.2	<22.2	<214
4-Chlorophenyl phenyl ether	NS	NS	<23.6	<47.2	<22.2	<214
Chrysene	3,900	56,000	<23.6	**321**	<22.2	<214
Dibenzo(a,h)anthracene	330	560	<23.6	**58.0**	<22.2	<214
Dibenzofuran	NS	NS	<23.6	<47.2	<22.2	<214
Di-n-butyl phthalate	NS	NS	<23.6	**110**	<22.2	<214
1,2-Dichlorobenzene	100,000	500,000	<23.6	<47.2	<22.2	<214
1,3-Dichlorobenzene	49,000	280,000	<23.6	<47.2	<22.2	<214
1,4-Dichlorobenzene	13,000	130,000	<23.6	<47.2	<22.2	<214
3,3´-Dichlorobenzidine	NS	NS	<23.6	<47.2	<22.2	<214
2,4-Dichlorophenol	NS	NS	<23.6	<47.2	<22.2	<214
Diethyl phthalate	NS	NS	<23.6	<47.2	<22.2	<214
2,4-Dimethylphenol	NS	NS	<23.6	<47.2	<22.2	<214
Dimethyl phthalate	NS	NS	<23.6	<47.2	<22.2	<214
4,6-Dinitro-2-methylphenol	NS	NS	<47.2	<94.2	<44.3	<427
2,4-Dinitrophenol	NS	NS	<47.2	<94.2	<44.3	<427
2,4-Dinitrotoluene	NS	NS	<23.6	<47.2	<22.2	<214
2,6-Dinitrotoluene	NS	NS	<23.6	<47.2	<22.2	<214
Di-n-octyl phthalate	NS	NS	<23.6	<47.2	<22.2	<214
1,2-Diphenylhydrazine	NS	NS	<23.6	<47.2	<22.2	<214
Bis(2-ethylhexyl)phthalate	NS	NS	<23.6	<47.2	<22.2	<214
Fluoranthene	100,000	500,000	**54.7**	**605**	<22.2	**239**
Fluorene	100,000	500,000	**236**	<47.2	<22.2	**1,630**
Hexachlorobenzene	12	60	<23.6	<47.2	<22.2	<214
Hexachlorobutadiene	NS	NS	<23.6	<47.2	<22.2	<214
Hexachlorocyclopentadiene	NS	NS	<23.6	<47.2	<22.2	<214
Hexachloroethane	NS	NS	<23.6	<47.2	<22.2	<214
Indeno(1,2,3-c,d)pyrene	500	5,600	<23.6	**116**	<22.2	<214
Isophorone	NS	NS	<23.6	<47.2	<22.2	<214
2-Methylnaphthalene	NS	NS	**1,720**	<47.2	<22.2	**15,800**
2-Methylphenol	100,000	500,000	<23.6	<47.2	<22.2	<214
3- & 4-Methylphenols	NS	NS	<23.6	<47.2	<22.2	<214
Naphthalene	100,000	500,000	**779**	<47.2	<22.2	**9,050**
4-Nitroaniline	NS	NS	<47.2	<94.2	<44.3	<427
2-Nitroaniline	NS	NS	<47.2	<94.2	<44.3	<427
3-Nitroaniline	NS	NS	<47.2	<94.2	<44.3	<427
Nitrobenzene	NS	NS	<23.6	<47.2	<22.2	<214
2-Nitrophenol	NS	NS	<23.6	<47.2	<22.2	<214
4-Nitrophenol	NS	NS	<47.2	<94.2	<44.3	<427
N-Nitrosodi-n-propylamine	NS	NS	<23.6	<47.2	<22.2	<214
N-Nitrosodiumethylamine	NS	NS	<23.6	<47.2	<22.2	<214
N-Nitrosodiphenylamine	NS	NS	<23.6	<47.2	<22.2	<214
Pentachlorophenol	6,700	6,700	<23.6	<47.2	<22.2	<214
Phenanthrene	100,000	500,000	**596**	**379**	<22.2	**3,570**
Phenol	100,000	500,000	<23.6	<47.2	<22.2	<214
Pyrene	100,000	500,000	**100**	**647**	<22.2	**471**
1,2,4,5-Tetrachlorobenzene	NS	NS	<47.2	<94.2	<44.3	<427
2,3,4,6-Tetrachlorophenol	NS	NS	<47.2	<94.2	<44.3	<427
1,2,4-Tricholobenzene	NS	NS	<23.6	<47.2	<22.2	<214
2,4,6-Trichlorophenol	NS	NS	<23.6	<47.2	<22.2	<214
2,4,5-Trichlorophenol	NS	NS	<23.6	<47.2	<22.2	<214

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of Commercial Soil Cleanup Values
NS = No Standard

Table 4

PCBs and Pesticides in Soil (ug/kg-dry)
EPA Method 8081/8082
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-1 (0-2) 3/12/15	SB-2 (0-2) 3/4/15	SB-2 (8-10) 3/4/15	SB-2 (12-14) 3/4/15	SB-3 (0-2) 3/3/15	SB-3 (8-10) 3/3/15
Aldrin	19	680	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
alpha-BHC	97	3,400	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
beta-BHC	72	3,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
delta-BHC	100,000	500,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
gamma-BHC	280	9,200	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
gamma-Chlordane	NS	NS	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
alpha-Chlordane	NS	NS	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Chlordane, total	NS	NS	<7.32	<8.31	<7.86	<8.35	<7.63	<7.61
4,4´-DDD	2,600	92,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
4,4´-DDE	1,800	62,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
4,4´-DDT	1,700	47,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Dieldrin	39	1,400	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endosulfan I	4,800	200,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endosulfan II	4,800	200,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endosulfan sulfate	4,800	200,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endrin	2,200	89,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endrin aldehyde	NS	NS	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Endrin ketone	NS	NS	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Heptachlor	420	15,000	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Heptachlor epoxide	NS	NS	<1.83	<2.08	<1.97	<2.09	<1.91	<1.90
Methoxychlor	NS	NS	<9.15	<10.4	<9.83	<10.4	<9.54	<9.51
Toxaphene	NS	NS	<92.6	<105	<99.5	<106	<96.6	<96.2
Aroclor 1016	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1221	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1232	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1242	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1248	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1254	1,000	1,000	<0.0185	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192
Aroclor 1260	1,000	1,000	**0.0680**	<0.0210	<0.0198	<0.0211	<0.0193	<0.0192

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 4 continued.

PCBs and Pesticides in Soil (ug/kg-dry)
EPA Method 8081/8082
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-3 (12-14) 3/3/15	SB-4 (0-2) 3/4/15	SB-4 (8-10) 3/4/15	SB-4 (12-14) 3/4/15	SB-5 (0-2) 3/3/15	SB-5 (8-10) 3/3/15
Aldrin	19	680	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
alpha-BHC	97	3,400	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
beta-BHC	72	3,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
delta-BHC	100,000	500,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
gamma-BHC	280	9,200	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
gamma-Chlordane	NS	NS	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
alpha-Chlordane	NS	NS	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Chlordane, total	NS	NS	<8.90	<7.81	<7.91	<7.61	<7.22	<7.19
4,4´-DDD	2,600	92,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
4,4´-DDE	1,800	62,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
4,4´-DDT	1,700	47,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Dieldrin	39	1,400	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endosulfan I	4,800	200,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endosulfan II	4,800	200,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endosulfan sulfate	4,800	200,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endrin	2,200	89,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endrin aldehyde	NS	NS	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Endrin ketone	NS	NS	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Heptachlor	420	15,000	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Heptachlor epoxide	NS	NS	<2.22	<1.95	<1.98	<1.90	<1.80	<1.80
Methoxychlor	NS	NS	<11.1	<9.77	<9.89	<9.51	<9.02	<8.98
Toxaphene	NS	NS	<113	<98.9	<100	<96.3	<91.3	<90.9
Aroclor 1016	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1221	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1232	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1242	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1248	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1254	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	<0.0182	<0.0181
Aroclor 1260	1,000	1,000	<0.0225	<0.0197	<0.0200	<0.0192	**0.0713**	<0.0181

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 4 continued.

PCBs and Pesticides in Soil (ug/kg-dry)
EPA Method 8081/8082
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-5 (12-14) 3/3/15	SB-6 (0-2) 3/3/15	SB-6 (8-10) 3/3/15	SB-6 (12-14) 3/3/15	SB-7 (0-2) 3/15/15	SB-7 (8-10) 3/12/15
Aldrin	19	680	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
alpha-BHC	97	3,400	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
beta-BHC	72	3,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
delta-BHC	100,000	500,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
gamma-BHC	280	9,200	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
gamma-Chlordane	NS	NS	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
alpha-Chlordane	NS	NS	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Chlordane, total	NS	NS	<7.22	<7.49	<7.70	<7.15	<7.18	<6.75
4,4´-DDD	2,600	92,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
4,4´-DDE	1,800	62,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
4,4´-DDT	1,700	47,000	<1.81	**17.2**	<1.92	<1.79	<1.79	<1.69
Dieldrin	39	1,400	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endosulfan I	4,800	200,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endosulfan II	4,800	200,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endosulfan sulfate	4,800	200,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endrin	2,200	89,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endrin aldehyde	NS	NS	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Endrin ketone	NS	NS	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Heptachlor	420	15,000	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Heptachlor epoxide	NS	NS	<1.81	<1.87	<1.92	<1.79	<1.79	<1.69
Methoxychlor	NS	NS	<9.03	<9.37	<9.62	<8.94	<8.97	<8.44
Toxaphene	NS	NS	<91.4	<94.8	<97.4	<90.4	<90.8	<85.4
Aroclor 1016	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1221	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1232	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1242	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1248	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1254	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170
Aroclor 1260	1,000	1,000	<0.0182	<0.0189	<0.0194	<0.0180	<0.0181	<0.0170

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 4 continued.

PCBs and Pesticides in Soil (ug/kg-dry)
EPA Method 8081/8082
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-7 (12-14) 3/12/15	SB-8 (0-2) 3/12/15	SB-8 (8-10) 3/12/15	SB-8 (12-14) 3/12/15
Aldrin	19	680	<1.87	<1.86	<1.75	<1.69
alpha-BHC	97	3,400	<1.87	<1.86	<1.75	<1.69
beta-BHC	72	3,000	<1.87	<1.86	<1.75	<1.69
delta-BHC	100,000	500,000	<1.87	<1.86	<1.75	<1.69
gamma-BHC	280	9,200	<1.87	<1.86	<1.75	<1.69
gamma-Chlordane	NS	NS	<1.87	<1.86	<1.75	<1.69
alpha-Chlordane	NS	NS	<1.87	<1.86	<1.75	<1.69
Chlordane, total	NS	NS	<7.47	<7.45	<7.02	<6.75
4,4´-DDD	2,600	92,000	<1.87	<1.86	<1.75	<1.69
4,4´-DDE	1,800	62,000	<1.87	<1.86	<1.75	<1.69
4,4´-DDT	1,700	47,000	<1.87	<1.86	<1.75	<1.69
Dieldrin	39	1,400	<1.87	<1.86	<1.75	<1.69
Endosulfan I	4,800	200,000	<1.87	<1.86	<1.75	<1.69
Endosulfan II	4,800	200,000	<1.87	<1.86	<1.75	<1.69
Endosulfan sulfate	4,800	200,000	<1.87	<1.86	<1.75	<1.69
Endrin	2,200	89,000	<1.87	<1.86	<1.75	<1.69
Endrin aldehyde	NS	NS	<1.87	<1.86	<1.75	<1.69
Endrin ketone	NS	NS	<1.87	<1.86	<1.75	<1.69
Heptachlor	420	15,000	<1.87	<1.86	<1.75	<1.69
Heptachlor epoxide	NS	NS	<1.87	<1.86	<1.75	<1.69
Methoxychlor	NS	NS	<9.33	<9.32	<8.77	<8.44
Toxaphene	NS	NS	<94.5	<94.3	<88.8	<85.4
Aroclor 1016	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1221	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1232	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1242	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1248	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1254	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170
Aroclor 1260	1,000	1,000	<0.0188	<0.0188	<0.0177	<0.0170

