REMEDIAL ACTION REPORT

MAY 12, 2016

Submitted for:
West Tremont Residences
60 West 177th Street & 92 West Tremont Avenue
Bronx, NY 10453
Block 2867, Lot 125
NYC Brownfield Cleanup Program# 12CBCP016X

Submitted to:
New York City Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, NY 10038

Prepared for:
West Tremont Housing Development Fund Company Inc.
300 East 175th Street
Bronx, NY 10457

Submitted by:
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170 Keyland Court
Bohemia, NY 11716

IE Project Number:
2166-06-02-2000

REMEDIAL ACTION REPORT

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LIST OF ACRONYMS

Acronym	Definition
CAMP	Community Air Monitoring Plan
DER-10	NYS DEC Division of Environmental Remediation Technical Guidance Manual 10
EC	Engineering Control
HASP	Health and Safety Plan
IC	Institutional Control
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
ORC	Oxygen Release Compound
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SVOCs	Semi-Volatile Organic Compounds
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

CERTIFICATION

I, Joel Rogers, certify:

- I am currently a registered professional engineer licensed by the State of New York.
- I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for the West Tremont Residences site, located at 92 West Tremont Avenue, site number 12CBCP016X.
- I have reviewed this document, to which my signature and seal are affixed.
- Engineering Controls implemented during this remedial action were designed by me or a person under my direct supervision and achieve the goals established in the Remedial Action Work Plan for this site.
- The Engineering Controls constructed during this remedial action were professionally observed by me or by a person under my direct supervision and (1) are consistent with the Engineering Control design established in the Remedial action Work Plan and (2) are accurately reflected in the text and drawings for as-built design reported in this Remedial Action Report.
- The OER-approved Remedial Action Work Plan dated June 29, 2011; RAWP Addendum dated December 5, 2013 and Stipulations in a letter dated August 15, 2011 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.

Name Joel Rogers, P.E.

PE License Number 083034

Signature

Date 6/2/2016

EXECUTIVE SUMMARY

West Tremont Housing Development Fund Company Inc. has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 92 West Tremont Avenue in the Morris Heights section of Bronx, New York. A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A remedial action was performed pursuant to an OER-approved RAWP in a manner that has rendered the Site protective of public health and the environment consistent with the proposed use of the property. This RAR describes the remedial action performed under the RAWP. 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.

Site Location and Background

The Site is located at 60 West 177th Street/92 West Tremont Avenue in the Bronx, New York and is identified as Block 2867 and Lot 125 (formerly Lots 125 and 128 until lot merger in 2011) on the New York City Tax Map. The Site is 25,475-square feet and is bounded to the north by West Tremont Avenue and beyond by residential apartments, to the south by residential apartments, to the east by West 177th Street and beyond by residential apartments, to the west by residential apartments. Prior to development, the Site was unimproved/vacant land, exhibiting high topographic relief, with the highest elevation on the southwestern boundary and the lowest elevation on the northeastern boundary.

Summary of Redevelopment Plan

The Site redevelopment consisted of the construction of a five-story residential apartment building with a cellar and basement levels. The building consists of 61 apartment units from the basement to the fifth floor. The cellar level is utilized for boiler room, trash compactor room, storage and a recreational room. The basement level (above the cellar level) is utilized for storage, mechanical rooms, laundry room, a tenant lounge and three (3) residential apartment units. The excavation depth of the cellar was approximately 12.5 feet below grade. Groundwater

was not encountered during excavation activities. The new building does not cover the entire footprint of the Site. Specifically, the south eastern portion of the Site maintains a landscaped yard area with an approximate footprint of 3,600 square-feet. Approximately 1,150 square-feet of this landscaped area is covered by a concrete patio.

Summary of Surrounding Property

The contiguous properties are utilized as residential apartments. The character of the neighborhood is primarily residential apartments with few commercial retail stores maintained on the first floors. One daycare facility is located within 250 feet to the southeast of the Site and three public schools are located within a 500 foot radius of the Site

Summary of Past Site Uses of Site and Areas of Concern

The Site was formerly comprised of Lots 125 and 128. A review of historic records revealed that Lot 125 had been utilized as a dry-cleaning facility since at least 1948 to approximately 1979. The building maintained on this Lot was listed as being serviced by a fuel oil fired heating system. The historic use of Lot 128 consisted of a parking lot. Lot 125 and Lot 128 were merged on July 26, 2011, Lot 128 was dropped.

A Phase I ESA, dated June 3, 2008 was prepared by Impact Environmental. The Areas of Concern (AOCs) identified for this site include:

1. PCE and other organic carbon impacted soil area, located on the central portion of Lot 125. This area is where the former dry cleaning facility was maintained.
2. Marginally PCE impacted groundwater.
3. PCE impacted soil vapor.

Presence of historic fill throughout the Site

Summary of the Work Performed under the Remedial Investigation

The Remedial Investigation encompassed the following investigative tasks:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);

2. Installed a total of twenty-three soil borings across the entire project Site, and collected a total of forty-three soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed a total of six groundwater monitoring wells throughout the Site to establish groundwater flow and collected five groundwater samples for chemical analysis to evaluate groundwater quality;
4. Installed a total of thirteen (and one ambient sample) soil vapor probes around Site perimeter and collected thirteen samples for chemical analysis.

Summary of Findings of Remedial Investigation

1. Elevation of the property ranges from approximately 100 to 70 feet above sea level.
2. Depth to groundwater ranges from 13.64 to 15.00 feet at the Site.
3. Groundwater flow is generally from the northeast towards the south southwest, south and south southeast to beneath the Site.
4. Depth to bedrock is approximately 19 feet below existing grade (BEG) at the Site.
5. Soil/fill samples collected during the RI showed the presence of urban fill from grade to approximately 10’ below existing grade (BEG). Forty-three shallow and deep soil samples were collected and analyzed for VOCs at 23 locations. Several compounds (1,4 dichlorobenzene, toluene, acetone) were found above Track 1 SCOs at depth in one sample location (SP-4). This sample was collected in the vicinity of the former dry cleaner in the west central portion of the property and also contained a variety of other parameters below Track 1 Unrestricted SCOs, including PCE. TCE was not detected in soil at this property. All VOCs in all soil samples were below Track 2 Restricted Residential SCOs. In the first round including 27 samples, acetone was not detected. In a second round including 16 samples, acetone was detected in all samples at concentrations in a narrow range between about 25 and 60 ug/kg (including some above Track 1 Unrestricted SCOs), suggesting lab interference. A supplemental sampling round performed to delineate VOCs in the area of the dry cleaner showed that the area of predominant VOC impact was limited to the immediate area of SP-4. Overall, PCE was detected in 5 of 43 samples and all below the Track 1 Unrestricted SCOs. These findings correlate with the area of historic dry cleaning activities on Lot 125 and are probably associated with past dry cleaning operations. 1,4 dichlorobenzene was the only other

VOC detected at multiple locations and all detections were at levels well below Track 1 SCOs (except in SP-4 noted above). The findings of soil, groundwater and soil vapor do not support a significant PCE or VOC source area onsite or significant disposal onsite. Removal of all soil/fill in this area (to bedrock) was performed in the area of the former dry cleaner during the remedial action. Only three SVOCs (PAH compounds) were detected in soils at low levels and included only one exceedence of Track 1 Unrestricted SCOs in one sample. No PCBs were detected in any soil sample. Eight pesticides were detected soils on this property, including four that were identified above Track 1 Unrestricted SCOs and Track 2 Restricted Residential SCOs, and four that exceeded Track 1 Unrestricted SCOs; However these compounds did not exceed Track 2 Restricted Residential SCOs. Generally, pesticides were detected at highest concentrations in shallow soils (0-2 feet). Metals were detected in soils at levels characteristic for historical fill. Lead was detected above Track 1 in a variety of samples but only exceeded Track 2 Restricted Residential SCOs in 4 samples, and all below 700 mg/kg. Mercury was detected in a variety of samples above Track 1 SCOs but only exceeded Track 2 Restricted Residential SCOs in 3 samples and all were below 2.5 mg/kg. Barium and cadmium were also detected in at least one sample above Track 2 Restricted Residential SCOs. Other metals exhibited marginal exceedence of Track 1 Unrestricted SCOs.

6. Groundwater samples collected during the RI from five wells showed no detectable concentrations of SVOCs, pesticides or PCBs. Five VOC were detected including chloroform above TOGS in three wells and PCE and TCE slightly above TOGS in two wells and one well, respectively. VOC concentrations are relatively low and similar to the soil results, do not support significant disposal of chlorinated hydrocarbons onsite. No clear pattern of VOC occurrence in groundwater was observed. For instance, a low concentration of PCE was found in the area of the former dry cleaner but was also identified in upgradient well MW-3 and was not identified in downgradient well MW-1. Lead exceeds TOGS in unfiltered groundwater samples and barium and chromium were identified at TOGS levels in one well. These groundwater metals samples are unfiltered and exhibit evidence of turbidity. With regards to mercury, analytical MDLs exceed TOGS limits.

7. Soil vapor samples collected at eight locations during the initial sampling round showed a common occurrence of BTEX and associated derivatives at relatively low levels (most

detections were below 10 ug/m3) and suggest a local influence of automotive fuel. Sources may include onsite soils and releases along West Tremont Avenue, a major vehicular thoroughfare that is located immediately north of the property. TCE was identified in one location at trace concentrations (below 1 ug/m3) and PCE was found in 2 of eight locations, including one location hydraulic down-gradient from the former dry cleaner at a concentration of approximately 187ug/m3. These results, with other results reported for soil and groundwater, support an onsite origin of PCE, probably associated with dry cleaning operations, but does not support a significant source area onsite or significant disposal onsite. Supplemental onsite soil vapor samples collected during the second round of sampling supported this conclusion. However, several supplemental offsite background soil vapor samples, in areas where corresponding onsite soil vapor were non-detect for PCE, showed anomalously high PCE concentrations, orders of magnitude higher than found onsite, as did an ambient air sample, and suggest a possible sampling error. Acetone was found in all soil vapor samples with maximum concentrations of approximately 800 ug/m3. Acetone was identified ubiquitously in the second round of onsite soil samples independent of past usage but was not identified in any sample from the initial round, and was only found in the upgradient groundwater well (MW-3).

Summary of the Remedial Action

The remedial action achieved protection of public health and the environment for the intended use of the property. The remedial action achieved all of the remedial action objectives established for the project and addressed applicable standards, criterion, and guidance; was effective in both the short-term and long-term and reduced mobility, toxicity and volume of contaminants; was cost effective and implementable; and used standards methods that are well established in the industry.

A summary of the milestones achieved in the Remedial Action is as follows: A Pre-Application Meeting was held on December 16, 2010. A Remedial Investigation (RI) was performed between February 2010 and June 2011. A RI Report was prepared and submitted on June 25, 2011 to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A RAWP was prepared and submitted on June 29, 2011 and a Fact Sheet released on July 29, 2011 for a 30-day public comment period. A RAWP Stipulations List was prepared and submitted on September 6, 2011. The RAWP and RAWP Stipulations List were approved by the New York City Office of Environmental Remediation in a letter dated

September 7, 2011. A Pre-Construction meeting was held on August 6, 2013. A Fact Sheet providing notice of the start of the remedial action was issued in August 2013. A RAWP Addendum was scoped on October 10, 2013 with OER and was prepared and submitted on December 5, 2013. The remedial action was begun on August 20, 2013 and completed in April 2015. The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Established Track 4 Site Specific SCOs. The following Track 4 SCO's:

Contaminant	**Track 4 SCOs**
Barium	750 ppm
Cadmium	9.0 ppm
Lead	800 ppm
Mercury	1.5 ppm

4. The following excavations were performed: soil/fill was excavated to a depth of approximately 12.5 feet below grade. An elevated PCE hotspot located in the center of the Site was excavated to approximately 25 feet below grade (to bedrock). A total of 5,564.81 tons of soil/fill was excavated and removed from the property.
5. Excavated 1,716.07 tons of non-hazardous soil/fill and transported to the Cumberland County Solid Waste Complex in Millville, NJ; excavated 3,848.74 of non-hazardous soil/fill and transported to the Phase III Environmental Former NJ Zinc-West Plant in Palmerton, PA.
6. Collected and analyzed end-point samples to determine attainment of SCOs. Track 4 SCO's were achieved.
7. In situ chemical oxidation treatment (Regenesis PersulfOx) was performed in the hotspot excavation and Site groundwater, via injection wells.
8. Constructed an engineered Composite Cover System consisting of 5-inch thick reinforced concrete foundation slabs underlain by vapor barrier and compacted gravel beneath the building structure; 5-inch thick reinforced concrete slabs over the terrace areas; 16-inch thick reinforced concrete foundation walls throughout the building; minimum 2-feet of OER-approved reused onsite soil in approximately 4,000 square feet of landscaped areas (inaccessible to human traffic) to prevent human exposure to

residual soil/fill remaining under the Site. The contractor for the cover construction was Galaxy Construction.

9. Installed a Vapor Barrier System that consisted of a 20-mil Reef Industries Griffolyn high density polyethylene (HDPE) reinforced non-waterproofing vapor barrier beneath all concrete foundation slabs and behind all sub-grade concrete foundation walls. The contractor for the Vapor Barrier System construction was Impact Environmental.
10. Installed and operated a passive Sub-Slab Depressurization System consisting of four (4) separate branches (two (2) beneath basement-level foundation slab and two (2) beneath cellar-level foundation slab) constructed of 4-inch diameter schedule 80 PVC solid header pipes, 3-inch diameter schedule 80 PVC slotted screen pipes and 4-inch diameter cast iron riser pipes. The SSDS piping was installed within clean ¾ aggregate comprised of crushed recycled concrete and rock overlain with 20-mil vapor barrier membrane and 5-inch concrete foundation slab. Soil vapors are conveyed through the slotted screen pipes, through the solid header and up the riser pipes via a chase and vented above the roof level of the building. The roof vents will be finished with 4-inch steel wind-driven turbines. The contractor for the Passive Sub-Slab Depressurization System construction was Impact Environmental.
11. Although a large quantity of soil was removed as part of this remedial action and development, residual soil is present beneath the cover layer and will be subject to Site Management under this Remedial Action.
12. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
13. Mobilized site security, equipment, utility mark outs and marking & staking excavation areas.
14. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
15. Sampled and analyzed excavated media as required by disposal facilities. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transport, and disposal, and the RAWP.
16. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.

17. Submitted a RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.
18. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections will be performed annually. Inspection and Certification reports will be submitted by July 30, 2017 (for the reporting period calendar year 2016), July 30, 2018 (for the reporting period calendar years 2017) and every five years thereafter (for the reporting period consisting of the five prior calendar years). Inspection and Certification Reports will cover all calendar years since the prior reporting period.
19. Recorded a Declaration of Covenants and Restrictions with the property deed with the County Clerk that includes a listing of Engineering Controls and Institutional Controls and a requirement that management of these controls must be in compliance with an approved Site Management Plan (SMP). Institutional Controls including the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted residential uses addressed by this Remedial Action without prior notification and approval by OER.