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 5

Metals in Soil (mg/kg-dry)
EPA Method 6010
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-1 (0-2) 3/12/15	SB-2 (0-2) 3/4/15	SB-2 (8-10) 3/4/15	SB-2 (12-14) 3/4/15	SB-3 (0-2) 3/3/15	SB-3 (8-10) 3/3/15
Aluminum	NS	NS	**6,560**	**7,980**	**10,600**	**9,700**	**4,920**	**10,800**
Antimony	NS	NS	**1.65**	**1.130**	<0.596	<0.633	**1.51**	<0.576
Arsenic	16	16	**4.52**	**8.91**	**2.28**	**1.75**	**6.88**	**7.61**
Barium	400	400	**148**	**133**	**44.2**	**71.0**	**133**	**136**
Beryllium	72	590	<0.111	<0.126	<0.119	<0.127	<0.116	<0.115
Cadmium	4.3	9.3	**1.15**	**4.21**	<0.357	<0.380	0.674	<0.346
Calcium	NS	NS	**4,590**	**3,190**	**847**	**992**	**3,500**	**1,140**
Chromium	180	1,500	**34.5**	**19.1**	**15.1**	**20.3**	**13.6**	**22.6**
Cobalt	NS	NS	**6.3**	**6.74**	**5.73**	**9.34**	**5.62**	**6.21**
Copper	270	270	**80.0**	**94.2**	**10.7**	**18.0**	**68.1**	**14.1**
Iron	NS	NS	**23,200**	**30,000**	**13,100**	**16,500**	**12,100**	**15,400**
Lead	400	1,000	**341**	**584**	**9.17**	**12.2**	**215**	**9.52**
Magnesium	NS	NS	**2,950**	**2,270**	**2,640**	**4,550**	**2,660**	**3,300**
Manganese	2,000	10,000	**310**	**210**	**145**	**505**	**137**	**184**
Mercury	0.81	2.8	**0.419**	**0.294**	<0.0357	<0.0380	**0.132**	<0.0346
Nickel	310	310	**34.8**	**14.8**	**9.81**	**16.2**	**13.9**	**12.1**
Potassium	NS	NS	**743**	**816**	**812**	**1,450**	**664**	**693**
Selenium	180	1,500	**2.35**	**1.75**	<1.19	<1.27	**1.64**	<1.15
Silver	180	1,500	<0.554	<0.630	<0.596	<0.633	<0.578	<0.576
Sodium	NS	NS	**103**	**215**	**264**	**224**	**146**	**194**
Thallium	NS	NS	<1.11	<1.26	<1.19	<1.27	<1.16	<1.15
Vanadium	NS	NS	**24.4**	**22.1**	**19.5**	**27.3**	**17.9**	**31.0**
Zinc	10,000	10,000	**444**	**1,650**	**33.1**	**43.1**	**438**	**40.6**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 5 continued.

Metals in Soil (mg/kg-dry)
EPA Method 6010
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-3 (12-14) 3/3/15	SB-4 (0-2) 3/4/15	SB-4 (8-10) 3/4/15	SB-4 (12-14) 3/4/15	SB-5 (0-2) 3/3/15	SB-5 (8-10) 3/3/15
Aluminum	NS	NS	**12,900**	**6,040**	**11,100**	**10,300**	**3,250**	**6,140**
Antimony	NS	NS	<0.674	**1.03**	<0.599	<0.576	**2.53**	<0.544
Arsenic	16	16	**10.0**	**5.34**	**6.46**	**2.01**	**6.45**	**3.98**
Barium	400	400	**94.7**	**132**	**44.8**	**60.7**	**144**	**22.8**
Beryllium	72	590	<0.135	<0.118	<0.120	<0.115	<0.109	<0.109
Cadmium	4.3	9.3	<0.404	**2.91**	<0.360	<0.346	**1.40**	<0.327
Calcium	NS	NS	**1,390**	**24,700**	**1,110**	**831**	**20,700**	**246**
Chromium	180	1,500	**27.6**	**13.5**	**18.8**	**22.9**	**11.3**	**11.0**
Cobalt	NS	NS	**11.5**	**6.2**	**8.5**	**8.34**	**5.42**	**5.59**
Copper	270	270	**21.8**	**152**	**22.6**	**18.7**	**117**	**8.53**
Iron	NS	NS	**24,600**	**6,470**	**19,600**	**13,100**	**9,000**	**11,700**
Lead	400	1,000	**7.52**	**108**	**29.5**	**10**	**208**	**3.81**
Magnesium	NS	NS	**5,470**	**12,100**	**2,910**	**4,150**	**11,700**	**1,740**
Manganese	2,000	10,000	**202**	**67.9**	**243**	**238**	**133**	**140**
Mercury	0.81	2.8	<0.0404	**0.0877**	**0.0704**	<0.0346	**0.299**	<0.0327
Nickel	310	310	**21.5**	**17.4**	**14.7**	**15.1**	**14.9**	**9.74**
Potassium	NS	NS	**2,800**	**648**	**947**	**932**	**526**	**656**
Selenium	180	1,500	<1.35	<1.18	<1.20	<1.15	<1.09	<1.09
Silver	180	1,500	<0.674	<0.592	<0.599	<0.576	<0.547	<0.544
Sodium	NS	NS	**286**	**281**	**44.2**	**85.4**	**136**	**74**
Thallium	NS	NS	<1.35	<1.18	<1.20	<1.15	<1.09	<1.09
Vanadium	NS	NS	**35.8**	**22.1**	**27.9**	**22.1**	**17.3**	**16.7**
Zinc	10,000	10,000	**53.1**	**199**	**138**	**33.2**	**158**	**29.7**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 5 continued.

Metals in Soil (mg/kg-dry)
EPA Method 6010
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-5 (12-14) 3/3/15	SB-6 (0-2) 3/3/15	SB-6 (8-10) 3/3/15	SB-6 (12-14) 3/3/15	SB-7 (0-2) 3/15/15	SB-7 (8-10) 3/12/15
Aluminum	NS	NS	**6,980**	**8,180**	**6,100**	**4,680**	**10,400**	**4,830**
Antimony	NS	NS	<0.547	**2.23**	<0.583	<0.542	<0.544	<0.512
Arsenic	16	16	**2.51**	**9.54**	**1.58**	**12.5**	**3.53**	**1.03**
Barium	400	400	**51.8**	**149**	**20.5**	**26.5**	**69.5**	**24.4**
Beryllium	72	590	<0.109	<0.114	<0.117	<0.108	<0.109	<1.02
Cadmium	4.3	9.3	<0.328	<0.341	<0.350	<0.325	<0.326	<0.307
Calcium	NS	NS	**854**	**5,010**	**940**	**671**	**3,270**	**504**
Chromium	180	1,500	**18.8**	**19.0**	**15.3**	**8.29**	**20**	**12.6**
Cobalt	NS	NS	**5.87**	**6.77**	**5.73**	**4.26**	**8.49**	**4.43**
Copper	270	270	**19.9**	**232**	**17.5**	**10.0**	**38.5**	**8.96**
Iron	NS	NS	**12,000**	**16,600**	**13,400**	**7,950**	**2,800**	**10,500**
Lead	400	1,000	**7.94**	**1,040**	**5.42**	**6.50**	**237**	**3.03**
Magnesium	NS	NS	**2,650**	**3,370**	**2,280**	**2,170**	**4,200**	**1,710**
Manganese	2,000	10,000	**195**	**228**	**223**	**115**	**429**	**181**
Mercury	0.81	2.8	<0.0328	**1.42**	<0.0350	<0.0325	**0.0573**	<0.0307
Nickel	310	310	**14.1**	**16.6**	**15.4**	**9.59**	**19.8**	**9.6**
Potassium	NS	NS	**853**	**612**	**702**	**694**	**1,610**	**672**
Selenium	180	1,500	<1.09	**1.5**	<1.17	<1.08	**4.31**	**1.24**
Silver	180	1,500	<0.547	<0.568	<0.583	<0.542	<0.544	<0.512
Sodium	NS	NS	**85.1**	**61.5**	**39.9**	**35.8**	**301**	**46**
Thallium	NS	NS	<1.09	<1.14	<1.17	<1.08	<1.09	<1.02
Vanadium	NS	NS	**23.9**	**20.0**	**25.4**	**12.0**	**28.4**	**15.2**
Zinc	10,000	10,000	**25.2**	**261**	**28.2**	**24.8**	**162**	**25.9**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory standard
NS = No Standard

Table 5 continued.

Metals in Soil (mg/kg-dry)
EPA Method 6010
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	RRSCO [2]	CSCO [3]	SB-7 (12-14) 3/12/15	SB-8 (0-2) 3/12/15	SB-8 (8-10) 3/12/15	SB-8 (12-14) 3/12/15
Aluminum	NS	NS	**4,750**	**8,330**	**6,820**	**4,260**
Antimony	NS	NS	<0.566	**1.240**	**<0.532**	<0.511
Arsenic	16	16	<1.13	**8.41**	**1.83**	**<1.02**
Barium	400	400	**30.4**	**426.0**	**29.2**	**27.3**
Beryllium	72	590	<0.113	<0.113	<0.106	<0.102
Cadmium	4.3	9.3	<0.339	**5190**	<0.319	<0.307
Calcium	NS	NS	**873**	**5,190**	**1,470**	**775**
Chromium	180	1,500	**13.2**	**25.6**	**10.9**	**11.3**
Cobalt	NS	NS	**4.7**	**10.6**	**7.5**	**4.53**
Copper	270	270	**9.1**	**205.0**	**15.2**	**8.0**
Iron	NS	NS	**10,500**	**20,400**	**13,000**	**8,270**
Lead	400	1,000	**3.39**	**482**	**4.61**	**3**
Magnesium	NS	NS	**2,170**	**3,670**	**3,070**	**1,980**
Manganese	2,000	10,000	**320**	**405**	**300**	**439**
Mercury	0.81	2.8	<0.0339	**0.314**	<0.0319	**<0.0307**
Nickel	310	310	**11.8**	**26.1**	**14.4**	**9.2**
Potassium	NS	NS	**1,120**	**1,420**	**979**	**472**
Selenium	180	1,500	**1.23**	**3.09**	**1.51**	**<1.02**
Silver	180	1,500	<0.566	<0.565	<0.532	<0.511
Sodium	NS	NS	**55**	**204**	**46**	**<10.2**
Thallium	NS	NS	<1.13	<1.13	<1.06	<1.02
Vanadium	NS	NS	**15.1**	**29.2**	**18.9**	**11.6**
Zinc	10,000	10,000	**19.9**	**812**	**47.5**	**18.1**

[1] Unrestricted Use Soil Cleanup Objectives, Table 375-6.8(a), 6 NYCRR 375, NYSDEC 2006
[2] Restricted Residential Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
[3] Commercial Soil Cleanup Objectives, Table 375-6.8(b), 6 NYCRR 375, NYSDEC 2006
Bolded values signify detection above method detection limit
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NS = No Standard

Table 5

Volatile Organic Compounds in Groundwater (ug/l)
EPA Method 8260
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	Standard [1]	TW-2 3/4/15	TW-3 3/12/15
1,1,1,2-Tetrachloroethane	5	<10	<5
1,1,1-Trichloroethane	5	<10	<5
1,1,2,2-Tetrachloroethane	0.2	<10	<5
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	<10	<5
1,1,2-Trichloroethane	1	<10	<5
1,1-Dichloroethane	5	<10	<5
1,1-Dichloroethene	0.07	<10	<5
1,2,4-Trichlorobenzene	5	<10	<5
1,2,4-Trimethylbenzene	5	**1,100**	**1,400**
1,2-Dibromo-3-chloropropane	0.04	<40	<40
1,2-Dibromoethane	NS	<10	<5
1,2-Dichlorobenzene	2	<10	<5
1,2-Dichloroethane	0.6	<10	<5
1,2-Dichloropropane	1	<10	<5
1,3,5-Trimethylbenzene	5	**340**	**440**
1,3-Dichlorobenzene	3	<10	<5
1,4-Dichlorobenzene	3	<10	<5
1,4-Dioxane	NS	<2,000	<1,000
Cyclohexane	NS	**390**	**280**
2-Butanone	50	<40	<20
2-Hexanone	50	<10	<5
4-Methyl-2-pentanone	NS	<10	<5
Acetone	50	**250**	<25
Acrolein	NS	<10	<5
Acrylonitrile	5	<10	<5
Benzene	0.7	**460**	**460**
Bromodichloromethane	50	<10	<5
Bromoform	50	<10	<5
Bromomethane	5	<10	<5
Carbon disulfide	60	<10	<5
Carbon tetrachloride	5	<10	<5
Chlorobenzene	5	<10	<5
Chloroethane	5	<10	<5
Chloroform	7	**16**	<5.0
Chloromethane	NS	<10	<5
cis-1,2-Dichloroethene	5	<10	<5
cis-1,3-Dichloropropene	0.4	<10	<5
Dibromochloromethane	50	<10	<5
Dibromomethane	5	<10	<5
Dichlorodifluoromethane	5	<10	<5
Ethylbenzene	5	**1,300**	**2,000**
Methylcyclohexane	NS	**180**	**200**
Hexachlorobutadiene	0.5	<10	<5
Isopropylbenzene	5	**95**	**110**
Methyl Acetate	NS	<10	<5
Methyl tert-butyl ether	10	<10	<5
Methylene chloride	5	**720**	<25
n-Butylbenzene	5	<10	<5
n-Propylbenzene	5	**160**	**220**
o-Xylene	5	**1,100**	**500**
1,2,3-Trichlorobenzene	5	<10	<5
p- & m-Xylenes	5	**4,000**	**4,600**
p-Isopropyltoluene	5	<10	**24**
sec-Butylbenzene	5	**12**	**12**
Styrene	50	<10	<5
tert-Butyl alcohol (TBA)	NS	<40	**3,100**
tert-Butylbenzene	5	<10	<5
Tetrachloroethene	5	<10	<5
Toluene	5	**780**	**120**
trans-1,2-Dichloroethene	5	<10	<5
trans-1,3-Dichloropropene	NS	<10	<5
Trichloroethene	5	<10	<5
Trichlorofluoromethane	5	<10	<5
Vinyl chloride	2	<10	<5
Xylene (total)	15	**5,100**	**5,100**