REMEDIAL ACTION REPORT

1.0 SITE BACKGROUND

West Tremont Housing Development Fund Company Inc. has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 92 West Tremont in Morris Heights section of Bronx, New York. The boundary of the property subject to this Remedial Action is shown in **Figure 1** and include, in their entirety, Block 2867 and Lot 125. The Remedial Action was performed pursuant to the OER-approved RAWP in a manner that has rendered the property protective of public health and the environment consistent with its intended use. This RAR describes the remedial action performed under the RAWP. 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 BACKGROUND

The Site is located at 60 West 177th Street/92 West Tremont Avenue in the Bronx, New York and is identified as Block 2867 and Lot 125 (formerly Lots 125 and 128 until lot merger in 2011) on the New York City Tax Map. **Figure 1** shows the Site location. The Site is 25,475-square feet and is bounded to the north by West Tremont Avenue and beyond by residential apartments, to the south by residential apartments, to the east by West 177th Street and beyond by residential apartments, to the west by residential apartments. A map of the site boundary is shown in **Figure 2**. Prior to development, the Site was unimproved/vacant land, exhibiting high topographic relief, with the highest elevation on the southwestern boundary and the lowest elevation on the northeastern boundary.

1.2 REDEVELOPMENT PLAN

The Site redevelopment consisted of the construction of a five-story residential apartment building with a cellar and basement levels. The building consists of 61 apartment units from the basement to the fifth floor. The cellar level is utilized for boiler room, trash compactor room, storage and a recreational room. The basement level (above the cellar level) is utilized for storage, mechanical rooms, laundry room, a tenant lounge and three (3) residential apartment units. The excavation depth of the cellar was approximately 12.5 feet below grade. Groundwater was not encountered during excavation activities. The new building does not cover the entire footprint of the Site. Specifically, the south eastern portion of the Site maintains a landscaped yard area with an approximate footprint of 3,600 square-feet. Approximately 1,150 square-feet of this landscaped area is covered by a concrete patio.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The contiguous properties are utilized as residential apartments. The character of the neighborhood is primarily residential apartments with few commercial retail stores maintained on the first floors. One daycare facility is located within 250 feet to the southeast of the Site and three public schools are located within a 500 foot radius of the Site.

1.4 SUMMARY OF PAST SITE USES AND AREAS OF CONCERN

The Site was formerly comprised of Lots 125 and 128. A review of historic records revealed that Lot 125 had been utilized as a dry-cleaning facility since at least 1948 to approximately 1979. The building maintained on this Lot was listed as being serviced by a fuel oil fired heating system. The historic use of Lot 128 consisted of a parking lot. Lot 125 and Lot 128 were merged on July 26, 2011, Lot 128 was dropped.

A Phase I ESA, dated June 3, 2008 was prepared by Impact Environmental. The Areas of Concern (AOCs) identified for this site include:

1. PCE and other organic carbon impacted soil area, located on the central portion of Lot 125. This area is where the former dry cleaning facility was maintained.
2. Marginally PCE impacted groundwater.
3. PCE impacted soil vapor.
4. Presence of historic fill throughout the Site.

1.5 SUMMARY OF WORK PERFORMED UNDER THE REMEDIAL INVESTIGATION

The Remedial Investigation encompassed the following investigative tasks:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed a total of twenty-three soil borings across the entire project Site, and collected a total of forty-three soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed a total of six groundwater monitoring wells throughout the Site to establish groundwater flow and collected five groundwater samples for chemical analysis to evaluate groundwater quality;

4. Installed a total of thirteen (and one ambient sample) soil vapor probes around Site perimeter and collected thirteen samples for chemical analysis.

1.6 SUMMARY OF FINDINGS OF REMEDIAL INVESTIGATION

1. Elevation of the property ranges from approximately 100 to 70 feet above sea level.
2. Depth to groundwater ranges from 13.64 to 15.00 feet at the Site.
3. Groundwater flow is generally from the northeast towards the south southwest, south and south southeast to beneath the Site.
4. Depth to bedrock is approximately 19 feet below existing grade (BEG) at the Site.
5. Soil/fill samples collected during the RI showed the presence of urban fill from grade to approximately 10' below existing grade (BEG). Forty-three shallow and deep soil samples were collected and analyzed for VOCs at 23 locations. Several compounds (1,4 dichlorobenzene, toluene, acetone) were found above Track 1 SCOs at depth in one sample location (SP-4). This sample was collected in the vicinity of the former dry cleaner in the west central portion of the property and also contained a variety of other parameters below Track 1 Unrestricted SCOs, including PCE. TCE was not detected in soil at this property. All VOCs in all soil samples were below Track 2 Restricted Residential SCOs. In the first round including 27 samples, acetone was not detected. In a second round including 16 samples, acetone was detected in all samples at concentrations in a narrow range between about 25 and 60 ug/kg (including some above Track 1 Unrestricted SCOs), suggesting lab interference. A supplemental sampling round performed to delineate VOCs in the area of the dry cleaner showed that the area of predominant VOC impact was limited to the immediate area of SP-4. Overall, PCE was detected in 5 of 43 samples and all below the Track 1 Unrestricted SCOs. These findings correlate with the area of historic dry cleaning activities on Lot 125 and are probably associated with past dry cleaning operations. 1,4 dichlorobenzene was the only other VOC detected at multiple locations and all detections were at levels well below Track 1 SCOs (except in SP-4 noted above). The findings of soil, groundwater and soil vapor do not support a significant PCE or VOC source area onsite or significant disposal onsite. Removal of all soil/fill in this area (to bedrock) was performed in the area of the former dry cleaner during the remedial action. Only three SVOCs (PAH compounds) were detected in soils at low levels and included only one exceedence of Track 1 Unrestricted SCOs in one sample. No PCBs were detected in any soil sample. Eight pesticides were detected soils on this property, including four that were identified above Track 1 Unrestricted SCOs and Track 2 Restricted Residential SCOs, and four that exceeded Track 1 Unrestricted SCOs; However these

compounds did not exceed Track 2 Restricted Residential SCOs. Generally, pesticides were detected at highest concentrations in shallow soils (0-2 feet). Metals were detected in soils at levels characteristic for historical fill. Lead was detected above Track 1 in a variety of samples but only exceeded Track 2 Restricted Residential SCOs in 4 samples, and all below 700 mg/kg. Mercury was detected in a variety of samples above Track 1 SCOs but only exceeded Track 2 Restricted Residential SCOs in 3 samples and all were below 2.5 mg/kg. Barium and cadmium were also detected in at least one sample above Track 2 Restricted Residential SCOs. Other metals exhibited marginal exceedence of Track 1 Unrestricted SCOs.

6. Groundwater samples collected during the RI from five wells showed no detectable concentrations of SVOCs, pesticides or PCBs. Five VOC were detected including chloroform above TOGS in three wells and PCE and TCE slightly above TOGS in two wells and one well, respectively. VOC concentrations are relatively low and similar to the soil results, do not support significant disposal of chlorinated hydrocarbons onsite. No clear pattern of VOC occurrence in groundwater was observed. For instance, a low concentration of PCE was found in the area of the former dry cleaner but was also identified in upgradient well MW-3 and was not identified in downgradient well MW-1. Lead exceeds TOGS in unfiltered groundwater samples and barium and chromium were identified at TOGS levels in one well. These groundwater metals samples are unfiltered and exhibit evidence of turbidity. With regards to mercury, analytical MDLs exceed TOGS limits.

7. Soil vapor samples collected at eight locations during the initial sampling round showed a common occurrence of BTEX and associated derivatives at relatively low levels (most detections were below 10 ug/m3) and suggest a local influence of automotive fuel. Sources may include onsite soils and releases along West Tremont Avenue, a major vehicular thoroughfare that is located immediately north of the property. TCE was identified in one location at trace concentrations (below 1 ug/m3) and PCE was found in 2 of eight locations, including one location hydraulic down-gradient from the former dry cleaner at a concentration of approximately 187 ug/m3. These results, with other results reported for soil and groundwater, support an onsite origin of PCE, probably associated with dry cleaning operations, but does not support a significant source area onsite or significant disposal onsite. Supplemental onsite soil vapor samples collected during the second round of sampling supported this conclusion. However, several supplemental offsite background soil vapor samples, in areas where corresponding onsite soil vapor were non-detect for PCE, showed anomalously high PCE concentrations, orders of magnitude higher than found onsite, as did an ambient air sample, and suggest a possible

sampling error. Acetone was found in all soil vapor samples with maximum concentrations of approximately 800 ug/m3. Acetone was identified ubiquitously in the second round of onsite soil samples independent of past usage but was not identified in any sample from the initial round, and was only found in the upgradient groundwater well (MW-3).

2.0 DESCRIPTION OF REMEDIAL ACTIONS

The remedial action was performed in accordance with an OER approved Remedial Action Work Plan and achieved the remedial action objectives established for the project. The remedial action was evaluated in an alternatives analysis and was determined to be protective of human health and the environment, compliant with standards, criteria, and guidelines (SCGs), effective in the short-term, effective in the long-term, capable of attaining appropriate levels of reduction of toxicity, mobility, or volume of contaminated material, implementable, cost effective, acceptable to the community, consistent with land uses, and sustainable.

A summary of the milestones achieved in the Remedial Action is as follows: A Pre-Application Meeting was held on December 16, 2010. A Remedial Investigation (RI) was performed between February 2010 and June 2011. A RI Report was prepared and submitted on June 25, 2011 to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A RAWP was prepared and submitted on June 29, 2011 and a Fact Sheet released on July 29, 2011 for a 30-day public comment period. A RAWP Stipulations List was prepared and submitted on September 6, 2011. The RAWP and RAWP Stipulations List were approved by the New York City Office of Environmental Remediation in a letter dated September 7, 2011. A Pre-Construction meeting was held on August 6, 2013. A Fact Sheet providing notice of the start of the remedial action was issued in August 2013. A RAWP Addendum was scoped on October 10, 2013 with OER and was prepared and submitted on December 5, 2013. The remedial action was begun on August 20, 2013 and completed in April 2015.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Established Track 4 Site Specific SCOs. The following Track 4 SCO's were utilized:

Contaminant	**Track 4 SCOs**
Pesticides	Per Track 2 Restricted Residential SCOs
Barium	750 ppm
Cadmium	9.0 ppm
Lead	800 ppm
Mercury	1.5 ppm

4. The following excavations were performed: soil/fill was excavated to a depth of approximately 12.5 feet below grade surface. An elevated PCE hotspot located in the center of the Site was excavated to approximately 25 feet below grade (to bedrock). A total of 5,564.81 tons of soil/fill was excavated and removed from the property.
5. Excavated 1,716.07 tons of non-hazardous soil/fill and transported to the Cumberland County Solid Waste Complex in Millville, NJ; excavated 3,848.74 of non-hazardous soil/fill and transported to the Phase III Environmental Former NJ Zinc-West Plant in Palmerton, PA.
6. Collected and analyzed end-point samples to determine attainment of SCOs. Track 4 SCO's were achieved.
7. In situ chemical oxidation treatment (Regenesis PersulfOx) was performed in the hotspot excavation and Site groundwater, via injection wells.
8. Constructed an engineered Composite Cover System consisting of 5-inch thick reinforced concrete foundation slabs underlain by vapor barrier and compacted gravel beneath the building structure; 5-inch thick reinforced concrete slabs over the terrace areas; 16-inch thick reinforced concrete foundation walls throughout the building; minimum 2-feet of OER-approved reused onsite soil in approximately 4,000 square feet of the landscaped areas (inaccessible to human traffic) to prevent human exposure to residual soil/fill remaining under the Site. The contractor for the cover construction was Galaxy Construction.
9. Installed a Vapor Barrier System that consisted of a 20-mil Reef Industries Griffolyn high density polyethylene (HDPE) reinforced non-waterproofing vapor barrier beneath all concrete foundation slabs and behind all sub-grade concrete foundation walls. The contractor for the Vapor Barrier System construction was Impact Environmental.
10. Installed and operated a passive Sub-Slab Depressurization System consisting of four (4) separate branches (two (2) beneath basement-level foundation slab and two (2) beneath cellar-level foundation slab) constructed of 4-inch diameter schedule 80 PVC solid header pipes, 3-inch diameter schedule 80 PVC slotted screen pipes and 4-inch diameter cast iron riser pipes. The SSDS piping was installed within clean ¾ aggregate comprised of crushed recycled concrete and rock overlain with 20-mil vapor barrier membrane and 5-inch concrete foundation slab. Soil vapors are conveyed through the slotted screen pipes, through the solid header and up the riser pipes via a chase and vented above the roof level of the building. The roof vents will be finished with 4-inch steel wind-driven turbines. The contractor for the Passive Sub-Slab Depressurization System construction was Impact Environmental.

11. Although a large quantity of soil was removed as part of this remedial action and development, residual soil is present beneath the cover layer and will be subject to Site Management under this Remedial Action.
12. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
13. Mobilized site security, equipment, utility mark outs and marking & staking excavation areas.
14. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
15. Sampled and analyzed excavated media as required by disposal facilities. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transport, and disposal, and the RAWP.
16. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
17. Submitted a RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.
18. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections will be performed annually. Inspection and Certification reports will be submitted by July 30, 2017 (for the reporting period calendar year - 2016), July 30, 2018 (for the reporting period calendar years 2017) and every five years thereafter (for the reporting period consisting of the five prior calendar years). Inspection and Certification Reports will cover all calendar years since the prior reporting period.
19. Recorded a Declaration of Covenants and Restrictions with the property deed with the County Clerk that includes a listing of Engineering Controls and Institutional Controls and a requirement that management of these controls must be in compliance with an approved Site Management Plan (SMP). Institutional Controls including the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted residential uses addressed by this Remedial Action without prior notification and approval by OER.

3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN

3.1 HEALTH & SAFETY PLAN

The remedial construction activities performed under this program were in compliance with the Health and Safety Plan and applicable laws and regulations. The Site Safety Coordinator was John Herbig.

3.2 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan provided for the collection and analysis of air samples during remedial construction activities to ensure proper protections were employed to protect workers and the neighboring community. Monitoring was performed in compliance with the Community Air Monitoring Plan in the approved RAWP. The results of Community Air monitoring are shown in **Appendix E**.

3.3 SOIL/MATERIALS MANAGEMENT PLAN

The Soil/Materials Management Plan provided detailed plans for managing all soil/materials that were disturbed at the Site, including excavation, handling, storage, transport and disposal. It also included a series of controls to assure effective, nuisance free remedial activity in compliance with applicable laws and regulations. Remedial construction activities performed under this program were in compliance with the SMMP in the approved RAWP.

3.4 STORM-WATER POLLUTION PREVENTION

Storm water pollution prevention included physical methods and processes to control and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water. Remedial construction activities performed under this program were in full compliance with methods and processes defined in the RAWP for storm water prevention and applicable laws and regulations.