[1] NYS DEC TOGS 1.1.1, June, 1998
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory guidance
NS = No Standard

Table 6

Semi Volatile Organic Compounds in Groundwater (ug/l)
EPA Method 8270
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	Standard [1]	TW-2 3/4/15	TW-3 3/12/15
Acenaphthene	20	**14.7**	<5.13
Acenaphthylene	NS	<5.13	<5.13
Acetophenone	NS	<5.13	<5.13
Anthracene	50	**8.64**	<5.13
Atrazine	7.5	<5.13	<5.13
Benzaldehyde	NS	<5.13	<5.13
Benzidine	5	<20.5	<20.5
Benzo(a)anthracene	NS	<5.13	<5.13
Benzo(a)pyrene	NS	<5.13	<5.13
Benzo(b)fluoranthene	0.002	<5.13	<5.13
Benzo(g,h,i)perylene	NS	<5.13	<5.13
Benzoic acid	NS	<51.3	<51.3
Benzo(k)fluoranthene	0.002	<5.13	<5.13
Benzyl alcohol	NS	<5.13	<5.13
Benzyl butyl phthalate	50	<5.13	<5.13
1,1´-Biphenyl	5	**27.4**	<5.13
4-Bromophenyl-phenylether	NS	<5.13	<5.13
Caprolactam	NS	<5.13	<5.13
Carbazole	NS	**18.0**	**8.1**
Bis(2-chloroethoxy)methane	5	<5.13	<5.13
Bis(2-chloroethyl)ether	1	<5.13	<5.13
Bis(2-chloroisopropyl)ether	5	<5.13	<5.13
2-Chloronaphthalene	10	<5.13	<5.13
2-Chlorophenol	NS	<5.13	<5.13
4-Chlorophenyl phenyl ether	NS	<5.13	<5.13
Chrysene	0.002	<5.13	<5.13
Dibenzo(a,h)anthracene	NS	<5.13	<5.13
Dibenzofuran	NS	<5.13	<5.13
Di-n-butyl phthalate	50	<5.13	<5.13
1,4-Dichlorobenzene	3	<5.13	<5.13
1,2-Dichlorobenzene	3	<5.13	<5.13
1,3-Dichlorobenzene	3	<5.13	<5.13
3,3´-Dichlorobenzidine	5	<5.13	<5.13
2,4-Dichlorophenol	0.3	<5.13	<5.13
Diethyl phthalate	50	<5.13	<5.13
2,4-Dimethylphenol	50	<5.13	<5.13
Dimethyl phthalate	50	<5.13	<5.13
4,6-Dinitro-2-methylphenol	NS	<5.13	<5.13
2,4-Dinitrophenol	10	<5.13	<5.13
2,4-Dinitrotoluene	5	<5.13	<5.13
2,6-Dinitrotoluene	0.07	<5.13	<5.13
Di-n-octyl phthalate	50	<5.13	<5.13
1,2-Diphenyhydrazine	NS	<5.13	<5.13
Bis(2-ethylhexyl)phthalate	5	<5.13	<5.13
Fluoranthene	50	<5.13	<5.13
Fluorene	50	**27.9**	<5.13
Hexachlorobenzene	0.04	<5.13	<5.13
Hexachlorobutadiene	0.5	<5.13	<5.13
Hexachlorocyclopentadiene	5	<5.13	<5.13
Hexachloroethane	5	<5.13	<5.13
Indeno(1,2,3-c,d)pyrene	0.002	<5.13	<5.13
Isophorone	50	<5.13	<5.13
2-Methylnaphthalene	42	**501**	**58.7**
2-Methylphenol	NS	<5.13	<5.13
3- & 4-Methylphenol	NS	<5.13	<5.13
Naphthalene	10	**453**	**195**
3-Nitroaniline	5	<5.13	<5.13
4-Nitroaniline	5	<5.13	<5.13
2-Nitroaniline	5	<5.13	<5.13
Nitrobenzene	0.4	<5.13	<5.13
4-Nitrophenol	NS	<5.13	<5.13
2-Nitrophenol	NS	<5.13	<5.13
N-Nitrosodi-n-propylamine	NS	<5.13	<5.13
N-Nitrosodimethylamine	NS	<5.13	<5.13
N-Nitrosodiphenylamine	50	<5.13	<5.13
Pentachlorophenol	NS	<5.13	<5.13
Phenanthrene	50	**55.5**	<5.13
Phenol	NS	<5.13	<5.13
Pyrene	50	<5.13	<5.13
1,2,4,5-Tetrachlorobenzene	5	<5.13	<5.13
2,3,4,6-Tetrachlorophenol	NS	<5.13	<5.13
1,2,4-Trichlorobenzene	50	<5.13	<5.13
2,4,6-Trichlorophenol	NS	<5.13	<5.13
2,4,5-Trichlorophenol	NS	<5.13	<5.13

[1] NYS DEC TOGS 1.1.1, June, 1998
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory guidance
NS = No Standard

Table 7

PCBs and Pesticides in Groundwater (ug/l)
EPA Method 8081/8082
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	Standard [1]	TW-2 3/4/15	TW-3 3/12/15
Aldrin	0.041	<0.00410	<0.00640
alpha-BHC	0.11	<0.00410	<0.00640
beta-BHC	0.2	<0.00410	<0.00640
delta-BHC	0.3	<0.00410	<0.00640
gamma-BHC	0.06	<0.00410	<0.00640
gamma-Chlordane	NS	<0.0103	<0.0160
alpha-Chlordane	NS	<0.00410	<0.00640
Chlordane, total	0.05	<0.0410	<0.0640
4,4´-DDD	2.9	<0.00410	<0.00640
4,4´-DDE	2.1	<0.00410	<0.00640
4,4´-DDT	2.1	<0.00410	<0.00640
Dieldrin	0.044	<0.00205	<0.00320
Endosulfan I	0.9	<0.00410	<0.00640
Endosulfan II	0.9	<0.00410	<0.00640
Endosulfan sulfate	1	<0.00410	<0.00640
Endrin	0.1	<0.00410	<0.00640
Endrin aldehyde	NS	<0.0103	<0.0160
Endrin ketone	NS	<0.0103	<0.0160
Heptachlor	0.1	<0.00410	<0.00640
Heptachlor epoxide	0.02	<0.00410	<0.00640
Methoxychlor	NS	<0.00410	<0.00640
Toxaphene	0.06	<0.103	<0.160
Aroclor 1016	10	<0.0513	<0.0800
Aroclor 1221	10	<0.0513	<0.0800
Aroclor 1232	10	<0.0513	<0.0800
Aroclor 1242	10	<0.0513	<0.0800
Aroclor 1248	10	<0.0513	<0.0800
Aroclor 1254	10	<0.0513	<0.0800
Aroclor 1260	10	<0.0513	**0.269**

[1] NYS DEC TOGS 1.1.1, June, 1998
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory guidance
NA = Not Analyzed
NS = No Standard

Table 8

Total and Dissolved Metals in Groundwater (ug/l)
EPA Method 6010 and 7471
23-01 41st Avenue
Long Island City, NY

ACT Project No.: 8092-LINY

Sample ID Sample Date	Standard [1]	TW-2 3/4/15	TW-3 3/12/15
Total			
Aluminum	100	**11,700**	**59,200**
Antimony	3	<5	<5
Arsenic	50	**23**	**44**
Barium	1,000	**660**	**1,700**
Beryllium	3	<1	<1
Cadmium	5	<3	**3**
Calcium	NS	**95,400**	**214,000**
Chromium	50	**39**	**153**
Cobalt	5	**16**	**107**
Copper	200	**46**	**317**
Iron	300	**69,100**	**141,000**
Lead	50	**65**	**454**
Magnesium	35,000	**15,800**	**83,100**
Manganese	300	**1,560**	**27,700**
Mercury	0.7	<0.2	<0.2
Nickel	100	**30**	**203**
Potassium	NS	**30,300**	**13,200**
Selenium	10	<10	**28**
Silver	NS	<5	<5
Sodium	20,000	**201,000**	**248,000**
Thallium	8	<5	<5
Vanadium	14	**35**	**211**
Zinc	66	**162**	**963**
Dissolved			
Aluminum	100	<10	**38**
Antimony	3	<5	<5
Arsenic	50	**15**	**25**
Barium	1,000	**513**	**179**
Beryllium	3	<1	<1
Cadmium	5	<3	<3
Calcium	NS	**90,900**	**121,000**
Chromium	50	<5	<5
Cobalt	5	<5	<5
Copper	200	<3	<3
Iron	300	**44,200**	**77,300**
Lead	50	**15**	**8**
Magnesium	35,000	**10,300**	**27,700**
Manganese	300	**915**	**16,500**
Mercury	0.7	<0.02	<0.02
Nickel	100	**6**	**7**
Potassium	NS	**27,300**	**3,650**
Selenium	10	<10	**12**
Silver	NS	<5	<5
Sodium	20,000	**290,000**	**236,000**
Thallium	8	<5	<5
Vanadium	14	<10	<10
Zinc	66	**22**	**23**

[1] NYS DEC TOGS 1.1.1, June, 1998
Bolded values signify detection above method detection limit
Highlighted values signify exceedance of regulatory guidance in dissolved samples
NS = No Standard

Table 9

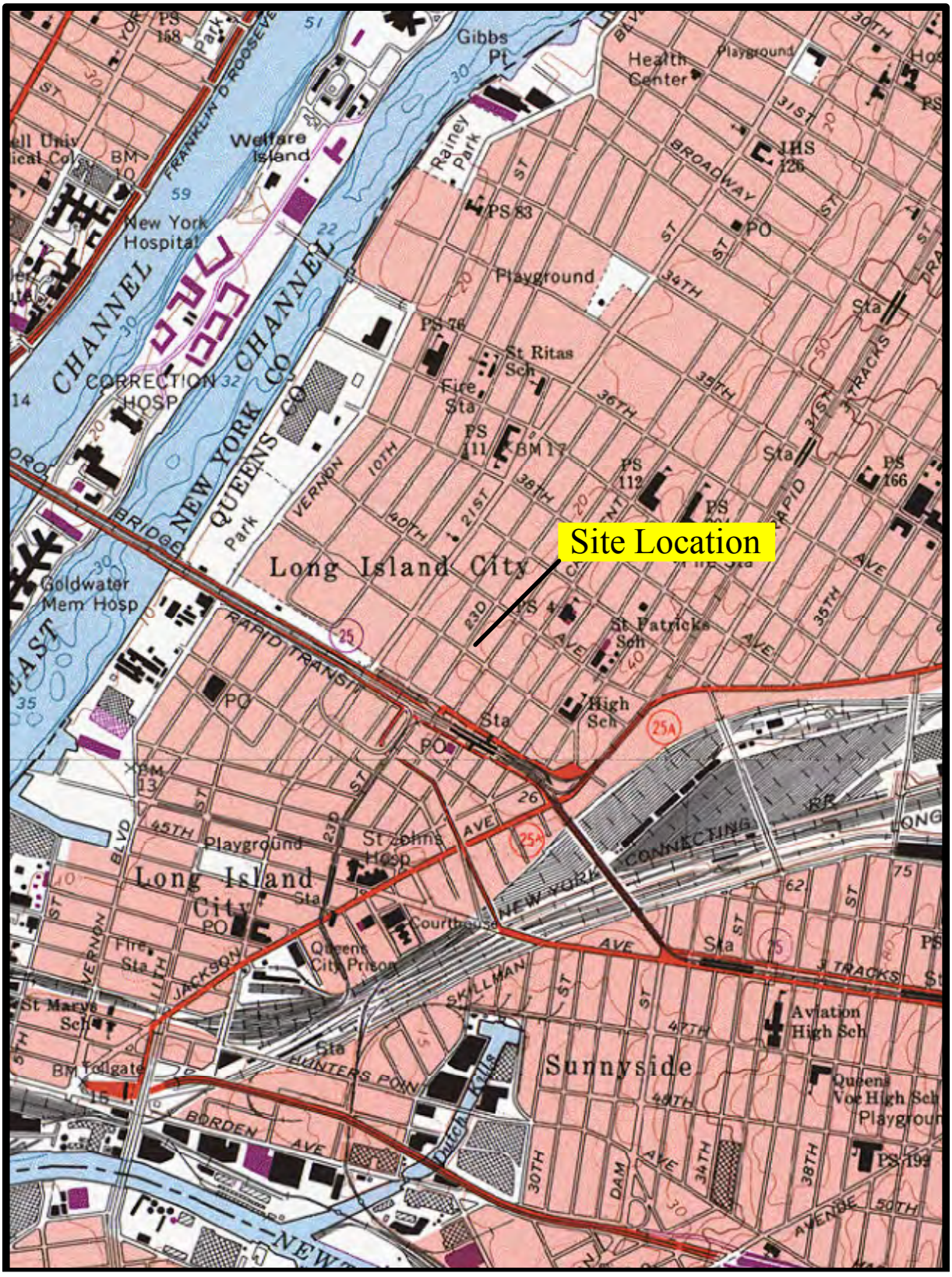
Volatile Organic Compounds in Soil Vapor (ug/m3)
EPA Method TO-15
87-03 Grand Avenue
Elmhurst, NY

ACT Project No.: 8143-ELNY

Sample ID	NYSDOH Indoor	SV-1	SV-2	SV-3	SV-4
Sample Date	Air Guideline [1]	3/12/15	3/12/15	3/12/15	3/12/15
1,1,1,2-Tetrachloroethane	NA	<0.71	<670	<600	<750
1,1,1-Trichloroethane	30 [4]	<1.1	<1,100	<950	<1,200
1,1,2,2-Tetrachloroethane	NA	<1.4	<1,300	<1,200	<1,500
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	<1.6	<1,500	<1,300	<1,700
1,1,2-Trichloroethane	NA	<1.1	<1,100	<950	<1,200
1,1-Dichloroethane	NA	<0.83	<780	<700	<890
1,1-Dichloroethylene	NA	<0.82	<770	<690	<870
1,2,4-Trichlorobenzene	NA	<1.5	<1,400	<1,300	<1,600
1,2,4-Trimethylbenzene	NA	**5.5**	<950	<850	<1,100
1,2-Dibromoethane	NA	<1.6	<1,500	<1,300	<1,700
1,2-Dichlorobenzene	NA	<1.2	<1,200	<850	<1,300
1,2-Dichloroethane	NA	<0.83	<780	<1,300	<890
1,2-Dichloropropane	NA	<0.95	<900	<1,000	<1,000
1,2-Dichlorotetrafluoroethane	NA	<1.4	<1,400	<700	<1,500
1,3,5-Trimethylbenzene	NA	**1.6**	<950	<850	<1,100
1,3-Butadiene	NA	**15**	<840	<750	<950
1,3-Dichlorobenzene	NA	<1.2	<1,200	<1,000	<1,300
1,3-Dichloropropene	NA	<0.95	<900	<800	<1,000
1,4-Dichlorobenzene	NA	<1.2	<1,200	<1,000	<1,300
1,4-Dioxane	NA	<0.74	<700	<630	<790
2-Butanone	NA	**13**	<570	<510	<650
2-Hexanone	NA	<1.7	<1,600	<1,400	<1,800
3-Chloropropene	NA	<0.64	<610	<540	<690
4-Methyl-2-pentanone	NA	<0.84	<790	<710	<900
Acetone	NA	**210**	**11,000**	**15,000**	**1,300**
Acrylonitrile	NA	<0.45	<420	<380	<480
Benzene	NA	**14**	**40,000**	**37,000**	**5,100**
Benzyl Chloride	NA	<1.1	<1,000	<900	<1,100
Bromodichloromethane	NA	<1.3	<1,200	<1,100	<1,400
Bromoform	NA	<2.1	<2,000	<1,800	<2,300
Bromomethane	NA	<0.80	<750	<670	<850
Carbon disulfide	NA	**11**	<600	<540	<680
Carbon tetrachloride	5 [3]	**0.52**	<300	<270	<640
Chlorobenzene	NA	<0.95	<890	<800	<1,000
Chloroethane	NA	<0.54	<510	<460	<580
Chloroform	NA	<1.0	<950	<850	<1,100
Chloromethane	NA	**0.64**	<400	<360	<450
cis-1,2-Dichloroethylene	NA	<0.82	<770	<690	<870
cis-1,3-Dichloropropylene	NA	<0.93	<880	<790	<990
Cyclohexane	NA	**6.8**	**210,000**	**20,000**	**28,000**
Dibromochloromethane	NA	<1.7	<1,600	<1,400	<1,800
Dichlorodifluoromethane	NA	**2.0**	<960	<860	<1,100
Ethyl acetate	NA	<1.5	<1,400	<1,300	<1,600
Ethylbenzene	NA	**9.5**	**1,000**	**1,400**	<950
Hexachlorobutadiene	NA	<2.2	<2,100	<1,900	<2,300
Isopropanol	NA	**2.1**	<950	<850	<1,100
Methyl Methacrylate	NA	<0.84	<790	<710	<900
Methyl tert-butyl ether	NA	<0.74	<700	<630	<790
Methylene chloride	NA	**29**	<1,300	<1,200	<1,500
n-Heptane	NA	**30**	**130,000**	**160,000**	**22,000**
n-Hexane	NA	**45**	**600,000**	**770,000**	**110,000**
Xylenes (o)	NA	**9.7**	<840	<750	<950
Xylenes (m&p)	NA	**32**	<1,700	2,800	<1,900
p-Ethyltoluene	NA	**6.9**	<950	<850	<1,100
Propylene	NA	<0.35	<330	<300	<380
Styrene	NA	<0.88	<830	<740	<930
Tetrachloroethylene	30 [4]	**3.3**	<330	<290	<370
Tetrahydrofuran	NA	<0.61	<570	<510	<650
Toluene	NA	**49**	**4,100**	**920**	<830
trans-1,2-Dichloroethylene	NA	<0.82	<770	<690	<870
trans-1,3-Dichloropropylene	NA	<0.93	<880	<790	<990
Trichloroethylene	5 [3]	<0.28	<260	<230	<290
Trichlorofluoromethane	NA	**1.3**	<1,100	<980	<1,200
Vinyl acetate	NA	<0.72	<680	<610	<770
Vinyl bromide	NA	<0.90	<850	<760	<960
Vinyl chloride	NA	<0.13	<120	<110	<140

[1] Table 3.1, NYSDOH "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006)
[2] Draft Subsurface Vapor Intrusion Guidance, USEPA (November, 2002)
[3] Matrix 1, NYSDOH "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006)
[4] Matrix 2, NYSDOH "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006)
Bolded values signify detection above method detection limit
Highlighted values signify detection above guidance value
NA = Guidance Value Not Available

FIGURES



From USGS 7.5 Minute Topographic Map Of
Central Park, NY Quadrangle

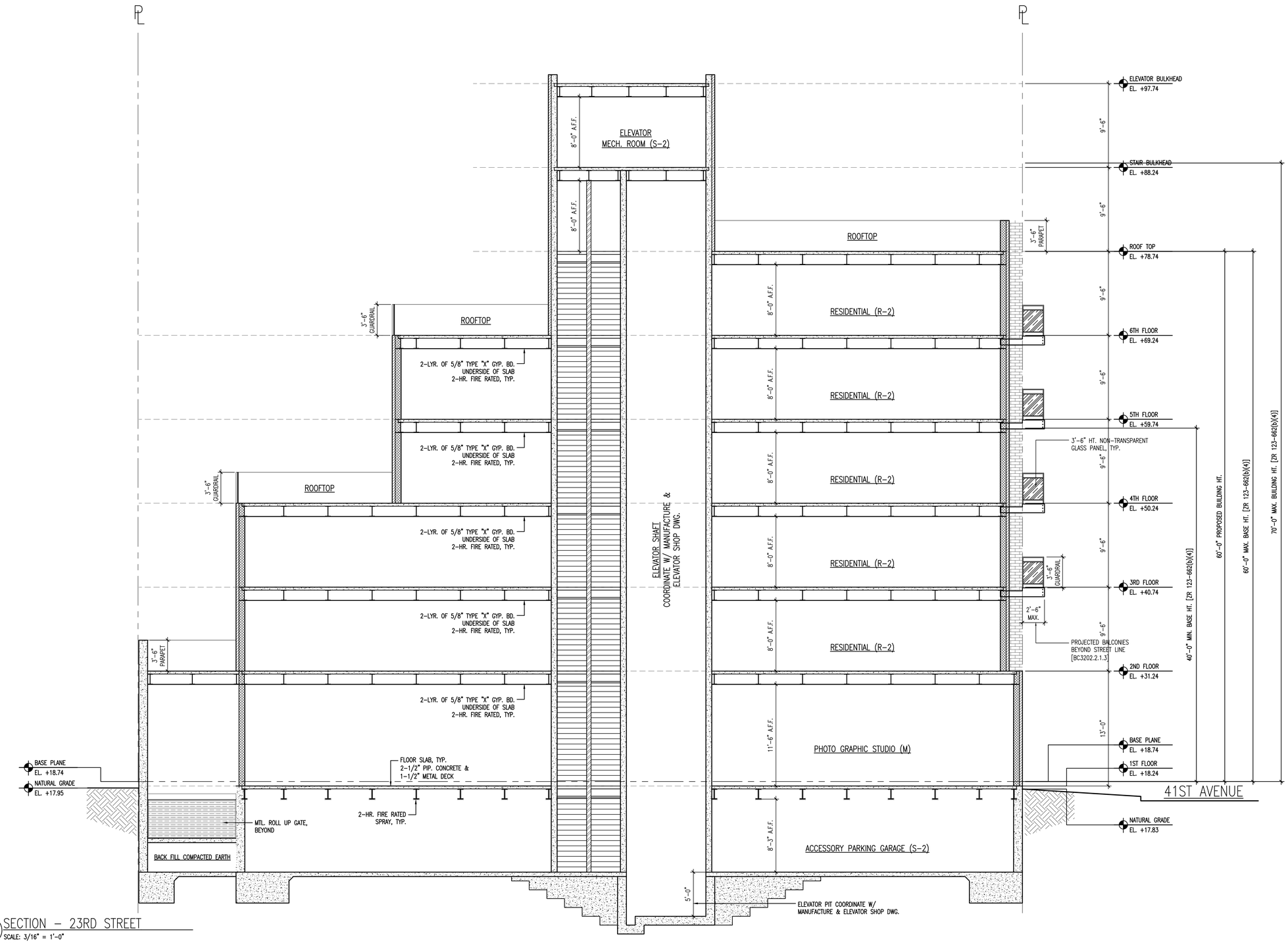
N

Locational Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, NY 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.: 8092-LINY	Figure No.: 1
Date: 01/20/2015	Scale: 1 inch = 2000 feet

Figure 2: Redevelopment Plans



C-C SECTION – 23RD STREET

SCALE: 3/16" = 1'-0"

NOTE: –

LEGENDS & ABBR.