3.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

3.5.1 Sub-Slab Depressurization System

The June 2011 RAWP and December 2013 RAWP Addendum proposed the installation of an active Sub-Slab Depressurization System (SSDS) beneath the new building foundation slabs. The SSDS sub-slab horizontal piping and riser stubs installation was completed in December 2014, including the vapor barrier membrane and concrete foundation slab cover. Impact collected SSDS system startup soil vapor

samples from the riser stub of each SSDS branch on December 8, 2014. A PVC sampling adapter equipped with sampling ports and 4-inch 135 CFM electric inline fan was installed at each SSDS riser, an airtight connection was achieved via adjustable rubber couplings. The SSDS branches were purged approximately 3 volumes prior to connecting Summa Canisters and collected effluent soil vapor samples for a period of 2-hours. A total of three (3) soil vapor samples were collected from the SSDS risers; sample "SV-1" was collected from SSDS "Branch 4", sample "SV-2" was collected from SSDS "Branch 3", and sample "SV-3" was collected from SSDS "Branch 2". Sub slab soil vapor samples were submitted to a certified laboratory and analyzed for VOCs via TO-15. Laboratory analysis of the sub slab soil vapor samples detected trace levels of VOCs, chlorinated VOCs were detected below the DOH guidance values in one sample and marginally above DOH guidance values in two of the samples, data comparison table is included as **Table 4**. Based on the SSDS system startup sampling results, NYC OER approved the SSDS system to be converted to a Passive System in an email on December 23, 2014 (copy of approval correspondence included in **Appendix M.** The Passive SSDS is protective of public health and the environment. SSDS startup sampling data and sampling locations is included in **Appendix B**.

3.5.2 Clean Fill Cover

The June 2011 RAWP and December 2013 RAWP Addendum stipulated imported clean fill to be used as the 2-foot clean fill cap in the proposed landscaped areas. Due to construction phasing, steep slope and difficult accessibility of the landscaped areas; importing and placement of clean fill in the landscaped areas was not feasible. Under oversight of Impact, onsite soils comprised of native soils with bedrock fragments and some fill material were selected and segregated into a stockpile for proposed reuse and verification sampling. The proposed reuse material was selected on the basis that it was free of non-recyclable debris (MSW, metal, plastic, etc.) and free of odors and/or staining. In addition, the selected soil material originated from the eastern portion of the Site (former Lot 128), outside of the hotspot location. On October 17 and 29, 2013 Impact conducted PID screening and collected samples of stockpiled onsite soil for the purpose of reusing behind foundation walls and as soil berms adjacent to foundation walls and existing retaining walls which would become the landscaped areas. Onsite soil samples were submitted under proper chain of custody to a certified lab for analysis. Laboratory analysis indicated the sampled onsite soils proposed for reuse met NYCRR Part 375 Residential Soil Cleanup Objectives (SCOs). Due to the steep slope of the landscaped areas and restrictive design of the exterior terrace structures, access to the landscaped areas is restricted to all future Site occupants and visitors. The laboratory data was submitted to OER for review. On April 9, 2015, via email, OER approved the use of the onsite soil below a layer of imported topsoil layer without the need for demarcation. A copy of the approval correspondence is included in **Appendix M**. Onsite reused soil was placed in approximately

4,000 square feet of landscaped areas with a layer of topsoil placed over for plantings. This action is protective of public health and the environment. Laboratory data and comparison table of the reused onsite material located in the landscaped areas is provided in **Appendix I** and **Table 3**, respectively. Locations of reused site soil are depicted in **Figure 4**.

3.5.3 Above-ground Storage Tanks (ASTs) Disposal

On September 30, 2013, two (2) 275 gallon above-ground storage tanks (ASTs) were uncovered during excavation activities in the southwest portion of the Site. Impact inspected the (ASTs) and found them to be empty. The ASTs were crushed and appear to have been historically buried at the Site along with other garbage debris since the tanks were excavated from a matrix of soil with high amounts of C&D debris, metal, wood, plastic debris and garbage. No evidence of staining or spills was observed beneath or adjacent to the tanks. Impact reported the discovery of the tanks to OER and was included in the Daily Report. The ASTs were removed from the excavation and were set aside for proper disposal.

Due to the high amount of garbage and debris commingled in the excavated soils, laborers were instructed to remove and segregate all garbage and metals from the soil as it was excavated. All non-recyclable garbage was disposed offsite to landfills and metal debris was scraped. The ASTs were erroneously scrapped by the laborers along with other metal debris without the oversight of Impact, no scrap tickets were generated for the ASTs.

4.0 REMEDIAL PROGRAM

4.1 PROJECT ORGANIZATION

The New York State Professional Engineer responsible for overseeing implementation of this RAWP is Joel Rogers, Vice President of Impact Environmental. Implementation of the RAWP was overseen by Ben Hernandez-Salazar, Impact Environmental Closures Project Manager, and the Health and Safety Officer will be John Herbig of Impact Environmental.

4.2 SITE CONTROLS

Site Preparation

- Site work began in August 2013; perimeter fences were constructed, equipment was delivered to the Site, vegetative overgrowth and trees were removed, and soil excavation and foundation pile installation began on August 20, 2013.
- A hose was made available, and was utilized to wash down truck wheels prior to trucks leaving site on an as needed basis. Trucks were positioned on a layer of RCA while being loaded to greatly reduce the chance of onsite materials migrating offsite.

An OER Project Notice was erected at the project entrance and was in place during all phases of the Remedial Action.

Soil Screening

Soils were screened during remedial excavations, using visual, olfactory and PID measurement methods. The historical fill layer, which extended down to approximately 10 feet below grade, was comprised of brown soils mixed with substantial amounts of brick, concrete, metal, wood and garbage. None of the materials exhibited any odor or visibly significant signs of contamination, nor were any VOCs present when screening with the PID. The historical fill layer was underlain by native material comprised of medium coarse sandy soils. The native layer was also devoid of any signs of contamination.

Stockpile Management

All of the material excavated from the site was live-loaded into trucks located on West 177th Street and West Tremont Avenue, or on the Site, for immediate off-site transport and disposal.

Truck Inspection

Trucks loaded onsite were positioned within the entrance-way, and on a layer of RCA material, a measure to prevent the migration of onsite soils offsite. Otherwise, trucks were temporarily parked in the street,

and loaded across the closed sidewalk. Truck wheels were washed using a pressure hose when needed.

Site Security

The Site was surrounded by adjoining buildings on its east and south boundaries, and by an approximately 8 foot wood and chain link fence on its north and west boundaries. The Site entrances were secured using ¼" chains and heavy duty padlocks.

Nuisance Controls

No nuisances were noted during the remedial work, nor were any odor or dust complaints received. However, constant periodic dust monitoring and air quality monitoring was conducted during any and all soil disturbances, and no elevated levels were noted. During dry days when dust was more likely to be agitated, the site was wet down to suppress and potential for dust migration.

Reporting

Daily Reports

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

- 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 any 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.

All daily and monthly reports are included in **Appendix D**. Digital photographs of the Remedial Action are included in **Appendix F**.

4.3 MATERIALS EXCAVATION AND REMOVAL

Urban fill, construction and demolition debris and native soil were excavated and removed from the entire Site footprint to at least 12.5 feet below grade to allow for the installation of the building's foundation structure. Excavation depths extended to at least 25 feet below grade to allow for removal of the Hotspot.

A total of 5,564.81 tons of material were excavated from the Site. All excavated soil/fill material was exported for off-site disposal at properly licensed/regulated facilities in accordance with waste characterization sampling results, facility approvals and field screening observations. Urban/historic fill originating from the Site was transported for off-site disposal as non-hazardous material to Phase III Former NJ Zinc – West facility in Palmerton, PA.

The Hotspot was excavated in phased sections due to the steep slope of the Site. Excavation of the Hotspot was continued from existing grade until bedrock was encountered, the excavation was supported by sloping and benching the excavation until target depth was reached. Overall excavation of the Hotspot was approximately 25 feet at its deepest (bedrock) and 65 feet at its widest diameter. Coordinates of the Hotspot excavation extents were recorded with a mobile GPS unit. **Figure 3** depicts the location and coordinates of the Hotspot excavation. 1,716.07 tons of fill and native soil originating from Hotspot was transported for off-site disposal as non-hazardous material to Cumberland County Solid Waste Complex in Millville, NJ.

Approximately 800 CY of approved onsite soil meeting NYCRR Part 375 Residential SCOs was reused as backfill behind foundation walls and in the landscaped areas below topsoil layer.

A map showing the location where excavations were performed and onsite soils reused is shown in **Figure 3** and **Figure 4**.

4.4 IN SITU CHEMICAL OXIDATION

In situ chemical oxidation (ISCO) was performed utilizing Regenesis PersulfOx® applied to the base of the Hotspot excavation and injected into groundwater throughout the Site. PersulfOx is an in situ chemical oxidation reagent that destroys organic contaminants found in groundwater and soil through powerful yet controlled chemical reactions. PersulfOx is a sodium persulfate-based technology which employs a catalyst to enhance oxidative destruction of both hydrocarbon and chlorinated contaminants in the subsurface. PersulfOx is an all-in-one product with a built-in catalyst which activates the sodium persulfate component and generates contaminant-destroying free radicals.

On October 3 and 4, 2013 PersulfOx was mixed onsite with water to create an injection solution at a 15% weight/weight ratio (one (1) 55-lb bag of PesulfOx to 37 gallons of water ratio to yield 40 gallons of solution) to produce a quantity sufficient to percolate into the groundwater table. Approximately 760 gallons of PersulfOx solution was applied to the Hotspot by spraying the mixture in the base of the hotspot post-excavation and off-site disposal of contaminated hotspot soils. Approximately 640 gallons PersulfOx was applied to groundwater via five (5) injection wells installed throughout the Site. Each

injection well was installed to a depth of 15-20 feet below existing grade (to top of bedrock) and were comprised of 5-feet of 2-inch diameter 0.02" slotted schedule 40 PVC screen pipe and 10-15 feet of 2-inch diameter solid schedule 40 PVC riser pipe. The well screen annulus was filled with clean filter sand and the solid riser annulus was filled with bentonite creating a competent seal to the surface. The contractor for the ISCO injections was Impact Environmental. Locations of ISCO applications are depicted in **Appendix K.** Specifications of PersulfOx are included in **Appendix K**.

4.5 END POINT SAMPLE RESULTS

A total of fifteen (15) representative endpoint samples were collected from the site. All samples were placed in pre-cleaned laboratory supplied sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to New York State ELAP certified lab (11148), Alpha Analytical Laboratories of Westborough, Massachusetts. Analyte lists varied from the Hotspot end point samples and the bottom of development excavation end point samples. Laboratory analysis was conducted following the following methodology:

- Volatile Organic Compounds (VOCs) by EPA method 8260C;
- Semi-Volatile Organic Compounds (SVOCs) by method 8270D;
- Polychlorinated Biphenyls (PCBs) by method 8082A;
- Pesticides by methods 8081 and 8151, and;
- Metals by method 6010C, with Mercury by method 7471.

No light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL) was detected in any of the samples.

Hotspot End Point Samples

Following the Hotspot excavation; one (1) sample was collected from the bottom of the Hotspot excavation terminal depth and four (4) samples were collected from the sidewalls of the Hotspot excavation extents. Bottom of Hotspot sample designated EP-1was analyzed for NYCRR Part 375 list VOCs, SVOCs, Pesticides, PCBs, and Metals. 'Hotspot' sidewall samples designated HS-N, HS-S, HS-E, and HS-W were analyzed for chlorinated VOCs only. The laboratory analysis of the Hotspot end point and sidewall samples found the following:

- No target VOCs were detected in any of the Hotspot bottom sample (EP-1) or hotspot sidewall samples above Track 2 Restricted Residential SCOs (HS-N, HS-S, HS-E, and HS-W) Track 4 SCOs did not include VOCs).
- No SVOCs were detected in the Hotspot bottom endpoint sample, EP-1, above Track 2 Restricted Residential SCOs (Track 4 SCOs did not include SVOCs).
- No Pesticides were detected in the Hotspot bottom endpoint sample, EP-1, above Track 4 SCOs.
- No PCBs were detected in the Hotspot bottom endpoint sample, EP-1, above Track 2 Restricted Residential SCOs (Track 4 SCOs did not include PCBs).
- No target Metals were detected above Track 4 SCOs in Hotspot bottom endpoint sample, EP-1.

Post-Excavation End Point Samples

Following the redevelopment/remedial excavations; ten (10) samples were collected from the bottom of the development excavation terminal depth. Bottom of redevelopment excavation samples designated EP-2, EP-3, EP-4, EP-5, EP-6, EP-7, EP-8, EP-9, EP-10 and EP-11 were analyzed only for trigger analytes for which Track 4 SCO exceedance was identified (Metals and Pesticides). The laboratory analysis of post-excavation end point samples found the following:

- No Pesticides were detected above their respective Track 4 SCOs.
- No target Metals were detected above their respective Track 4 SCOs.

Track 4 Soil Cleanup Objectives (SCOs) were proposed for this project. The site was successfully remediated to Track 4 SCOs based on the analyzed target compounds in the post redevelopment excavation end point samples. The SCOs for this Site are listed in **Table 1**. Soil and materials management on-Site and off-Site, including excavation, handling and disposal, was conducted in accordance with the Soil/Materials Management Plan in Appendix C of the RAWP.

Although the aforementioned exceedances remain in soils beneath the development, the new building foundation and concrete terrace structures will encompass a majority of the foot print of the property. The landscaped areas are covered with reused soil meeting NYCRR Residential SCOs and covered with topsoil and grass vegetation. The landscaped areas are inaccessible to future Site residents and visitors due to the restrictive layout of the terrace structures and steep slope of the landscaped areas. Furthermore, an OER approved 20 mil vapor barrier membrane, passive SSDS and concrete composite layer (foundation structure and terrace) have been installed to eliminate the possibility of migration of the remaining contamination into the building, therefore eliminating any exposure pathways to the buildings future residents. Finally, potential future exposures from soil excavation after the completion of the

Remedial Action will be addressed by the development and implementation of the Site Management Plan in this RAR. On the basis of this evaluation, management of these soils in place was determined to be protective of public health and the environment.

A map of end-point sample locations is shown in **Figure 3**. A tabular summary of end-point sampling results compared to SCO's is included in **Table 1**.

4.6 MATERIALS DISPOSAL

Impact Environmental conducted in-situ waste characterization of the soil/fill material throughout the Site in anticipation of the soil excavation required for construction of the building foundation. Sampling was conducted to identify and quantify the contaminants in the Site soil/fill. The characterization samples were collected from existing grade to 12.5 feet below grade for the general excavation and to approximately 25 feet below grade within the Hotpot, samples collected at a frequency of 1 sample per 1,000 cubic yards. Across the site, the historical fill layer was found to extend to approximately 10 feet below grade, while the native layer existed directly below this fill layer. Each waste characterization sample comprised of one discrete grab sample and one five-point composite sample. The samples were properly containerized into jars for transport under active chain of custody and submitted for analysis at a certified laboratory.

Urban fill, construction and demolition debris and native soil were excavated and removed from the entire Site footprint, outside of the Hotspot, to at least 12.5 feet below grade to allow for the installation of the building's foundation structure. Excavation depths extended to at least 25 feet below grade to allow for the excavation of the Hotspot.