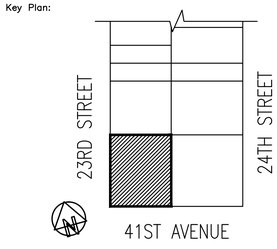
- CONCRETE FOUNDATION WALL
- MASONRY EXTERIOR WALL
- CMU MASONRY WALL
- 2-HOUR FIRE RATED PARTITION
- 1-HOUR FIRE RATED PARTITION
- INTERIOR NON-RATED PARTITION
- BRICK FINISH
- ROOF SHINGLE FINISH
- BRICK FINISH
- GRASS / PLANTER
- DOOR PANEL OPENING
- WINDOW PANEL OPENING
- SC — SMOKE DETECTOR/CARBON MONOXIDE
- T — PROGRAMMABLE THERMOSTAT
- BATHROOM EXHAUST FAN
- XX'-XX" EL. XX — ELEVATION ABOVE DATUM (NAVD 1988)
- 2 — REVISION DESIGNATION
- 1 — WALL TYPE, SEE A-302
- BATT INSULATION
- A-1 / A-301 — ELEVATION TAG
- A-1 / A-301 — SECTION TAG

AMERILAND BROOK LLC
Architecture, Zoning & Building Code, Interior Design

Address : 141-52 33rd Ave. Suite 2C, Queens, NY 11354
Phone : 646-201-6853
Email : xh8310@gmail.com

No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

SECTION – 23RD ST.

Drawing No.:

A-114.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:

A-3 ELEVATION – NORTH SIDE

SCALE: 3/16" = 1'-0"

NOTE: –

LEGENDS & ABBR.

- CONCRETE FOUNDATION WALL
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- BATHROOM EXHAUST FAN
- XX.XX EL. XX — ELEVATION ABOVE DATUM (NAVD 1988)
- 1 — REVISION DESIGNATION
- 1 — WALL TYPE, SEE A-302
- BATT INSULATION
- A-1 / A-201 — ELEVATION TAG
- A-1 / A-201 — SECTION TAG

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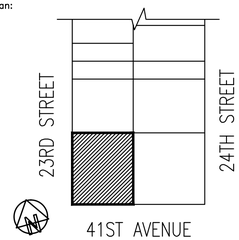
Email : xh8310@gmail.com

No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

ELEVATION – NORTH SIDE

Drawing No.:

A-110.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:

ELEVATION – 23RD STREET

SCALE: 3/16" = 1'-0"
NOTE: –

LEGENDS & ABBR.

- CONCRETE FOUNDATION WALL
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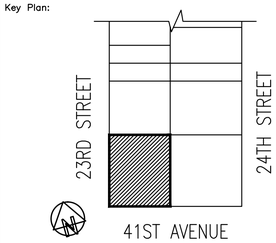
Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

ELEVATION – 23RD ST.

Drawing No.:

A-109.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:

ELEVATION – 41ST AVENUE

SCALE: 3/16" = 1'-0"
NOTE: –

LEGENDS & ABBR.

- CONCRETE FOUNDATION WALL
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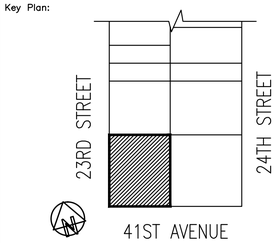
No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

ELEVATION – 41ST AVE.

Drawing No.:

A-108.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

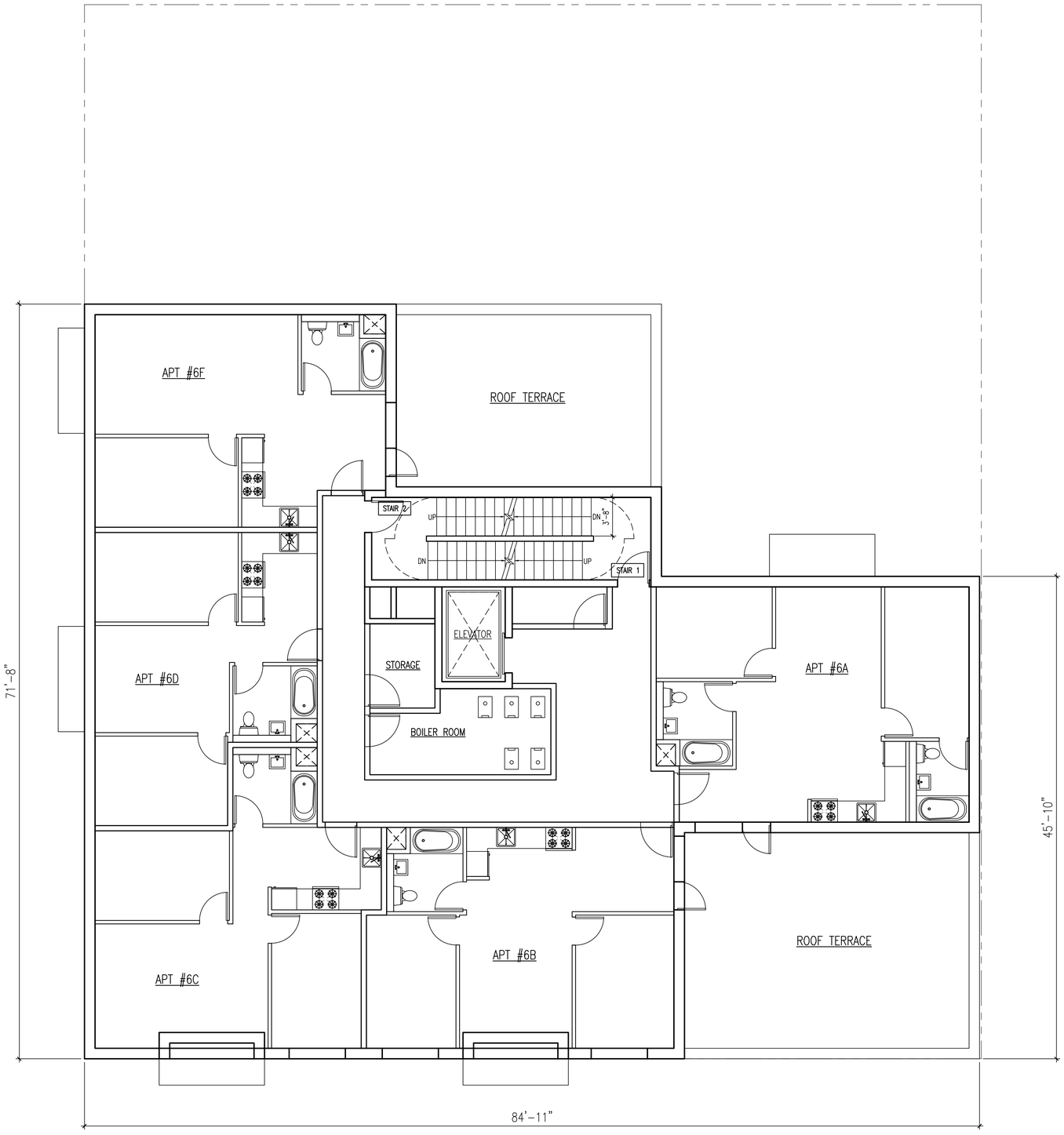
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:



6TH FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
2. ALL THE STAIR HANDRAIL TO BE 36" MTL.
3. SEE STRUCTURE DRAWINGS FOR DETAILS.
4. SEE STRUCTURE DRAWINGS FOR COLUMN SCHEDULE.
5. ELEVATOR SYSTEM, ELEVATOR PIT AND ELEVATOR MACHINE ROOM COORDINATE WITH MANUFACTURER.

LEGENDS & ABBR.

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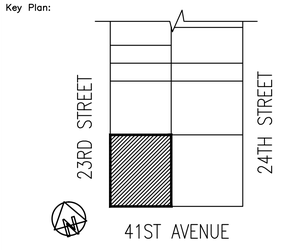
No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

6TH FLOOR PLAN

Drawing No.: A-106.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

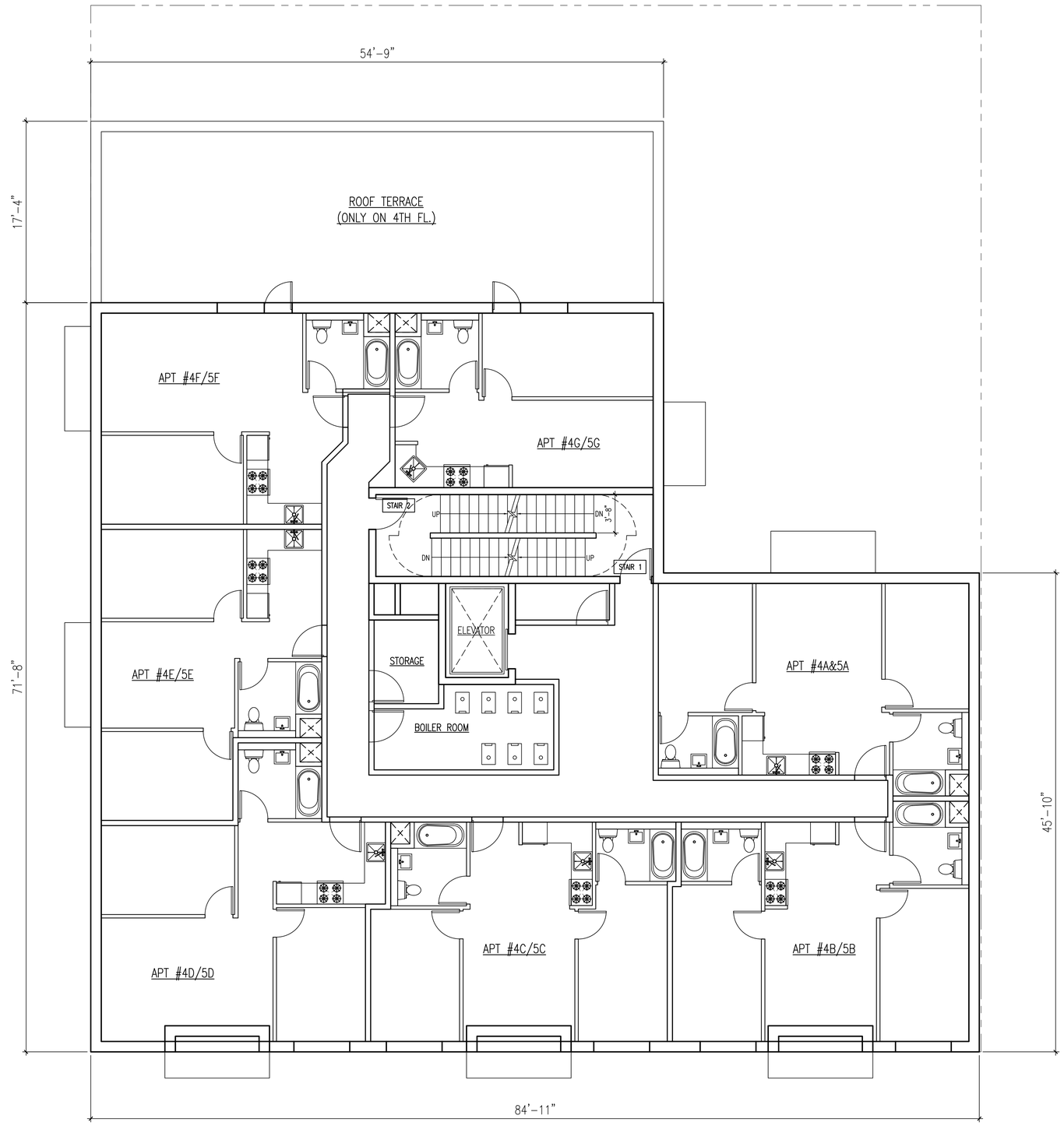
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s): X of X

Job No. / DOB Sticker:



4TH & 5TH FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
2. ALL THE STAIR HANDRAIL TO BE 36" MTL.
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4. SEE STRUCTURE DRAWINGS FOR COLUMN SCHEDULE.
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LEGENDS & ABBR.