A total of 5,564.81 tons of soil/fill material was exported for off-site disposal to the approved facilities between September 26, 2013 and October 30, 2013. Excavated soil/fill was transported to Impact Recovery and Reuse Center in Lyndhurst NJ for transload to the appropriate end-use disposal facility based on material origination and waste characterization data. The fill material encountered at the site contained high amounts of C&D debris comprised of concrete, brick and rock. This C&D debris was disposed off-site commingled along with the soil/fill material to the approved disposal facilities in accordance with the respective facility permits. All non-recyclable waste (e.g. wood, metal, plastic, municipal solid waste) was removed from the excavated soil/fill by laborers and excavator prior to offsite disposal. Non-recyclable waste, along with construction waste was disposed off-site by the General Contractor. The material type, quantity and disposal location of the soil/fill materials removed and disposed off-site is presented below:

Disposal Location/Address	Type of Material	Quantity
Cumberland County Solid Waste Complex 2 North High Street, Millville, NJ Via **Impact Reuse & Recovery Center** 1000 Page Avenue, Lyndhurst, NJ	Non-Hazardous Soil (VOC Hotspot Material)	1,716.07 tons
Phase III Environmental LLC 1120 Mauch Chunk Rd., Palmerton, PA	Non-Hazardous Soil	3,848.74 tons
Total Soil/Fill Disposed Off Site		**5,564.81 tons**

Letters from Impact Environmental on behalf of West Tremont Housing Development Fund Company Inc. to disposal facility providing materials type, source and data, and acceptance letters from disposal facility stating it is approved to accept above materials are attached in **Appendix G**. Manifests are included in **Appendix H**.

4.7 BACKFILL IMPORT

Under oversight of Impact, onsite soils comprised of native soils with bedrock fragments and some fill material were selected and segregated into a stockpile for proposed reuse and verification sampling. The proposed reuse material was selected on the basis that it was free of non-recyclable debris (MSW, metal, plastic, etc.) and free of odors and/or staining. In addition, the selected soil material originated from the eastern portion of the Site (former Lot 128), outside of the hotspot location. On October 17 and 29, 2013 Impact conducted PID screening and collected samples of stockpiled onsite soil for the purpose of reusing behind foundation walls and as soil berms adjacent to foundation walls and existing retaining walls which would become the landscaped areas. Onsite soil samples were submitted under proper chain of custody to a certified lab for analysis. Laboratory analysis indicated the sampled onsite soils proposed for reuse met NYCRR Part 375 Residential Soil Cleanup Objectives (SCOs) and were approved for onsite reuse by OER via email on April 9, 2015. A copy of the approval email correspondence is included in **Appendix M**. A comparison table of onsite reused material is included as **Table 2**. A plan showing the location of onsite soils reused as backfill is shown in **Figure 4**. Onsite reused soil was placed in approximately 4,000 square feet of landscaped areas with a layer of topsoil placed over for plantings. Importation of backfill was not required for this Site.

4.8 DEMARACTION

Soil below the final cover is residual soil that will be addressed by site management under this remedial action. A demarcation layer consisting of orange mesh construction fencing was placed at the base of the Hotspot excavation.

5.0 ENGINEERING CONTROLS

Engineering Controls were employed in the Remedial Action to address residual soil remaining at the site. The Site has three (3) primary Engineering Control Systems. These are:

1. A Composite Cover System consisting of concrete building foundation slab, walls and reused soil 2-foot cap meeting Residential SCOs;
2. A Vapor Barrier Membrane System;
3. A passive Sub Slab Depressurization System.

5.1 COMPOSITE COVER SYSTEM

Exposure to residual soil/fill is prevented by an engineered Composite Cover System that has been built on the Site. This Composite Cover System is comprised of a 5-inch thick reinforced concrete slab installed over compacted crushed stone and concrete sub-base throughout the extent of the building footprint; 5-inch thick reinforced concrete slab throughout the terrace structures; 16-inch thick reinforced concrete foundation walls; and a 2-foot cap comprised of approved reused onsite soils in open space landscape areas. The contractor for the Composite Cover System construction was Galaxy Construction.

Appendix A shows the as-built design for each remedial cover type used on this Site. **Figure 4** shows the location of each cover type built at the Site. Photographs of construction of the Composite Cover System are included throughout the Daily Reports provided in **Appendix D**, and sections of the Photo Log provided in **Appendix F**.

5.2 VAPOR BARRIER SYSTEM

Exposure to soil vapor is prevented by a Vapor Barrier System that has been built on the Site. This Vapor Barrier System consists of 20-mil Reef Industries Griffolyn high density polyethylene (HDPE) reinforced non-waterproofing vapor barrier beneath all concrete foundation slabs, behind all sub-grade concrete foundation walls and beneath elevator pit concrete slab and walls. The vapor barrier system was installed in accordance to the manufacture's specifications. All seems were overlapped a minimum of 6-inches and adhered with double sided asphaltic tape; all utility penetrations were sealed with Griffolyn pipe boots placed over the penetrating pipe or conduit and overlapping the underlying vapor barrier membrane by a minimum of 6-inches and adhered with double sided asphaltic tape The professional engineer for the Vapor Barrier System was Joel Rogers. The contractor for the Vapor Barrier System construction was Impact Environmental.

Appendix B shows the as-built design, installation locations and specifications for the Vapor Barrier System used on this Site. Photographs of installation of the Vapor Barrier System are included throughout the Daily Reports provided in **Appendix D**, and sections of the Photo Log provided in **Appendix F**.

5.3 PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM

Exposure to soil vapor is prevented by a passive Sub-Slab Depressurization System that has been built on the Site. This SSDS consists of four (4) separate branches (two (2) beneath basement-level foundation slab and two (2) beneath cellar-level foundation slab) constructed of 4-inch diameter schedule 80 PVC solid header pipes, 3-inch diameter schedule 80 PVC slotted screen pipes and 4-inch diameter cast iron riser pipes. The SSDS piping was installed within 10-inches of clean ¾ crushed aggregate comprised of crushed recycled concrete and rock overlain with 20-mil vapor barrier membrane and 5-inch concrete foundation slab. Each SSDS branch is laid out with a solid horizontal header pipe connecting several horizontal slotted screen pipes; each header is connected to a steel vertical riser stub, which in turn, connects to cast iron risers extending through the building floors to the vent above each roof line. Each of the four SSDS branches provide the correct coverage in accordance with USEPA sub-slab depressurization design specifications which recommend a separate vent branch/loop for every 4,000 square-feet of slab area. Soil vapors are conveyed through the slotted screen pipes, through the solid header and up the riser pipes via a chase and vented above the roof levels of the building. The roof vents will be finished with 4-inch steel wind-driven turbines. The design engineer was Joel M. Rogers, P.E. and installation contractor for the passive Sub-Slab Depressurization System construction was Impact Environmental

Appendix C shows the as built design for the SSDS used on this Site. Photographs of installation of the SSDS are included throughout the Daily Reports provided in **Appendix D**, and sections of the Photo Log provided in **Appendix F**.

6.0 INSTITUTIONAL CONTROLS

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. Adherence to these Institutional Controls is required by the Declaration of Covenants and Restrictions recorded with the deed for this property and will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls for this property are:

(1) Recording of an OER-approved Declaration of Covenant and Restrictions (DCR) with the deed with the Bronx County Clerk. The recorded DCR is included as **Appendix L**. The DCR includes a description of all ECs and ICs, summarizes the requirements of the Site Management Plan, and notes that the property owner and property owner's successors and assigns are required to comply with the approved SMP;
(2) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of EC's and IC's. The property owner and property owner's successors and assigns will inspect EC's and IC's and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;
(3) Engineering Controls will not be discontinued without prior OER approval;
(4) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's;
(5) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
(6) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
(7) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;
(8) The Site is intended to be used for restricted residential use and will not be used for a higher level of use without prior approval by OER.

7.0 SITE MANAGEMENT PLAN

Site Management is the last phase of the remedial process and begins after the approval of the Remedial Action Report (RAR) and issuance of the Notice of Completion (NOC) by OER. It is the responsibility of the property owner to ensure that all Site Management responsibilities are performed. The penalty for failure to implement the SMP includes revocation of the Notice of Completion and all associated certifications and liability protections.

Engineering Controls and Institutional Controls have been incorporated into this Remedial Action to ensure that the site remains protective of public health and the environment. Generally, EC's provide physical protective measures and IC's provide restrictions on Site usage and establish remedial operation, maintenance, inspection and certification measures. This Site Management Plan has been established to govern long-term performance of EC's and IC's for this property.

The SMP provides a detailed description of procedures required to manage residual material at the Site following the completion of remedial construction in accordance with the NYC Voluntary Cleanup Agreement with OER. This includes: (1) operation and maintenance of Engineering Controls; (2) inspection of EC's and IC's; and (3) certification of performance of EC's and IC's.

7.1 ENGINEERING CONTROLS

Engineering Controls were employed in the remedial action to address residual materials remaining at the site. The Site has three (3) Engineering Control Systems. Engineering Controls for this property are:

1. A Composite Cover System consisting of concrete building foundation slab, walls and reused soil 2-foot cap meeting Residential SCOs;
2. A Vapor Barrier Membrane System;
3. A passive Sub Slab Depressurization System.

7.1.1 Operation and Maintenance of Composite Cover System

Chapter 5 describes the Composite Cover System utilized in this Remedial Action and provides as-built design details and the location of each cover type. The Composite Cover System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP. A Soil/Materials Management Plan is included in this Site Management Plan and outlines the procedures to be followed in the event that the composite cover system and underlying residual soil/material must be disturbed after the Remedial Action is complete.

The Composite Cover System does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the system according to the original design and tying newly constructed cover layers into existing cover layers to form a continuous layer(s).

The basement slab, foundation walls and landscaped areas soil cover will be routinely inspected by the property manager at specified intervals defined in this SMP. This inspection will look to identify any cracks, fissures, or damage to the composite cover that might compromise its integrity with regards to the exposure to residual soils beneath the structure.

7.1.2 Operation and Maintenance of Vapor Barrier System

Chapter 5 describes the Vapor Barrier System utilized in this Remedial Action and provides as-built design details and the system location. The Vapor Barrier System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The Vapor Barrier System does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the vapor barrier layers and sealing the newly constructed materials with existing barrier materials in accordance with manufacturer specifications.

7.1.3 Operation and Maintenance of Passive Sub-Slab Depressurization System

Chapter 5 describes the Passive Sub-Slab Depressurization System (SSDS) utilized in this Remedial Action and provides as-built design details and the system location. The SSDS is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The Passive SSDS is designed to provide an uninterrupted air flow for soil vapors to be passed from beneath the building structure to the atmosphere by use of the riser routed through the conditioned space of the building, thereby relying on the convective flow of air upward in the vent and aided by wind-driven turbines installed at the roof-level pipe vent, to draw air from beneath the slab. The Passive SSDS does not require any special operation or maintenance activities. The riser penetration through the concrete foundation slab, sections of exposed riser pipe within the building and roof, and the effluent vent cap will be routinely inspected by the property manager at specified intervals defined in this SMP. This inspection

will look to identify any damage to the riser and vent cap that might compromise or obstruct the air flow through the SSDS system from sub-slab piping to exhaust vents at roof.

7.2 INSTITUTIONAL CONTROLS

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. Adherence to these Institutional Controls is required under the Site Management Plan established for this Remedial Action and the Declaration of Covenants and Restrictions recorded with the deed for this property and will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls are also designed to prevent future exposure to residual soil/materials by controlling disturbances in the subsurface, restrict higher uses of the property than those addressed by the Remedial Action and establish restrictions on activities and site usage. Institutional Controls for this property are:

(1) Recording of an OER-approved Declaration of Covenant and Restrictions (DCR) with the deed with the Bronx County Clerk. The recorded DCR is included as **Appendix L**. The DCR includes a description of all ECs and ICs, summarizes the requirements of the Site Management Plan, and notes that the property owner and property owner's successors and assigns are required to comply with the approved SMP;
(2) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of EC's and IC's. The property owner and property owner's successors and assigns will inspect EC's and IC's and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;
(3) Engineering Controls will not be discontinued without prior OER approval;
(4) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's;
(5) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
(6) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
(7) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;

(8) The Site is intended to be used for restricted residential use and will not be used for a higher level of use without prior approval by OER.

7.3 INSPECTIONS

Engineering Controls and Institutional Controls will be inspected on an annual basis. The inspections will evaluate the following:

- If Engineering Controls or Institutional Controls employed at the Site continue to perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of the Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If site records are complete and up to date; and
- General Site conditions at the time of inspection.

In an addition, if an emergency occurs, such as a natural disaster, or if an unforeseen failure of any of the Engineering Controls occurs, an inspection of the Site will be performed within 30 days to evaluate the Engineering Controls and a letter report of findings will be submitted to OER.

7.3.1 Inspection of Composite Cover System

Inspection of the composite cover will consist of a visual inspection of concrete slab and concrete foundation walls, and will include all accessible locations including the site perimeter and all internal access points on the ground floor. The inspector will document any faulty or defective conditions observed during the inspection, broken or damaged concrete, or any failure in the integrity of the floor that would compromise the ability of the composite cover to perform as an engineering control.

7.3.2 Inspection of Vapor Barrier System

The vapor barrier system will be inspected by a qualified environmental professional to assure that it is functioning properly. The vapor barrier system is not visible and cannot be directly inspected. However, it can be inspected simultaneously with inspection of the building slab. If the inspector observes a failure in the slab that exposes the vapor barrier, then the underlying vapor barrier will be inspected for any damage, including tears or perforations, which would prevent the vapor barrier from completing its

intended purpose. Cracks, holes, perforations or slab disturbances shall be recorded and remediated as appropriate.

7.3.3 Inspection of Passive Sub-Slab Depressurization System

The passive SSDS will be inspected by a qualified environmental professional to assure that it is functioning properly. The sub-slab components of the passive SSDS are not visible and cannot be directly inspected, however they can be inspected simultaneously with inspection of the building slab and/or vapor barrier membrane. The visible sections of the passive SSDS riser components should be inspected for damage such as cracks, penetrations and integrity of pipe joints. The riser exhaust pipes at the roofs should be inspected for the integrity of the rain cap or any obstructions that my impede air flow through the SSDS from sub-slab piping through the riser to roof effluent. Observed damage to the SSDS components shall be recorded and remediated as appropriate by qualified contractors.

7.3.4 Site Use Prohibitions

Inspections to evaluate the status of site use prohibitions will include an evaluation of whether there is vegetable gardening or farming in residual soil/fill; whether groundwater underlying the site has been used without treatment rendering it safe for its intended use; whether activities that have disturbed site soil/fill have been conducted pursuant to the Soil/Material Management provisions of the SMP, or otherwise approved by OER; and whether the site has been used for a higher level of use other than the restricted residential use addressed by the Remedial Action.

7.3.5 Inspection and Certification Letter Report

Results of inspections performed during a reporting period and certification of performance of all Engineering Controls and Institutional Controls will be included in an Inspection and Certification Letter Report. Inspections will be performed in 2016, 2017 and every five (5) years thereafter. Inspection and Certification Letter Reports will be submitted by July 30, 2017 (for the reporting period calendar year 2016), July 30, 2018 (for the reporting period calendar year 2017) and every five (5) years thereafter (for the reporting period consisting of the number prior calendar years). Inspection and Certification Reports will cover all calendar years since the prior reporting period. Inspection and Certification Letter Reports will be submitted to OER in digital format. The letter report will include, at a minimum:

- Date of inspections;
- Personnel conducting inspections;
- Description of the inspection activities performed;
- Any observations, conclusions, or recommendations;

- Copy of any inspection forms;
- A determination as to whether groundwater plume conditions, if any, have changed since the last reporting event; and
- Certification of the performance of Engineering Controls and Institutional Controls, as discussed below.