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- BATT INSULATION
- ELEVATION TAG
- SECTION TAG

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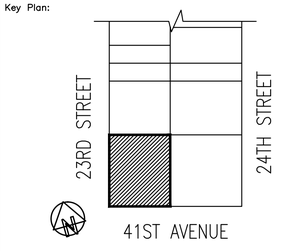
Phone : 646-201-6853
Email : xh8310@gmail.com

No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block	: 408	Zone Dist.	: M1-2/R6A (MIXED USE DIST.)
Lot	: 5	Tax Map	: 9B

Drawing Title:

4TH & 5TH FLOOR PLAN

Drawing No.:

A-105.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

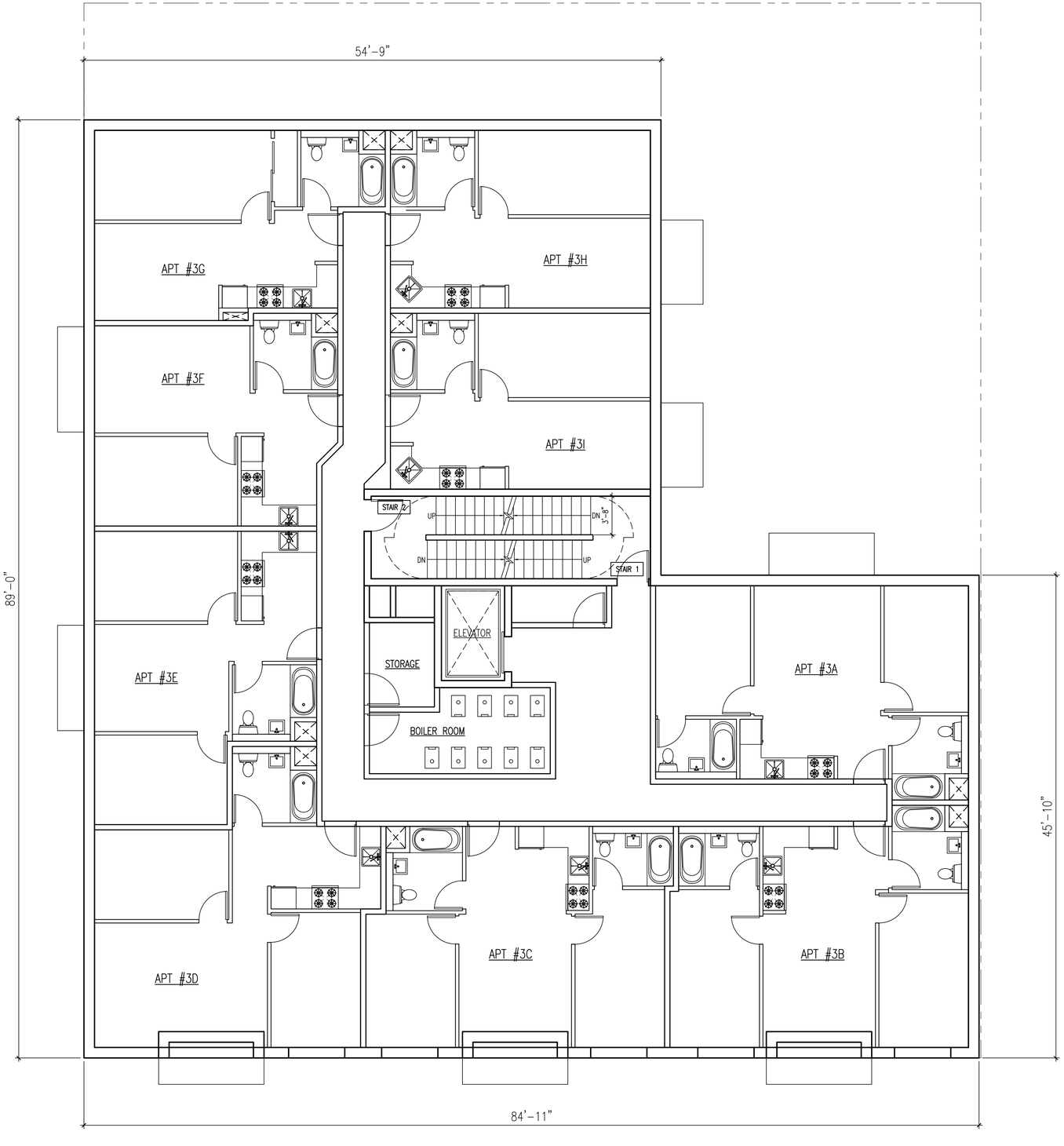
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:



3RD FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
2. ALL THE STAIR HANDRAIL TO BE 36" MTL.
3. SEE STRUCTURE DRAWINGS FOR DETAILS.
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LEGENDS & ABBR.

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- BATHROOM EXHAUST FAN
- XX'-XX" EL. XX — ELEVATION ABOVE DATUM (NAVD 1988)
- 2 — REVISION DESIGNATION
- 1 — WALL TYPE, SEE A-302
- BATT INSULATION
- A-1 / L-001 — ELEVATION TAG
- A-1 / L-001 — SECTION TAG

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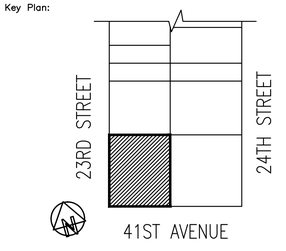
Architecture, Zoning & Building Code, Interior Design

Address : 141-52 33rd Ave. Suite 2C, Queens, NY 11354
Phone : 646-201-6853
Email : xh8310@gmail.com

No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

3RD FLOOR PLAN

Drawing No.: A-104.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

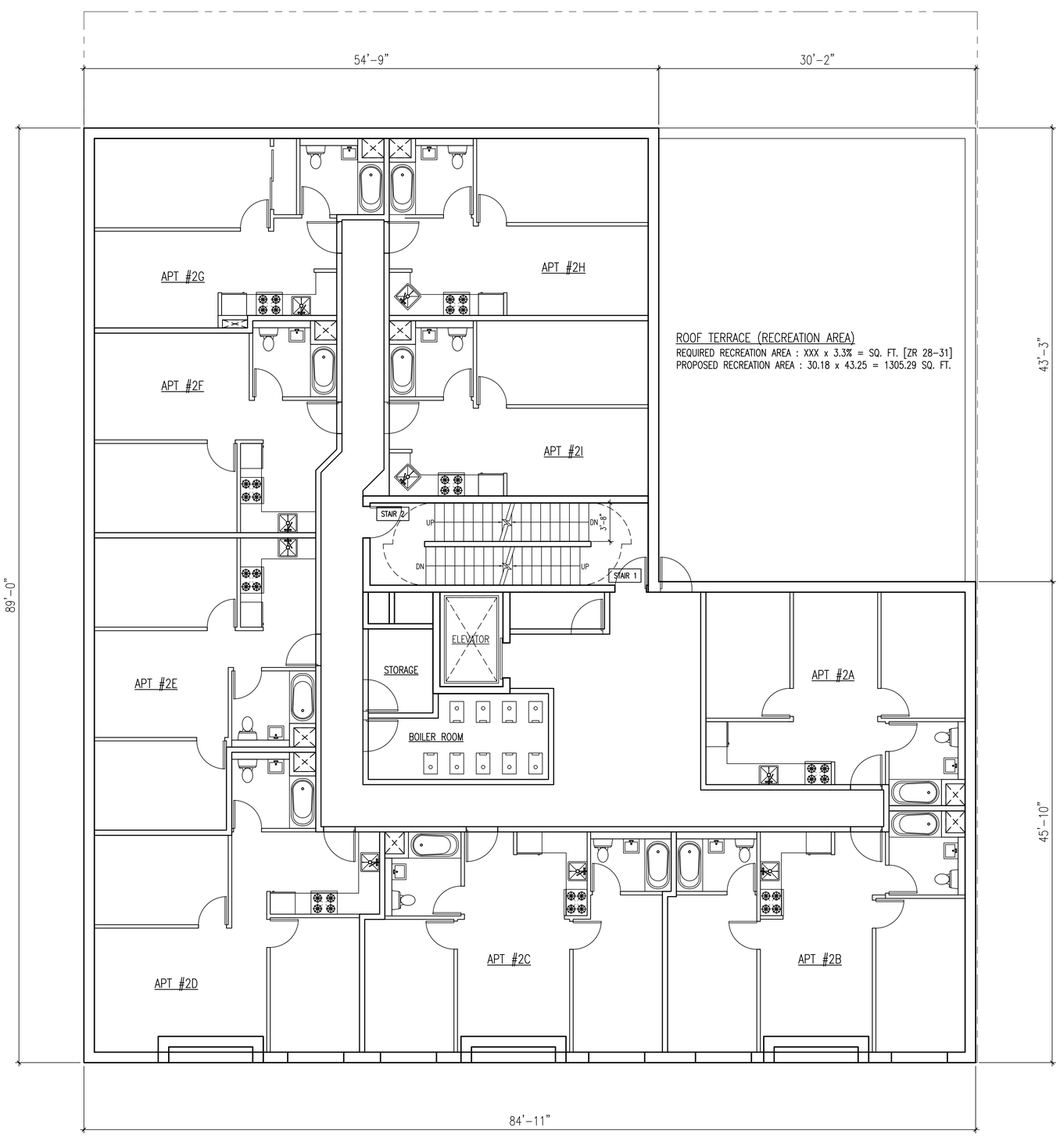
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s): X of X

Job No. / DOB Sticker:



ROOF TERRACE (RECREATION AREA)
REQUIRED RECREATION AREA : XXX x 3.3% = SQ. FT. [ZR 28-31]
PROPOSED RECREATION AREA : 30.18 x 43.25 = 1305.29 SQ. FT.

2ND FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
2. ALL THE STAIR HANDRAIL TO BE 36" MTL.
3. SEE STRUCTURE DRAWINGS FOR DETAILS.
4. SEE STRUCTURE DRAWINGS FOR COLUMN SCHEDULE.
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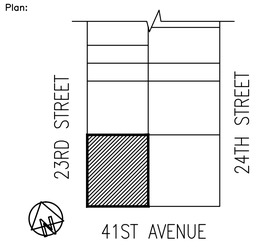
No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

2ND FLOOR PLAN

Drawing No.:

A-103.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

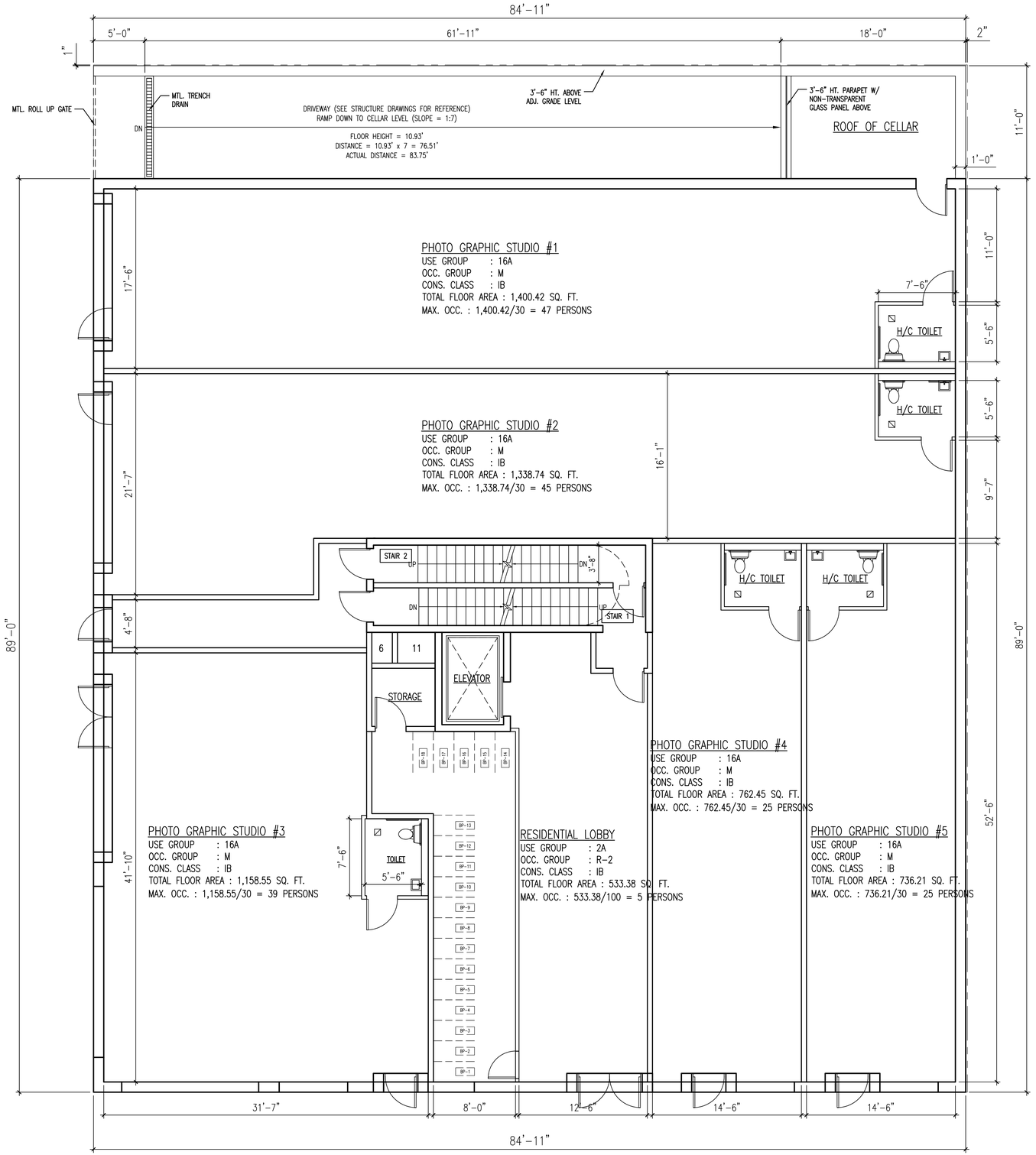
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:



1ST FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
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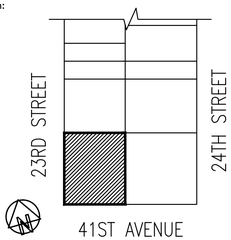
No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

1ST FLOOR PLAN

Drawing No.:

A-102.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

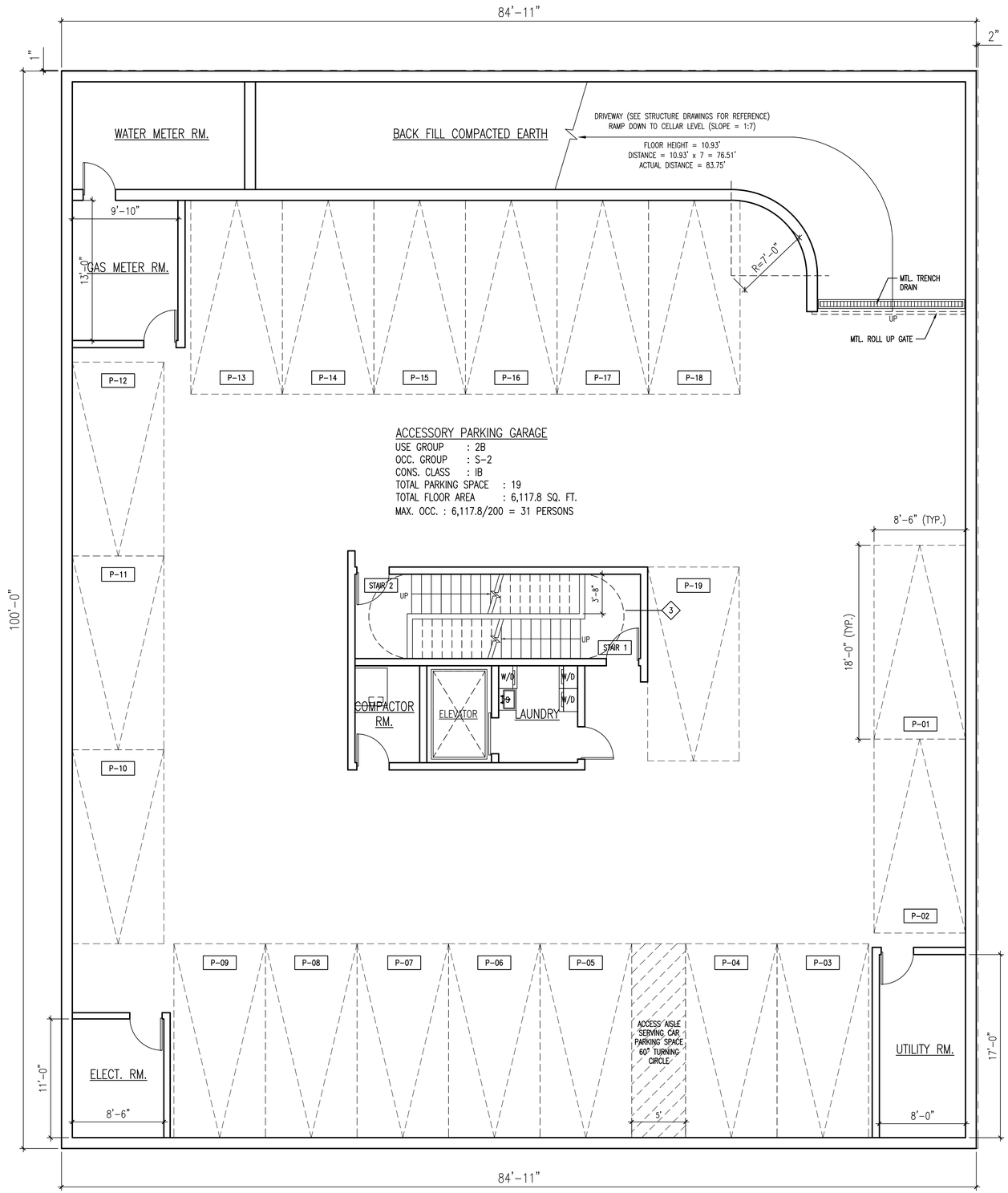
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s):
X of X

Job No. / DOB Sticker:



CELLAR FLOOR PLAN

SCALE: 3/16" = 1'-0"

NOTE:
1. ALL THE STRUCTURE COL. TO BE 3-HR. FIRE RATED ENCL.
2. ALL THE STAIR HANDRAIL TO BE 36" MTL.
3. SEE STRUCTURE DRAWINGS FOR DETAILS.
4. SEE STRUCTURE DRAWINGS FOR COLUMN SCHEDULE.
5. ELEVATOR SYSTEM, ELEVATOR PIT AND ELEVATOR MACHINE ROOM COORDINATE WITH MANUFACTURER.

LEGENDS & ABBR.

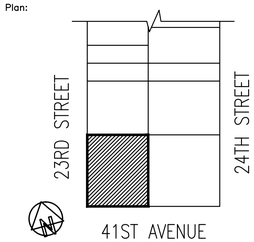
- CONCRETE FOUNDATION WALL
- MASONRY EXTERIOR WALL
- CMU MASONRY WALL
- 2-HOUR FIRE RATED PARTITION
- 1-HOUR FIRE RATED PARTITION
- INTERIOR NON-RATED PARTITION
- BRICK FINISH
- ROOF SHINGLE FINISH
- BRICK FINISH
- GRASS / PLANTER
- DOOR PANEL OPENING
- WINDOW PANEL OPENING
- SMOKE DETECTOR/CARBON MONOXIDE
- PROGRAMMABLE THERMOSTAT
- BATHROOM EXHAUST FAN
- ELEVATION ABOVE DATUM (NAVD 1988)
- REVISION DESIGNATION
- WALL TYPE, SEE A-302
- BATT INSULATION
- ELEVATION TAG
- SECTION TAG

AMERILAND BROOK LLC
Architecture, Zoning & Building Code, Interior Design

Address : 141-52 33rd Ave. Suite 2C, Queens, NY 11354
Phone : 646-201-6853
Email : xh8310@gmail.com

No.:	Date:	Revision:

Key Plan:



Project Info.:

NEW 6-STORY MIXED USE BUILDING
23-01 41ST AVENUE, L.I.C., NY 11101

Block : 408 Zone Dist. : M1-2/R6A (MIXED USE DIST.)
Lot : 5 Tax Map : 9B

Drawing Title:

CELLAR FLOOR PLAN

Drawing No.: A-101.00

NOTE: Drawing may be printed at reduced scale

Seal / Stamp:

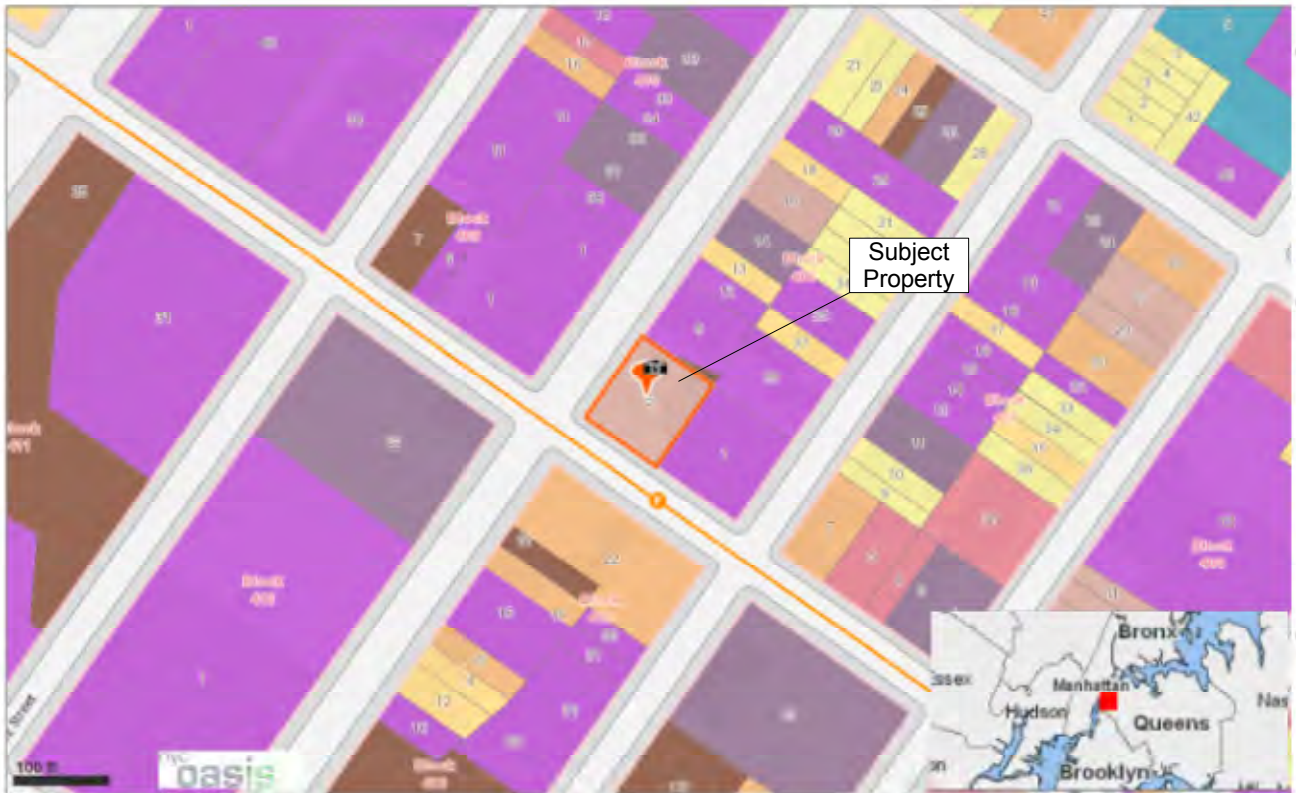
Drawn on: JAN. 1, 2015

Signature:

Drawn by: I. Carson
Checked by: X.H. Zhao

No. of Sheet(s): X of X

Job No. / DOB Sticker:



Legend

Transit, Roads, Reference Features

Roads, ferries, commuter rail, neighborhood names

- Roads
- Major Roads
- Interstate Highways
- Tunnels
- Neighborhood/Town Labels
- County Boundaries
- Ferry
- Commuter Rail
- NYC subway routes and stations

Parks, Playgrounds, & Open Space

- Parks & Public Lands
- Forested Areas (NJ)
- Community Gardens
- School property with garden
- Playgrounds
- Green Spaces Along Streets
- Golf Courses
- Baseball/Soccer/Football Fields
- Tennis/Basketball/Handball Courts & Tracks
- Cemeteries

Land Use

Block/Lot Boundaries

(Building footprints in gray)

- 1 & 2 Family Residential
- Multi-family Residential
- Mixed Use
- Open space & outdoor recreation
- Commercial
- Institutions
- Industrial
- Parking
- Transportation / Utilities
- Vacant Lots

(Not all items in the legend may be visible on the map.)