The certification of the performance of EC's and IC's will establish:

- If Engineering Controls or Institutional Controls employed at the Site continue to be in place and perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this Site Management Plan has been maintained;
- If vegetable gardening and farming in residual soils has been prevented;
- If groundwater underlying the Site is being utilized without treatment rendering it safe for the intended purpose has been prevented;
- If activities on the Site that have disturbed residual soil/fill material have been in accordance with the Soil/Materials Management Plan in this SMP;
- If the Site has been used for a higher level of use other than the restricted residential use addressed by the Remedial Action;
- If site records are complete and up to date;
- If the Site continues to have an OER-approved Declaration of Covenants and Restrictions recorded with the property deed by the Bronx County Clerk.

OER may enter the Site upon notice for the purpose of evaluating the performance of EC's and IC's.

7.4 NOTIFICATIONS

Notifications will be submitted by the property owner to OER as described below:

- 60-day advance notice of any proposed changes in Site use, such as an upgrade from existing use to unrestricted use that was not contemplated is the Remedial Action.
- Notice within 30 days of any emergency, such as a fire, flood, or earthquake that has the potential to reduce the effectiveness of Engineering Controls in place at the Site.

7.5 SOIL/MATERIALS MANAGEMENT PLAN

Any future intrusive work that will disturb residual soil/fill beneath the property, including modifications or repairs to the existing composite cover system, will be performed in compliance with this Soil/Materials Management Plan (SMMP). Intrusive work will also be conducted in accordance with the procedures defined in the Community Air Monitoring Plan (CAMP) included in this chapter and a Construction Health and Safety Plan (HASP). The HASP is the responsibility of the property owner and should be in compliance with NYSDEC DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and City regulations. Intrusive construction work should be compliant with this SMMP and described in the next Inspection and Certification Letter Report.

7.5.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional (QEP). Soil screening will be performed during any future intrusive work.

7.5.2 Stockpile Methods

Stockpiles will be used to isolate excavated soil 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 6-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.

7.5.3 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. Excavated soil will only be reused on-site with prior approval by OER.

7.5.4 Materials Excavation, Load-Out and Departure

The PE/QEP overseeing the remedial action will:

- oversee intrusive 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 management plan;
- ensure that Site maintenance activities and maintenance-related grading cuts will not interfere with, or otherwise impair or compromise the remedial measures established during the remediation construction phase;
- 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 intrusive work.

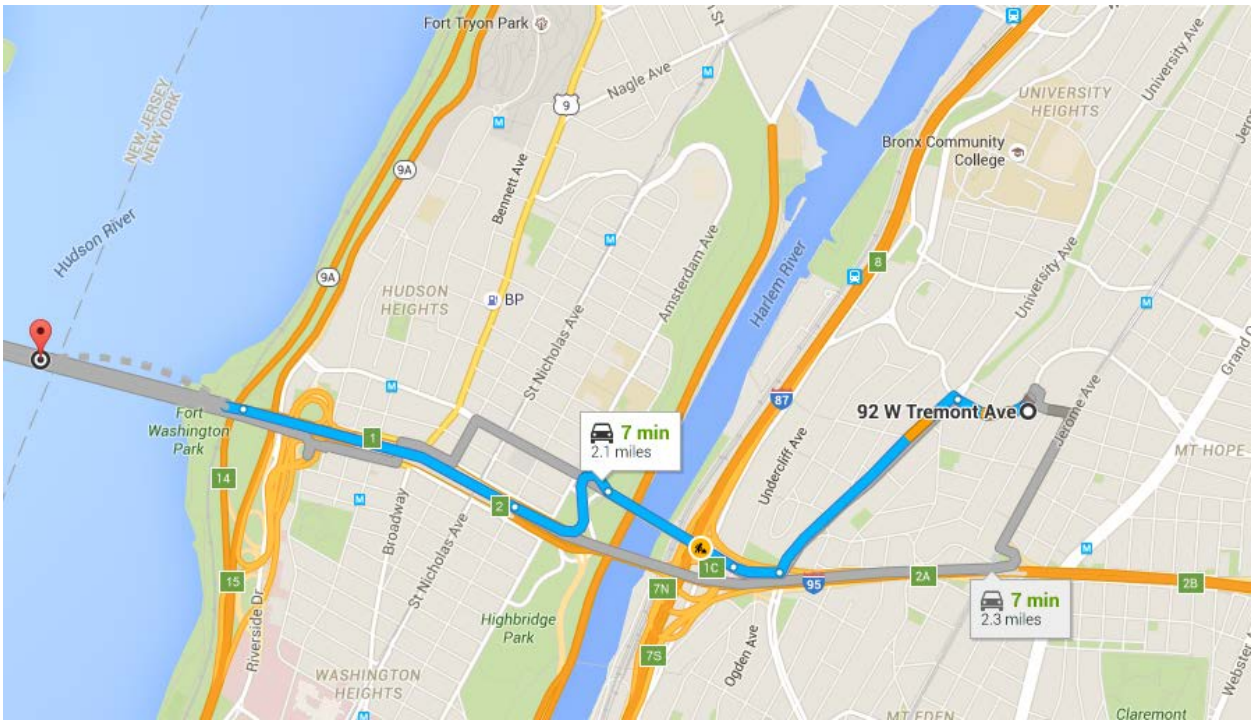
Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

7.5.5 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.

Outbound truck transport routes are shown on the figure below. 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.



92 W Tremont Ave

Bronx, NY 10453

1. Head southwest on W Tremont Ave toward Grand Ave
2. Turn left onto Dr Martin Luther King Jr Blvd/University Ave
3. Turn right onto the G Washington Br/Amsterdam Ave ramp to Interstate 95 S/US 1 S/Manhattan
4. Continue onto Washington Bridge
5. Use the right lane to take the Interstate 95 S ramp
6. Merge onto Interstate 95 Upper Level S/US-1 Upper Level S
   Entering New Jersey
7. Continue onto U.S. 9 S/Interstate 95 Upper Level S/US-1 Upper Level S

7.5.6 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 Brooklyn, 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.

Documentation associated with disposal of all material will include records and approvals for receipt of the material. 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 retained and included in the following Inspection and Certification Report. A manifest system for off-Site transportation of exported materials will be employed. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

7.5.7 Materials Reuse On-Site

All of the soil excavated during any future repair or construction purposes will be placed in the same excavation it was derived from or will be disposed of off-site unless otherwise approved by OER beforehand.

7.5.8 Repair of Remedial Systems

After completion of invasive work, any damage of the engineering controls (composite cover system, vapor barrier, etc.) will be restored to the original condition established during initial construction.

7.5.9 Import of Backfill Soil from Off-Site Sources

In the event that soil importation is needed for the backfilling purposes, this Section presents the requirements for imported fill materials. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives including NYSDEC Part 375 Track 2 Residential SCOs and groundwater protections standards. 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; and
- Virgin quarried material or other materials with an approved Beneficial Use Determination (BUD) from NYSDEC for reuse as clean fill.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this SMP. The Inspection and Certification Report 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.

7.5.10 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 from the identified clean soil sources will be taken at a minimum frequency of one sample for every 500 cubic yards of material. One composite sample will be collected form each source of virgin quarried material or other material with an NYSDEC approved BUD, unless otherwise approved by OER. 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) may be imported from facilities permitted or registered by NYSDEC. 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 will not be used as cover material.

7.5.11 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. 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 NYSDEC.

7.5.12 Storm-water Pollution Prevention

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during

the remedial program. All existing stormwater systems will be inspected to ensure proper operation.

7.5.13 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/QEPs.

7.5.14 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.

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/QEPs.

7.5.15 Noise

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

7.6 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.

7.6.1 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.

7.6.2 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.

7.7 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction or repair work 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. 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.

7.7.1 Emergency Telephone Numbers

In the event of any emergency condition pertaining to these remedial systems, the Owner's representative(s) should contact the appropriate parties from the contact list below. Prompt contact should also be made to Benjamin Hernandez Salazar. These emergency contact lists must be maintained in an easily accessible location at the Site.

Emergency Contact Numbers

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

Contact Numbers

Benjamin Hernandez Salazar (Environmental Consultant)	631-269-8800
Office of Environmental Remediation	(212) 788-8841; 311

8.0 SUSTAINABILITY REPORT

This Remedial Action Work Plan provides for sustainable remediation and redevelopment through a variety of means that are defined in this Sustainability Report.

Conservation of Non-Renewable Resources. Reduced consumption of non-renewable resources such as soil and top-soil lowers the overall environmental impact of the project on the region by conserving these resources.

Conservation of non-renewable resources was achieved by reuse of clean onsite soil as backfill behind foundation walls and over landscaped areas. An estimate of the volume of non-renewable resources, the use of which will be avoided under this plan, is approximately 800 CY.

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.

The following means were used to reduce energy consumption in this project:

- Reuse of onsite soils for backfill materials to avoid truck transport delivery of imported clean fill.
- Use of higher fuel efficiency late model diesel transport trucks on onsite equipment.
- Enforcement of engine idle regulations (heavy duty vehicles prohibited from idling for more than three minutes at a time).
- Use of most direct routes to interstate highways.

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

Ultra-low sulfur clean diesel fuels were utilized in this program.

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 that could impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of existing contamination from off-Site.

The following recontamination controls are implemented on this Site:

- Protection of migration of off-site soil vapors into the new building through the passive SSDS and vapor barrier membrane system.

- Protection from offsite soils through the composite cover system comprised of the concrete foundation structure beneath the entire Site and throughout Site perimeter and clean onsite soils reused as cover in landscaped areas.
- Implementation of the Site Management Plan to address maintenance and protection of Engineering Controls, establishes Institutional Controls and addresses handling of onsite and imported materials.

The area of the Site that utilizes recontamination controls under this plan is 25,475square feet.

Paperless Brownfield Cleanup Program. West Tremont Housing Development Fund Company Inc. participated in OER's Paperless Brownfield Cleanup Program. Under this program, submission of electronic documents replaced submission of hard copies for the review of project documents, communications and milestone reports. A best estimate of the mass (pounds) of paper saved under this plan is 20 pounds.

Low-Energy Project Management Program. West Tremont Housing Development Fund Company Inc. participated in OER's low-energy project management program. Under this program, whenever possible, meetings were held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation. A gross estimate of the number of miles of personal transportation that was conserved in this process is 500 miles.

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. The number of trees planted as part of this redevelopment is 28.

TABLES

Table 1 - Bottom of Excavation End Point Soil Analysis Summary
92 W. Tremont Avenue
Bronx NY

CAS Number	Parameter Name	Parameter ID	NYCRR 375 Unrestricted Use	NYCRR 375 Residential	NYCRR 375 Restricted-Residential	Track 4 SCO's	EP-1	EP-2	EP-3	EP-4	EP-5	EP-6	EP-7	EP-8	EP-9	EP-10	EP-11
		Date					10/4/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	6/12/2015	6/12/2015
	Sample ID	Unit	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*
71-55-6	1,1,1-Trichloroethane (TCA)	VOC	680	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
75-34-3	1,1-Dichloroethane	VOC	270	19,000	26,000	-	ND	-	-	-	-	-	-	-	-	-	-
75-35-4	1,1-Dichloroethene	VOC	330	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
95-63-6	1,2,4-Trimethylbenzene	VOC	3,600	47,000	52,000	-	ND	-	-	-	-	-	-	-	-	-	-
95-50-1	1,2-Dichlorobenzene	VOC	1,100	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
107-06-2	1,2-Dichloroethane	VOC	20c	2,300	3,100	-	ND	-	-	-	-	-	-	-	-	-	-
108-67-8	1,3,5-Trimethylbenzene	VOC	8,400	47,000	52,000	-	ND	-	-	-	-	-	-	-	-	-	-
541-73-1	1,3-Dichlorobenzene	VOC	2,400	17,000	49,000	-	ND	-	-	-	-	-	-	-	-	-	-
106-46-7	1,4-Dichlorobenzene	VOC	1,800	9,800	13,000	-	ND	-	-	-	-	-	-	-	-	-	-
123-91-1	1,4-Dioxane	VOC	100b	9,800	13,000	-	ND	-	-	-	-	-	-	-	-	-	-
78-93-3	2-Butanone	VOC	120	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
67-64-1	Acetone	VOC	50	100,000a	100,000b	-	ND	-	-	-	-	-	-	-	-	-	-
71-43-2	Benzene	VOC	60	2,900	4,800	-	ND	-	-	-	-	-	-	-	-	-	-
56-23-5	Carbon Tetrachloride	VOC	760	1,400	2,400	-	ND	-	-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	VOC	1,100	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
67-66-3	Chloroform	VOC	370	10,000	49,000	-	ND	-	-	-	-	-	-	-	-	-	-
156-59-2	cis-1,2-Dichloroethene	VOC	250	59,000	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
100-41-4	Ethylbenzene	VOC	1,000	30,000	41,000	-	ND	-	-	-	-	-	-	-	-	-	-
75-09-2	Methylene Chloride	VOC	50	51,000	100,000a	-	2.8	-	-	-	-	-	-	-	-	-	-
1634-04-4	Methyl Tert-Butyl Ether	VOC	930	62,000	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	SVOC	12,000	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
104-51-8	n-Butylbenzene	VOC	12,000	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
103-65-1	n-Propylbenzene	VOC	3,900	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
135-98-8	sec-Butylbenzene	VOC	11,000	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
98-06-6	tert-Butylbenzene	VOC	5,900	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethene (PCE)	VOC	1,300	5,500	19,000	-	ND	-	-	-	-	-	-	-	-	-	-
108-88-3	Toluene	VOC	700	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
1330-20-7	Total Xylenes	VOC	260	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
156-60-5	trans-1,2-Dichloroethene	VOC	190	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethene (TCE)	VOC	470	10,000	21,000	-	ND	-	-	-	-	-	-	-	-	-	-
75-01-4	Vinyl Chloride	VOC	20	210	900	-	ND	-	-	-	-	-	-	-	-	-	-
	Total BTEX																
	Total VOCs																
83-32-9	Acenaphthene	SVOC	20,000	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
208-96-8	Acenaphthylene	SVOC	100,000a	100,000a	100,000a	-	100	-	-	-	-	-	-	-	-	-	-
120-12-7	Anthracene	SVOC	100,000a	100,000a	100,000a	-	120	-	-	-	-	-	-	-	-	-	-
56-55-3	Benzo-a-Anthracene	SVOC	1,000c	1,000f	1,000f	-	370	-	-	-	-	-	-	-	-	-	-
50-32-8	Benzo-a-Pyrene	SVOC	1,000c	1,000f	1,000f	-	370	-	-	-	-	-	-	-	-	-	-
205-99-2	Benzo-b-Fluoranthene	SVOC	1,000c	1,000f	1,000f	-	530	-	-	-	-	-	-	-	-	-	-
207-08-9	Benzo-k-Fluoranthene	SVOC	800c	1,000	3,900	-	210	-	-	-	-	-	-	-	-	-	-
191-24-2	Benzo-g,h,i-Perylene	SVOC	100,000	100,000a	100,000a	-	260	-	-	-	-	-	-	-	-	-	-
218-01-9	Chrysene	SVOC	1,000c	1,000f	3,900	-	420	-	-	-	-	-	-	-	-	-	-
132-64-9	Dibenzofuran	SVOC	7,000	14,000	59,000	-	ND	-	-	-	-	-	-	-	-	-	-
53-70-3	Dibenzo-a,h-Anthracene	SVOC	330b	330e	330e	-	70	-	-	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	SVOC	100,000	100,000a	100,000a	-	730	-	-	-	-	-	-	-	-	-	-
86-73-7	Fluorene	SVOC	30,000	100,000a	100,000a	-	ND	-	-	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	SVOC	330	410	1,200	-	ND	-	-	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)Pyrene	SVOC	500c	500f	500f	-	280	-	-	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	SVOC	100,000	100,000a	100,000a	-	380	-	-	-	-	-	-	-	-	-	-
129-00-0	Pyrene	SVOC	100,000	100,000a	100,000a	-	570	-	-	-	-	-	-	-	-	-	-
	Total cPAHs																
	Total SVOCs																