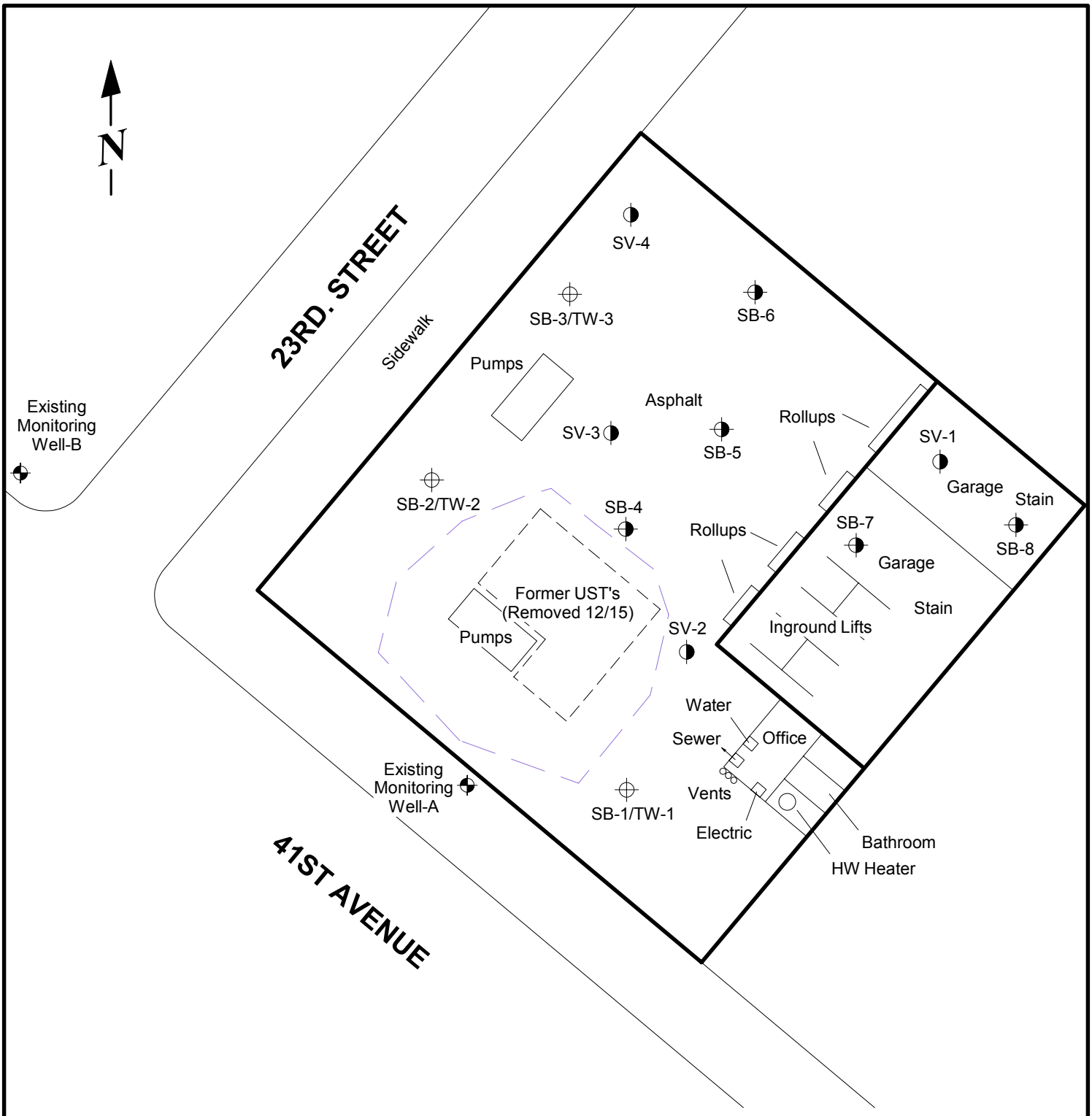
Source: oasis.net

N

Surrounding Land Use Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, New York 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.: 8092-LINY	Figure No.: 3
Date: 02/23/2015	Scale: Not To Scale



Legend

SB-1/TW-1 — Soil Boring/Temporary Well Location

SB-2 — Soil Boring Location

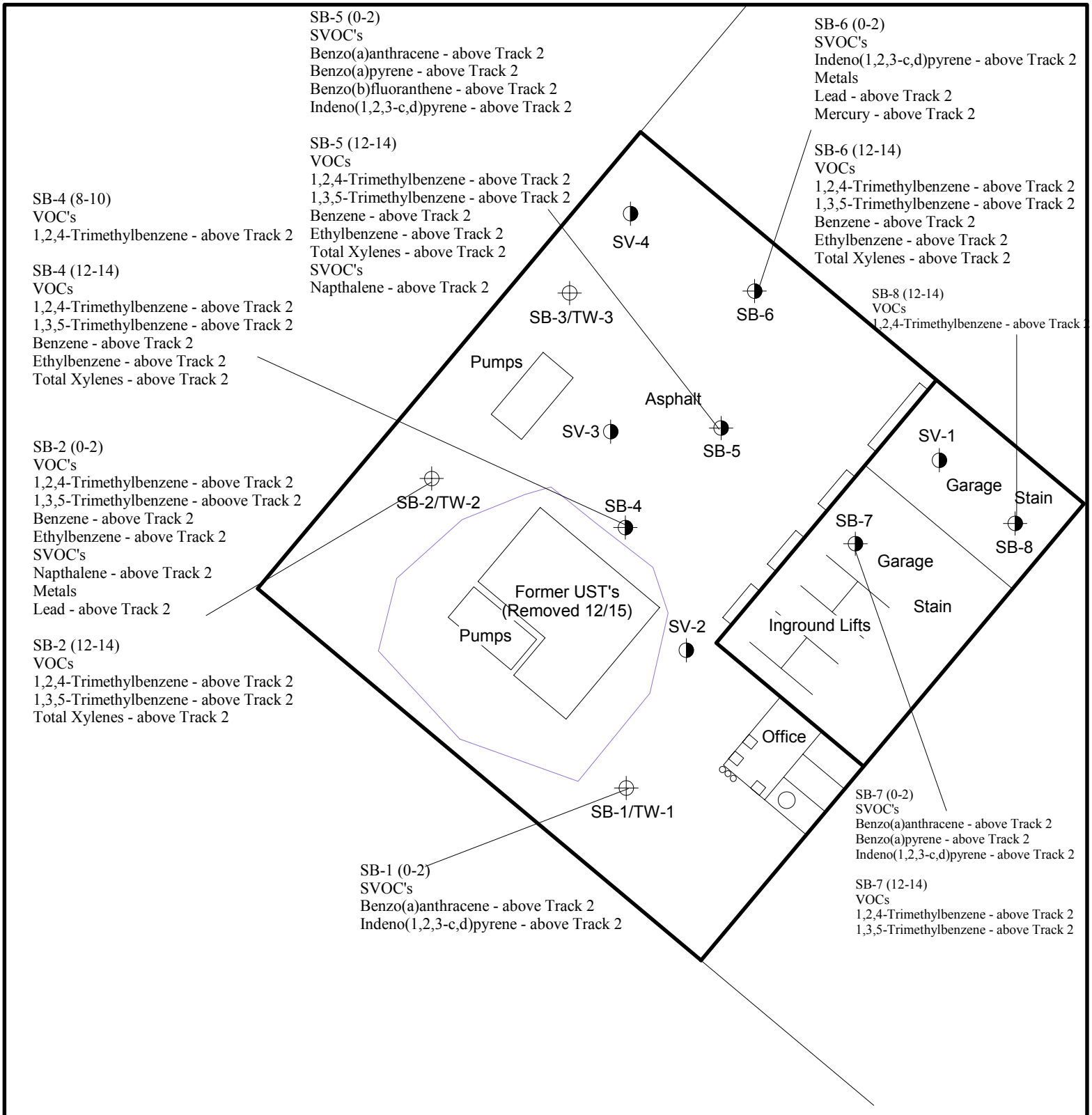
SV-1 — Soil Vapor Sampling Location

Perimeter of excavated area. Tanks removed.

Sampling Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, New York 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.: 8092-LINY	Figure No.: 4
Date: 02/23/2015	Scale: Not To Scale



Legend

SB-1/TW-1 — Soil Boring/Temporary Well Location

SB-2 — Soil Boring Location

SV-1 — Soil Vapor Sampling Location

Perimeter of excavated area. Tanks removed.

N

Soil Exceedance Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, New York 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.:8092-LINY	Figure No.: 5
Date: 02/23/2015	Scale: Not To Scale

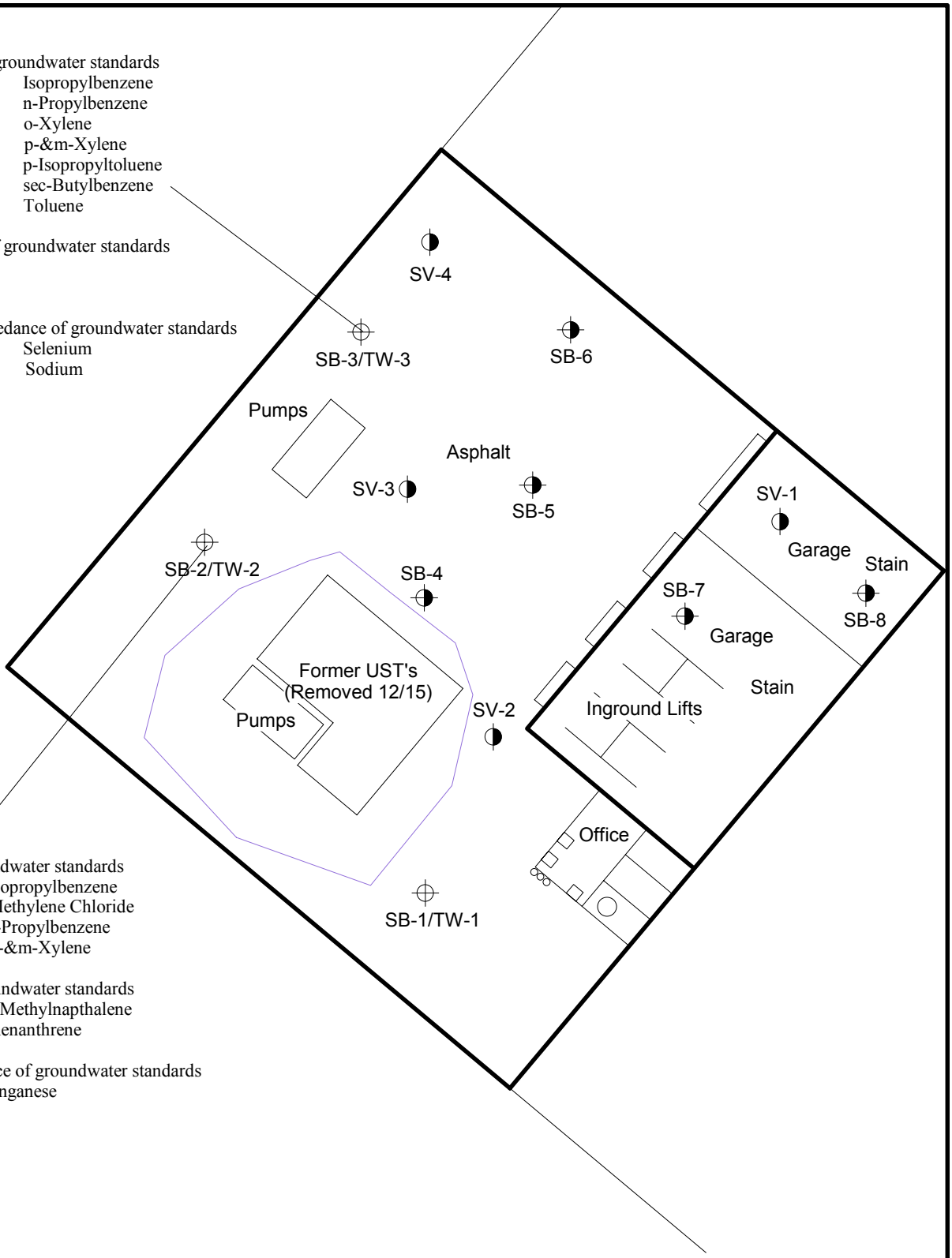
TW-3
VOC's - in exceedance of groundwater standards

1,2,4-Trimethylbenzene	Isopropylbenzene
1,3,5-Trimethylbenzene	n-Propylbenzene
Benzene	o-Xylene
Ethylbenzene	p-&m-Xylene
Methylcyclohexane	p-Isopropyltoluene
	sec-Butylbenzene
	Toluene

SVOC's - in exceedance of groundwater standards
2-Methylnapthalene
Napthalene

Dissolved Metals - in exceedance of groundwater standards

Iron	Selenium
Manganese	Sodium



TW-2
VOC's - in exceedance of groundwater standards

1,2,4-Trimethylbenzene	Isopropylbenzene
1,3,5-Trimethylbenzene	Methylene Chloride
Acetone	n-Propylbenzene
o-Xylene	p-&m-Xylene

SVOC's - in exceedance of groundwater standards

1,1'-Biphenyl	2-Methylnapthalene
Napthalene	Phenanthrene

Dissolved Metals - in exceedance of groundwater standards

Iron	Manganese
Sodium	

Legend

SB-1/TW-1 — Soil Boring/Temporary Well Location

SB-2 — Soil Boring Location

SV-1 — Soil Vapor Sampling Location

Perimeter of excavated area. Tanks removed.

N

Groundwater Exceedance Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, New York 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.:8092-LINY	Figure No.: 6
Date: 02/23/2015	Scale: Not To Scale