Table 1 - Bottom of Excavation End Point Soil Analysis Summary
92 W. Tremont Avenue
Bronx NY

CAS Number	Parameter Name	Parameter ID	NYCRR 375 Unrestricted Use	NYCRR 375 Residential	NYCRR 375 Restricted-Residential	Track 4 SCO's	EP-1	EP-2	EP-3	EP-4	EP-5	EP-6	EP-7	EP-8	EP-9	EP-10	EP-11
		Date					10/4/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	6/12/2015	6/12/2015
	Sample ID	Unit	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*
93-72-1	2,4,5-TP Acid	PESTICIDE	3,800	58,000	100,000a	100,000a	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-
72-54-8	4,4-DDD	PESTICIDE	3.3b	2,600	13,000	13,000	46	ND	24.7	1.29	20.1	27.1	ND	1.92	26.2	0.741	13.1
72-55-9	4,4-DDE	PESTICIDE	3.3b	1,800	8,900	8,900	116	1.42	60.5	6.12	36.8	48.6	ND	2.58	55.8	10.6	21.1
50-29-3	4,4-DDT	PESTICIDE	3.3b	1,700	7,900	7,900	529	6.14	364	37.6	278	356	2.22	7.14	312	22.8	180
309-00-2	Aldrin	PESTICIDE	5c	19	97	97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
319-84-6	alpha-BHC	PESTICIDE	20	97	480	480	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5103-71-9	Alpha Chlordane	PESTICIDE	94	910	4,200	4,200	ND	ND	ND	ND	1.58	2.4	ND	1.61	2.45	ND	18.1
12674-11-2	Aroclor 1016	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
1104-28-2	Aroclor 1221	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
11141-16-5	Aroclor 1232	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
53469-21-9	Aroclor 1242	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
12672-29-6	Aroclor 1248	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
11097-69-1	Aroclor 1254	PCB	NA	NA	NA	-	ND	-	-	-	-	-	-	-	-	-	-
11096-82-5	Aroclor 1260	PCB	NA	NA	NA	-	17.2	-	-	-	-	-	-	-	-	-	-
	Aroclor 1262	PCB	NA		NA	-	ND	-	-	-	-	-	-	-	-	-	-
	Aroclor 1268	PCB	NA		NA	-	ND	-	-	-	-	-	-	-	-	-	-
319-85-7	beta-BHC	PESTICIDE	36	72	360	360	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
319-86-8	delta-BHC	PESTICIDE	40	100,000a	100,000a	100,000a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
60-57-1	Dieldrin	PESTICIDE	5	39	200	200	8.28	ND	2.77	ND	5.59	5.35	ND	1.2	7.46	ND	21.2
959-98-8	Endosulfan I	PESTICIDE	2,400	4,800i	24,000i	24,000i	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33213-65-9	Endosulfan II	PESTICIDE	2,400	4,800i	24,000i	24,000i	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1031-07-8	Endosulfan Sulfate	PESTICIDE	2,400	4,800i	24,000i	24,000i	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
72-20-8	Endrin	PESTICIDE	14	2,200	11,000	11,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
58-89-9	gamma-BHC	PESTICIDE	100	280	1,300	1,300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
76-44-8	Heptachlor	PESTICIDE	42	420	2,100	2,100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59
1336-36-3	Polychlorinated Biphenyls	PCB	100	1,000	1,000	1,000	17.2	-	-	-	-	-	-	-	-	-	-
	Unit		*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*											
7440-38-2	Arsenic, As	METAL	13c	16f	16f	-	2.6	1.6	1.8	2.2	3.4	3.2	3.1	2.6	2.8	10	8.6
7440-39-3	Barium, Ba	METAL	350c	350f	400	750	210	200	230	160	200	220	87	97	220	200	400
7440-41-7	Beryllium, Be	METAL	7.2	14	72	72	0.14	0.12	0.12	0.16	0.15	0.16	0.32	0.21	0.17	0.32	0.15
7440-43-9	Cadmium, Cd	METAL	2.5c	2.5f	4.3	9	1.1	0.77	0.88	0.76	0.84	0.88	0.42	0.36	0.83	0.97	0.46
7440-47-3	Chromium, Cr	METAL	NA	NA	110	110	48	73	54	52	30	31	20	12	29	37	40
18540-29-9	Chromium, hexavalent	METAL	1b	22	110	110	ND	ND	ND	0.21	ND	ND	ND	ND	0.22	ND	ND
16065-83-1	Chromium, trivalent	METAL	30c	36	180	180	48	73	54	52	30	31	20	12	29	37	40
7440-50-8	Copper, Cu	METAL	50	270	270	270	40	56	45	34	47	40	16	17	39	36	47
57-12-5	Cyanide	METAL	27	27	27	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7439-92-1	Lead, Pb	METAL	63c	400	400	800	60	5	39	7	140	99	26	42	88	160	110
7439-96-5	Manganese, Mn	METAL	1,600c	2,000f	2,000f	2,000f	370	520	370	580	270	280	390	260	290	320	300
7439-97-6	Mercury, Hg	METAL	.18c	0.81j	.81j	1.5	0.11	ND	0.07	ND	0.19	0.18	0.13	0.02	0.17	0.05	0.14
7440-02-0	Nickel, Ni	METAL	30	140	310	310	26	28	26	24	20	19	13	9.4	19	25	22
7782-49-2	Selenium, Se	METAL	3.9c	36	180	180	0.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7440-22-4	Silver, Ag	METAL	2	36	180	180	0.27	ND	0.15	ND	ND	ND	ND	ND	ND	ND	ND
7440-66-6	Zinc, Zn	METAL	109c	2,200	10,000d	10,000d	170	77	140	75	190	210	47	80	190	170	340

Notes: Shaded values indicate an exceedance of NYCRR 375 Residential; Restricted Residential; Unrestriced Use; Track 4 Site Specific SCO values.

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit

Notes
ug/kg = micrograms per kilogram (ppb)
mg/kg = milligrams per kilogram (ppm)
ug/L = micrograms per liter
mg/L = milligrams per liter

Table 1 - Hotspot Sidewall Soil Analysis Summary
92 W. Tremont Avenue, Bronx, NY

CAS Number	Parameter Name	Parameter ID	NYCRR 375 Unrestricted Use	NYCRR 375 Residential	NYCRR 375 Restricted-Residential	Track 4 SCO's	HS-N	HS-S	HS-E	HS-W
		Date					10/1/2013	10/1/2013	10/1/2013	10/1/2013
	Sample ID	Unit	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*	*ug/kg*
71-55-6	1,1,1-Trichloroethane (TCA)	VOC	680	100,000a	100,000a	-	ND	ND	ND	ND
56-23-5	Carbon Tetrachloride	VOC	760	1,400	2,400	-	ND	ND	ND	ND
127-18-4	Tetrachloroethene (PCE)	VOC	1,300	5,500	19,000	-	0.74	ND	ND	ND
79-01-6	Trichloroethene (TCE)	VOC	470	10,000	21,000	-	ND	ND	ND	ND
75-01-4	Vinyl Chloride	VOC	20	210	900	-	ND	ND	ND	ND
	Total BTEX						ND	ND	ND	ND
	Total VOCs						0.74	ND	ND	ND

Notes: Shaded values indicate an exceedance of NYCRR 375 Residential; Restricted Residential; Unrestriced Use ; and Site Specific Track 4 SCO values.

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit

Notes
ug/kg = micrograms per kilogram (ppb)
mg/kg = milligrams per kilogram (ppm)
ug/L = micrograms per liter
mg/L = milligrams per liter

Table 3: Soil/Fill Disposal Quantities Summary
92 W. Tremont Avenue, Bronx, NY

Month	Date Received	Manifest #	Material	Truck ID	Facility Ticket #	Tons	Dump Facility	Backend
September	9/26/2013	154195	Non Haz Contaminated Soils (Hot Spot)	AN509W	14242	32.57	Lyndhurst	Cumberland
September	9/26/2013	154193	Non Haz Contaminated Soils (Hot Spot)	AN509W	14256	32.50	Lyndhurst	Cumberland
September	9/26/2013	154204	Non Haz Contaminated Soils (Hot Spot)	AN715V	14210	27.03	Lyndhurst	Cumberland
September	9/26/2013	154188	Non Haz Contaminated Soils (Hot Spot)	AN715V	14225	27.80	Lyndhurst	Cumberland
September	9/26/2013	154185	Non Haz Contaminated Soils (Hot Spot)	AN715V	14236	32.89	Lyndhurst	Cumberland
September	9/26/2013	154191	Non Haz Contaminated Soils (Hot Spot)	AN715V	14250	32.79	Lyndhurst	Cumberland
September	9/26/2013	154197	Non Haz Contaminated Soils (Hot Spot)	AP812A	14232	34.19	Lyndhurst	Cumberland
September	9/26/2013	154190	Non Haz Contaminated Soils (Hot Spot)	AP812A	14246	34.16	Lyndhurst	Cumberland
September	9/26/2013	154194	Non Haz Contaminated Soils (Hot Spot)	AP812A	14259	35.17	Lyndhurst	Cumberland
September	9/26/2013	154198	Non Haz Contaminated Soils (Hot Spot)	AP828N	14229	32.98	Lyndhurst	Cumberland
September	9/26/2013	154189	Non Haz Contaminated Soils (Hot Spot)	AP828N	14245	33.62	Lyndhurst	Cumberland
September	9/26/2013	154205	Non Haz Contaminated Soils (Hot Spot)	AP884D	14213	30.34	Lyndhurst	Cumberland
September	9/26/2013	154187	Non Haz Contaminated Soils (Hot Spot)	AP884D	14226	34.57	Lyndhurst	Cumberland
September	9/26/2013	154196	Non Haz Contaminated Soils (Hot Spot)	AP884D	14239	32.81	Lyndhurst	Cumberland
September	9/26/2013	154207	Non Haz Contaminated Soils (Hot Spot)	AP884D	14265	30.50	Lyndhurst	Cumberland
September	9/26/2013	154206	Non Haz Contaminated Soils (Hot Spot)	AP885D	14209	29.79	Lyndhurst	Cumberland
September	9/26/2013	154184	Non Haz Contaminated Soils (Hot Spot)	AP885D	14224	28.06	Lyndhurst	Cumberland
September	9/26/2013	154186	Non Haz Contaminated Soils (Hot Spot)	AP885D	14235	29.82	Lyndhurst	Cumberland
September	9/26/2013	154192	Non Haz Contaminated Soils (Hot Spot)	AP885D	14251	33.34	Lyndhurst	Cumberland
September	9/30/2013	154239	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14291	28.36	Lyndhurst	Cumberland
September	9/30/2013	154244	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14317	29.48	Lyndhurst	Cumberland
September	9/30/2013	154221	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14340	31.89	Lyndhurst	Cumberland
September	9/30/2013	152248	Non Haz Contaminated Soils (Hot Spot)	AN509W	14288	29.33	Lyndhurst	Cumberland
September	9/30/2013	154242	Non Haz Contaminated Soils (Hot Spot)	AN509W	14310	31.85	Lyndhurst	Cumberland
September	9/30/2013	154218	Non Haz Contaminated Soils (Hot Spot)	AN509W	14334	34.22	Lyndhurst	Cumberland
September	9/30/2013	154219	Non Haz Contaminated Soils (Hot Spot)	AN509W	14361	33.24	Lyndhurst	Cumberland
September	9/30/2013	154245	Non Haz Contaminated Soils (Hot Spot)	AN667W	14292	27.39	Lyndhurst	Cumberland
September	9/30/2013	154208	Non Haz Contaminated Soils (Hot Spot)	AN667W	14348	25.54	Lyndhurst	Cumberland
September	9/30/2013	154215	Non Haz Contaminated Soils (Hot Spot)	AN667W	14363	28.67	Lyndhurst	Cumberland
September	9/30/2013	154240	Non Haz Contaminated Soils (Hot Spot)	AN780W	14299	25.70	Lyndhurst	Cumberland
September	9/30/2013	154202	Non Haz Contaminated Soils (Hot Spot)	AN780W	14324	26.28	Lyndhurst	Cumberland
September	9/30/2013	154209	Non Haz Contaminated Soils (Hot Spot)	AN780W	14350	26.91	Lyndhurst	Cumberland
September	9/30/2013	154214	Non Haz Contaminated Soils (Hot Spot)	AN780W	14365	25.99	Lyndhurst	Cumberland
September	9/30/2013	152246	Non Haz Contaminated Soils (Hot Spot)	AP552R	14289	29.41	Lyndhurst	Cumberland
September	9/30/2013	154243	Non Haz Contaminated Soils (Hot Spot)	AP552R	14313	29.02	Lyndhurst	Cumberland
September	9/30/2013	154217	Non Haz Contaminated Soils (Hot Spot)	AP552R	14333	34.36	Lyndhurst	Cumberland
September	9/30/2013	154216	Non Haz Contaminated Soils (Hot Spot)	AP552R	14351	30.32	Lyndhurst	Cumberland
September	9/30/2013	154247	Non Haz Contaminated Soils (Hot Spot)	AP884D	14285	30.00	Lyndhurst	Cumberland
September	9/30/2013	154241	Non Haz Contaminated Soils (Hot Spot)	AP884D	14308	30.31	Lyndhurst	Cumberland
September	9/30/2013	154203	Non Haz Contaminated Soils (Hot Spot)	AP884D	14328	32.08	Lyndhurst	Cumberland
September	9/30/2013	154220	Non Haz Contaminated Soils (Hot Spot)	AP884D	14353	32.14	Lyndhurst	Cumberland
October	10/1/2013	154210	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14368	28.83	Lyndhurst	Cumberland
October	10/1/2013	154201	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14384	27.26	Lyndhurst	Cumberland
October	10/1/2013	154223	Non Haz Contaminated Soils (Hot Spot)	AJ106H	14396	30.03	Lyndhurst	Cumberland
October	10/1/2013	154212	Non Haz Contaminated Soils (Hot Spot)	AN667W	14370	27.42	Lyndhurst	Cumberland
October	10/1/2013	154200	Non Haz Contaminated Soils (Hot Spot)	AN667W	14386	29.32	Lyndhurst	Cumberland
October	10/1/2013	154225	Non Haz Contaminated Soils (Hot Spot)	AN667W	14398	29.81	Lyndhurst	Cumberland
October	10/1/2013	154229	Non Haz Contaminated Soils (Hot Spot)	AN667W	14411	29.71	Lyndhurst	Cumberland
October	10/1/2013	154211	Non Haz Contaminated Soils (Hot Spot)	AP552R	14369	28.68	Lyndhurst	Cumberland
October	10/1/2013	154199	Non Haz Contaminated Soils (Hot Spot)	AP552R	14385	30.36	Lyndhurst	Cumberland
October	10/1/2013	154224	Non Haz Contaminated Soils (Hot Spot)	AP552R	14397	31.99	Lyndhurst	Cumberland
October	10/1/2013	154230	Non Haz Contaminated Soils (Hot Spot)	AP552R	14407	33.01	Lyndhurst	Cumberland
October	10/1/2013	154213	Non Haz Contaminated Soils (Hot Spot)	AP884D	14372	32.56	Lyndhurst	Cumberland
October	10/1/2013	154222	Non Haz Contaminated Soils (Hot Spot)	AP884D	14389	33.19	Lyndhurst	Cumberland
October	10/1/2013	154226	Non Haz Contaminated Soils (Hot Spot)	AP884D	14401	33.61	Lyndhurst	Cumberland
October	10/1/2013	154228	Non Haz Contaminated Soils (Hot Spot)	AP884D	14408	32.87	Lyndhurst	Cumberland
October	10/2/2013	154119	Non Haz Contaminated Soils meeting PA Reg Fill	AN780W	14428	33.96	Lyndhurst	Palmerton
October	10/2/2013	154093	Non Haz Contaminated Soils meeting PA Reg Fill	AN780W	14446	33.56	Lyndhurst	Palmerton
October	10/2/2013	154098	Non Haz Contaminated Soils meeting PA Reg Fill	AN780W	14459	33.62	Lyndhurst	Palmerton
October	10/2/2013	154103	Non Haz Contaminated Soils meeting PA Reg Fill	AN780W	14478	33.46	Lyndhurst	Palmerton
October	10/2/2013	154116	Non Haz Contaminated Soils meeting PA Reg Fill	AP552R	14424	34.82	Lyndhurst	Palmerton
October	10/2/2013	154117	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14427	33.87	Lyndhurst	Palmerton
October	10/2/2013	154092	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14444	29.97	Lyndhurst	Palmerton
October	10/2/2013	154097	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14456	31.20	Lyndhurst	Palmerton
October	10/2/2013	154102	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14476	31.84	Lyndhurst	Palmerton
October	10/2/2013	154115	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	14425	38.54	Lyndhurst	Palmerton
October	10/2/2013	154091	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	14440	33.82	Lyndhurst	Palmerton
October	10/2/2013	154096	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	14454	36.14	Lyndhurst	Palmerton
October	10/2/2013	154100	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	14474	34.44	Lyndhurst	Palmerton
October	10/2/2013	154118	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14426	33.55	Lyndhurst	Palmerton
October	10/2/2013	154149	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14438	34.22	Lyndhurst	Palmerton
October	10/2/2013	154094	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14452	31.73	Lyndhurst	Palmerton
October	10/2/2013	154101	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14470	32.95	Lyndhurst	Palmerton
October	10/2/2013	154099	Non Haz Contaminated Soils meeting PA Reg Fill	AP885D	14466	34.23	Lyndhurst	Palmerton
October	10/3/2013	154122	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	14505	31.42	Lyndhurst	Palmerton
October	10/3/2013	154105	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	14522	27.83	Lyndhurst	Palmerton
October	10/3/2013	154108	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	14536	35.41	Lyndhurst	Palmerton

Table 3: Soil/Fill Disposal Quantities Summary
92 W. Tremont Avenue, Bronx, NY

Month	Date Received	Manifest #	Material	Truck ID	Facility Ticket #	Tons	Dump Facility	Backend
October	10/3/2013	154112	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	14556	33.52	Lyndhurst	Palmerton
October	10/3/2013	154123	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14504	30.25	Lyndhurst	Palmerton
October	10/3/2013	154104	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14519	29.53	Lyndhurst	Palmerton
October	10/3/2013	154109	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14535	30.69	Lyndhurst	Palmerton
October	10/3/2013	154115	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14551	32.31	Lyndhurst	Palmerton
October	10/3/2013	154114	Non Haz Contaminated Soils meeting PA Reg Fill	AP753U	14552	32.31	Lyndhurst	Palmerton
October	10/3/2013	154124	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14496	32.79	Lyndhurst	Palmerton
October	10/3/2013	154095	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14516	30.57	Lyndhurst	Palmerton
October	10/3/2013	154107	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14531	33.75	Lyndhurst	Palmerton
October	10/3/2013	154110	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14546	32.38	Lyndhurst	Palmerton
October	10/3/2013	154113	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	14566	33.48	Lyndhurst	Palmerton
October	10/3/2013	154120	Non Haz Contaminated Soils meeting PA Reg Fill	AP885D	14493	33.27	Lyndhurst	Palmerton
October	10/3/2013	154121	Non Haz Contaminated Soils meeting PA Reg Fill	AP885D	14513	35.46	Lyndhurst	Palmerton
October	10/3/2013	154106	Non Haz Contaminated Soils meeting PA Reg Fill	AP885D	14529	32.40	Lyndhurst	Palmerton
October	10/3/2013	154111	Non Haz Contaminated Soils meeting PA Reg Fill	AP885D	14555	33.43	Lyndhurst	Palmerton
October	10/8/2013	154071	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	15358	29.49	Lyndhurst	Palmerton
October	10/8/2013	154079	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	15378	34.55	Lyndhurst	Palmerton
October	10/8/2013	154075	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	15392	36.19	Lyndhurst	Palmerton
October	10/8/2013	154141	Non Haz Contaminated Soils meeting PA Reg Fill	AN509W	15410	35.02	Lyndhurst	Palmerton
October	10/8/2013	154072	Non Haz Contaminated Soils meeting PA Reg Fill	AP552R	15353	28.45	Lyndhurst	Palmerton
October	10/8/2013	154081	Non Haz Contaminated Soils meeting PA Reg Fill	AP552R	15374	32.04	Lyndhurst	Palmerton
October	10/8/2013	154076	Non Haz Contaminated Soils meeting PA Reg Fill	AP552R	15387	34.29	Lyndhurst	Palmerton
October	10/8/2013	154073	Non Haz Contaminated Soils meeting PA Reg Fill	AP552R	15406	36.08	Lyndhurst	Palmerton
October	10/8/2013	154074	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	15401	34.93	Lyndhurst	Palmerton
October	10/8/2013	154147	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	15345	35.62	Lyndhurst	Palmerton
October	10/8/2013	154148	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	15372	35.02	Lyndhurst	Palmerton
October	10/8/2013	154077	Non Haz Contaminated Soils meeting PA Reg Fill	AP812A	15384	33.52	Lyndhurst	Palmerton
October	10/8/2013	154070	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	15364	34.22	Lyndhurst	Palmerton
October	10/8/2013	154080	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	15380	34.83	Lyndhurst	Palmerton
October	10/8/2013	154078	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	15397	33.30	Lyndhurst	Palmerton
October	10/8/2013	154142	Non Haz Contaminated Soils meeting PA Reg Fill	AP884D	15414	34.14	Lyndhurst	Palmerton
October	10/11/2013	154135	Oversized Rock w/ Soil meeting PA Reg Fill	AN509W	15666	30.30	Lyndhurst	Palmerton
October	10/11/2013	154132	Oversized Rock w/ Soil meeting PA Reg Fill	AP552R	15664	31.92	Lyndhurst	Palmerton
October	10/11/2013	154131	Oversized Rock w/ Soil meeting PA Reg Fill	AP884D	15663	33.65	Lyndhurst	Palmerton
October	10/17/2013	152145	Oversized Rock w/ Soil meeting PA Reg Fill	AP552R	15754	33.67	Lyndhurst	Palmerton
October	10/17/2013	152147	Oversized Rock w/ Soil meeting PA Reg Fill	AP552R	15763	32.94	Lyndhurst	Palmerton
October	10/17/2013	152153	Oversized Rock w/ Soil meeting PA Reg Fill	AP552R	152153	31.88	Lyndhurst	Palmerton
October	10/17/2013	152142	Oversized Rock w/ Soil meeting PA Reg Fill	AP552R	15748	32.52	Lyndhurst	Palmerton
October	10/17/2013	152144	Oversized Rock w/ Soil meeting PA Reg Fill	AP753U	15753	32.42	Lyndhurst	Palmerton
October	10/17/2013	152146	Oversized Rock w/ Soil meeting PA Reg Fill	AP753U	15761	30.31	Lyndhurst	Palmerton
October	10/17/2013	152152	Oversized Rock w/ Soil meeting PA Reg Fill	AP753U	15741	29.69	Lyndhurst	Palmerton
October	10/17/2013	152143	Oversized Rock w/ Soil meeting PA Reg Fill	AP753U	15749	30.95	Lyndhurst	Palmerton
October	10/22/2013	156018	Non Haz Contaminated Soils meeting PA Reg Fill	AK176A	18486	33.13	Palmerton	NA
October	10/22/2013	156002	Non Haz Contaminated Soils meeting PA Reg Fill	AK176A	18453	32.08	Palmerton	NA
October	10/22/2013	156014	Non Haz Contaminated Soils meeting PA Reg Fill	AK185V	18472	31.35	Palmerton	NA
October	10/22/2013	156025	Non Haz Contaminated Soils meeting PA Reg Fill	AK185V	18509	35.41	Palmerton	NA
October	10/22/2013	156004	Non Haz Contaminated Soils meeting PA Reg Fill	AK972W	18458	33.11	Palmerton	NA
October	10/22/2013	156019	Non Haz Contaminated Soils meeting PA Reg Fill	AK972W	18526	34.48	Palmerton	NA
October	10/22/2013	156012	Non Haz Contaminated Soils meeting PA Reg Fill	AL116A	18471	33.24	Palmerton	NA
October	10/22/2013	156031	Non Haz Contaminated Soils meeting PA Reg Fill	AL116A	18511	32.83	Palmerton	NA
October	10/22/2013	156021	Non Haz Contaminated Soils meeting PA Reg Fill	AL337N	18495	32.57	Palmerton	NA
October	10/22/2013	156010	Non Haz Contaminated Soils meeting PA Reg Fill	AN370M	18469	31.01	Palmerton	NA
October	10/22/2013	156029	Non Haz Contaminated Soils meeting PA Reg Fill	AN370M	18510	34.76	Palmerton	NA
October	10/22/2013	156005	Non Haz Contaminated Soils meeting PA Reg Fill	AN550M	18459	32.62	Palmerton	NA
October	10/22/2013	156020	Non Haz Contaminated Soils meeting PA Reg Fill	AN550M	18489	34.87	Palmerton	NA
October	10/22/2013	156007	Non Haz Contaminated Soils meeting PA Reg Fill	AN556Y	18464	33.72	Palmerton	NA
October	10/22/2013	156024	Non Haz Contaminated Soils meeting PA Reg Fill	AN556Y	18506	34.39	Palmerton	NA
October	10/22/2013	156008	Non Haz Contaminated Soils meeting PA Reg Fill	AN656Y	18466	33.53	Palmerton	NA
October	10/22/2013	156023	Non Haz Contaminated Soils meeting PA Reg Fill	AN656Y	18507	36.48	Palmerton	NA
October	10/22/2013	156006	Non Haz Contaminated Soils meeting PA Reg Fill	AN694R	18462	30.26	Palmerton	NA
October	10/22/2013	156026	Non Haz Contaminated Soils meeting PA Reg Fill	AN694R	18502	30.05	Palmerton	NA
October	10/22/2013	156017	Non Haz Contaminated Soils meeting PA Reg Fill	AN719Y	18485	33.61	Palmerton	NA
October	10/22/2013	156003	Non Haz Contaminated Soils meeting PA Reg Fill	AN719Y	18455	33.02	Palmerton	NA
October	10/22/2013	156032	Non Haz Contaminated Soils meeting PA Reg Fill	AN786K	18518	31.01	Palmerton	NA
October	10/22/2013	156009	Non Haz Contaminated Soils meeting PA Reg Fill	AN843J	18468	32.66	Palmerton	NA
October	10/22/2013	156028	Non Haz Contaminated Soils meeting PA Reg Fill	AN843J	18505	32.92	Palmerton	NA
October	10/22/2013	156013	Non Haz Contaminated Soils meeting PA Reg Fill	AN869W	18470	35.36	Palmerton	NA
October	10/22/2013	156027	Non Haz Contaminated Soils meeting PA Reg Fill	AN869W	18508	34.42	Palmerton	NA
October	10/22/2013	156015	Non Haz Contaminated Soils meeting PA Reg Fill	AN951K	18474	32.62	Palmerton	NA
October	10/22/2013	156030	Non Haz Contaminated Soils meeting PA Reg Fill	AN951K	18516	36.33	Palmerton	NA
October	10/22/2013	156016	Non Haz Contaminated Soils meeting PA Reg Fill	AP328G	18481	32.63	Palmerton	NA
October	10/22/2013	156001	Non Haz Contaminated Soils meeting PA Reg Fill	AP328G	18449	31.81	Palmerton	NA
October	10/22/2013	156033	Non Haz Contaminated Soils meeting PA Reg Fill	AP584U	18520	33.83	Palmerton	NA
October	10/22/2013	156011	Non Haz Contaminated Soils meeting PA Reg Fill	AP792H	18465	30.97	Palmerton	NA
October	10/22/2013	156022	Non Haz Contaminated Soils meeting PA Reg Fill	AP792H	18514	36.16	Palmerton	NA

Table 3: Soil/Fill Disposal Quantities Summary
92 W. Tremont Avenue, Bronx, NY

Month	Date Received	Manifest #	Material	Truck ID	Facility Ticket #	Tons	Dump Facility	Backend
October	10/29/2013	156034	Non Haz Contaminated Soils meeting PA Reg Fill	AP328G	18791	31.18	Palmerton	NA
October	10/29/2013	156035	Non Haz Contaminated Soils meeting PA Reg Fill	AP639R	18792	35.30	Palmerton	NA
October	10/29/2013	156036	Non Haz Contaminated Soils meeting PA Reg Fill	AN719Y	18793	36.13	Palmerton	NA
October	10/29/2013	156037	Non Haz Contaminated Soils meeting PA Reg Fill	AP792H	18795	35.68	Palmerton	NA
October	10/29/2013	156039	Non Haz Contaminated Soils meeting PA Reg Fill	AM320V	18796	37.84	Palmerton	NA
October	10/29/2013	156040	Non Haz Contaminated Soils meeting PA Reg Fill	AK597T	18800	35.49	Palmerton	NA
October	10/29/2013	156452	Non Haz Contaminated Soils meeting PA Reg Fill	AN694R	18803	35.15	Palmerton	NA
October	10/29/2013	156038	Non Haz Contaminated Soils meeting PA Reg Fill	AM843J	18806	35.19	Palmerton	NA
October	10/29/2013	156453	Non Haz Contaminated Soils meeting PA Reg Fill	AP328G	18809	33.09	Palmerton	NA
October	10/29/2013	156450	Non Haz Contaminated Soils meeting PA Reg Fill	AP792H	18813	36.49	Palmerton	NA
October	10/29/2013	156455	Non Haz Contaminated Soils meeting PA Reg Fill	AP639R	18814	33.63	Palmerton	NA
October	10/29/2013	156454	Non Haz Contaminated Soils meeting PA Reg Fill	AN719Y	18815	34.71	Palmerton	NA
October	10/29/2013	156449	Non Haz Contaminated Soils meeting PA Reg Fill	AP864P	18821	36.00	Palmerton	NA
October	10/29/2013	156448	Non Haz Contaminated Soils meeting PA Reg Fill	AP414M	18824	37.35	Palmerton	NA
October	10/30/2013	156458	Non Haz Contaminated Soils meeting PA Reg Fill	AP502D	18839	36.31	Palmerton	NA
October	10/30/2013	156457	Non Haz Contaminated Soils meeting PA Reg Fill	AP263V	18840	36.62	Palmerton	NA
October	10/30/2013	156459	Non Haz Contaminated Soils meeting PA Reg Fill	AP328G	18852	32.81	Palmerton	NA
October	10/30/2013	156460	Non Haz Contaminated Soils meeting PA Reg Fill	AP969W	18854	37.05	Palmerton	NA
October	10/30/2013	156456	Non Haz Contaminated Soils meeting PA Reg Fill	AP502D	18857	36.82	Palmerton	NA
GRAND TOTAL (TONS)						**5564.81**		

Table 4 - SSDS Startup Soil Vapor Sample Summary

92 W. Tremont Avenue, Bronx NY

CAS Number	Parameter Name	NYSDOH FINAL SVI GUIDANCE TABLE 3.1 AIR GUIDE LINES	SV-1 (SSDS "Branch 4")	SV-2 (SSDS "Branch 3")	SV-3 (SSDS "Branch 2")
			12/8/2014	12/8/2014	12/8/2014
	Sample ID		*ug/m^3*	*ug/m^3*	*ug/m^3*
71-55-6	1,1,1-Trichloroethane (TCA)	-	ND	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	-	ND	ND	ND
79-00-5	1,1,2-Trichloroethane	-	ND	ND	ND
76-13-1	1,1,2 Trichloro-1,2,2 Trifluoroethane	-	ND	ND	ND
75-34-3	1,1-Dichloroethane	-	ND	ND	ND
75-35-4	1,1-Dichloroethene	-	ND	ND	ND
95-63-6	1,2,4-Trimethylbenzene	-	ND	5.6	ND
106-93-4	1,2-Dibromoethane	-	ND	ND	ND
95-50-1	1,2-Dichlorobenzene	-	ND	ND	ND
107-06-2	1,2-Dichloroethane	-	ND	ND	ND
78-87-5	1,2-Dichloropropane	-	ND	ND	ND
120-82-1	1,2,4-Trichlorobenzene	-	ND	ND	ND
108-67-8	1,3,5-Trimethylbenzene	-	ND	1.59	ND
541-73-1	1,3-Dichlorobenzene	-	ND	ND	ND
106-99-0	1,3-Butadiene	-	ND	ND	ND
106-46-7	1,4-Dichlorobenzene	-	ND	ND	ND
123-91-1	1,4-Dioxane	-	ND	ND	ND
540-84-1	2,2,4-Trimethylpentane	-	1.06	1.97	1.12
78-93-3	2-Butanone	-	2.83	ND	1.86
591-78-6	2-Hexanone	-	ND	ND	ND
108-10-1	4-Methyl-2-Pentanone	-	ND	ND	ND
107-05-1	3-Chloropropene	-	ND	ND	ND
622-96-8	4-Ethyltoluene	-	ND	1.37	ND
67-64-1	Acetone	-	39.4	3.47	10
71-43-2	Benzene	-	1.41	2.84	0.847
100-44-7	Benzyl chloride	-	ND	ND	ND
75-27-4	Bromodichloromethane	-	ND	ND	ND
75-25-2	Bromoform	-	ND	ND	ND
74-83-9	Bromomethane	-	ND	ND	ND
75-15-0	Carbon Disulfide	-	0.676	2.33	0.71
56-23-5	Carbon Tetrachloride	-	ND	ND	ND

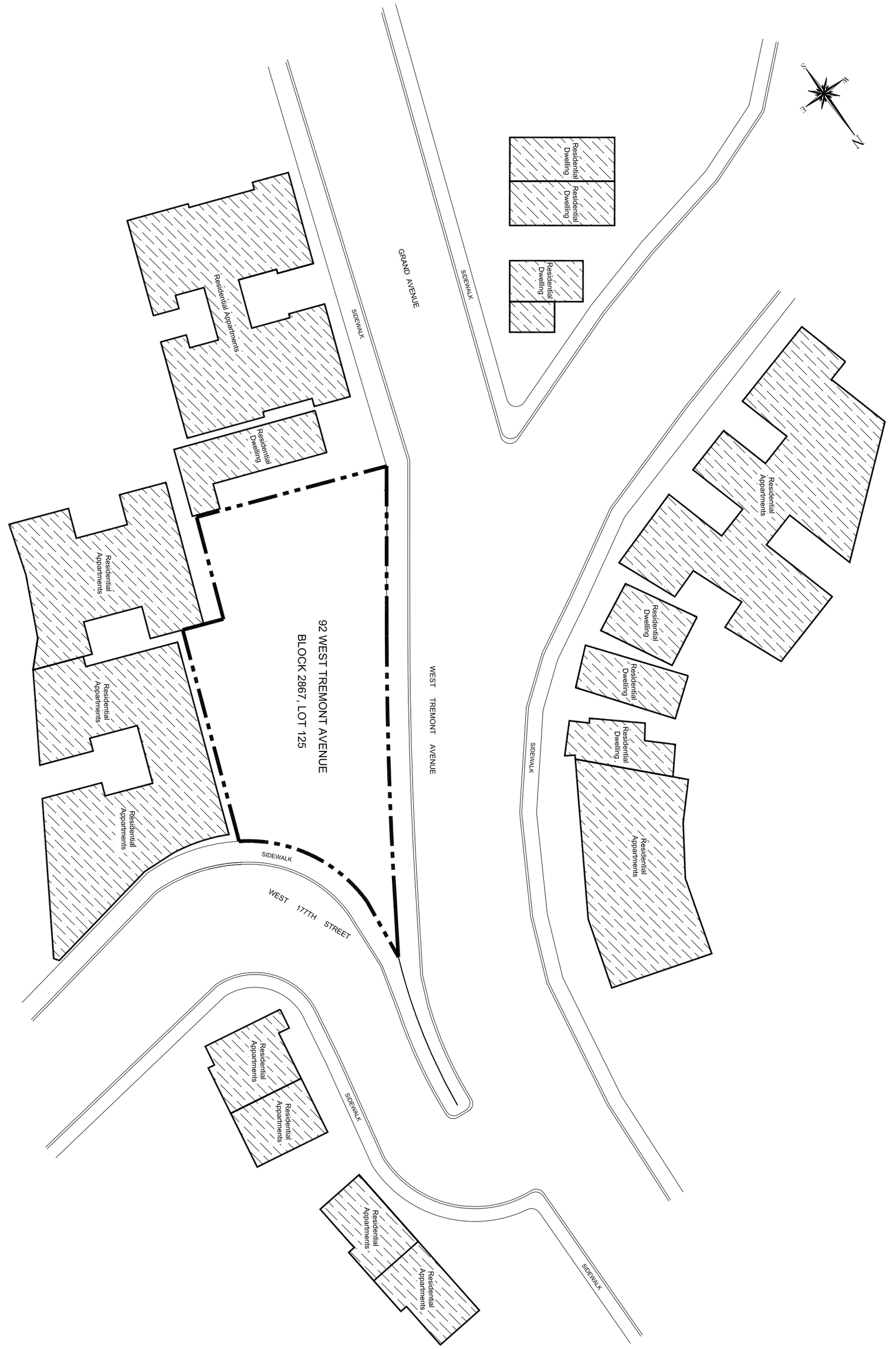
Table 4 - SSDS Startup Soil Vapor Sample Summary

92 W. Tremont Avenue, Bronx NY

CAS Number	Parameter Name	NYSDOH FINAL SVI GUIDANCE TABLE 3.1 AIR GUIDE LINES	SV-1 (SSDS "Branch 4")	SV-2 (SSDS "Branch 3")	SV-3 (SSDS "Branch 2")
			12/8/2014	12/8/2014	12/8/2014
	Sample ID		*ug/m^3*	*ug/m^3*	*ug/m^3*
108-90-7	Chlorobenzene	-	ND	ND	ND
124-48-1	Chlorodibromomethane	-	ND	ND	ND
75-00-3	Chloroethane	-	ND	ND	ND
67-66-3	Chloroform	-	1.21	3.38	2.53
74-87-3	Chloromethane	-	0.828	0.572	0.71
542-75-6	cis-1,3-Dichloropropene	-	ND	ND	ND
156-59-2	cis-1,2-Dichloroethene	-	ND	ND	ND
110-82-7	Cyclohexane	-	ND	1.17	ND
75-71-8	Dichlorodifluoromethane	-	2.7	3.84	4.4
100-41-4	Ethylbenzene	-	ND	0.977	ND
64-17-5	Ethanol	-	45.6	109	14.4
141-78-6	Ethyl Acetate	-	ND	ND	ND
76-14-2	Freon-114	-	ND	ND	ND
142-82-5	Heptane	-	ND	ND	ND
87-68-3	Hexachlorobutadiene	-	ND	ND	ND
67-63-0	Isopropanol	-	1.52	ND	ND
75-09-2	Methylene Chloride	60	ND	ND	ND
1634-04-4	Methyl Tert-Butyl Ether	-	ND	ND	ND
110-54-3	n-Hexane	-	1.22	1.14	0.899
1330-20-7	p/m-Xylene	-	2.51	3.97	ND
95-47-6	o-Xylene	-	0.999	1.56	ND
100-42-5	Styrene	-	ND	ND	ND
127-18-4	Tetrachloroethene (PCE)	30	14.4	38.7	36.1
109-99-9	Tetrahydrofuran	-	1.61	ND	ND
108-88-3	Toluene	-	5.77	3.17	3.47
1330-20-7	Total Xylenes	-	0.999	1.56	ND
156-60-5	trans-1,2-Dichloroethene	-	ND	ND	ND
10061-02-6	trans-1,3-Dichloropropene	-	ND	ND	ND
79-01-6	Trichloroethene (TCE)	5	ND	1.77	ND
75-69-4	Trichlorofluoromethane	-	5.55	7.25	52.5
593-60-2	Vinyl bromide	-	ND	ND	ND
75-01-4	Vinyl Chloride	-	ND	ND	ND
	Total BTEX		8.179	8.547	4.317
	Total VOCs		14.40	40.47	36.10

Notes: Shaded values indicate an exceedance of NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York October 2006 -

FIGURES



IMPACT ENVIRONMENTAL
170 KEYLAND COURT
BOHEMIA, NEW YORK 11716
TEL (631) 269-8800 FAX (631) 269-1599

1000 PAGE AVENUE
LYNDHURST, NEW JERSEY 07071

TITLE:

SITE LOCATION PLAN

60 W 177th St &
92 W Tremont Ave.
Bronx, New York

DRAWN BY:	JC
CHECKED BY:	KK
DATE:	01/24/2016

PROJECT #	2166-03-03-3002
FIGURE #	1

BCP# 12CBCPO16X

WEST TREMONT AVENUE - 80'

ENTRANCE

FIVE & SIX STORY APARTMENT BUILDING

LANDSCAPING

TERRACE

62'-1" TERRACE

LANDSCAPING

EXISTING TREES
TO REMAIN

PROTECT
EXISTING TREES

EXISTING
6 STORY BUILDING

EXISTING
6 STORY BUILDING

50'-0"
184'-0"
51'-3"
23'-5"
27'-0"
29'-10"
13'-8"
37'-6"
10'-2"
93'-3"
47'-1"
43'-1"
61'-8"
56'-0"
50'-0"
20'-3"
104'-0"
77'-9"
8'-0"
29'-11"
28'-1"
8'-8"
6'-0"

PROJECT # 2166-03-03-3002
FIGURE # 2
BCP# 12CBCPO16X

SITE PLAN

DRAWN BY: BH
CHECKED BY: KK
DATE: 01/24/2016

TITLE:

60 W 177th St &
92 W Tremont Ave.
Bronx, New York

IMPACT ENVIRONMENTAL
170 KEYLAND COURT
BOHEMIA, NEW YORK 11716
TEL (631) 269-8800 FAX (631) 269-1599
1000 PAGE AVENUE
LYNDHURST, NEW JERSEY 07071

Px HOTSPOT GPS COORDINATE
POINT LOCATIONS

EP-x BOTTOM OF EXCAVATION END POINT
SAMPLE LOCATION

HS-x HOTSPOT EXCAVATION SIDEWALL SOIL
SAMPLE LOCATION

WEST TREMONT AVENUE

Basement Level - Excavate to Approx. Elev. 87.0

Hotspot
Excavate to Approx. Elev. 75.0
(Bedrock)

Cellar Level - Excavate to Approx. Elev. 76.0

Terrace Level - Unexcavated Approx. Elev. 79.0

Landscape Area
Unexcavated Approx. Elev. 74.0

P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12

HS-W HS-N HS-S HS-E

EP-1 EP-2 EP-3 EP-4 EP-5 EP-6 EP-7 EP-8 EP-9 EP-10 EP-11

SIDEWALK

WEST 177TH STREET

HOTSPOT PERIMETER COORDINATES

NATIONAL GEODETIC SURVEY
GP TO PC PROGRAM
1983 DATUM

STATION NAME	LATITUDE (NORTH)	LONGITUDE (WEST)	NORTHING(Y) METER	EASTING(X) METER	ZONE	CONVERGENCE D M S	SCALE FACTOR
P1	40 51 0.13000	073 54 45.69000	75889.433	307362.288	NY L	0 3 25.58	0.99999490
P2	40 51 0.20000	073 54 45.48000	75891.597	307367.205	NY L	0 3 25.72	0.99999490
P3	40 51 0.21000	073 54 45.25000	75891.911	307372.592	NY L	0 3 25.87	0.99999490
P4	40 51 0.07000	073 54 45.00000	75887.598	307378.452	NY L	0 3 26.04	0.99999490
P5	40 50 59.82000	073 54 44.91000	75879.889	307380.568	NY L	0 3 26.09	0.99999490
P6	40 50 59.70000	073 54 45.10000	75876.183	307376.121	NY L	0 3 25.97	0.99999490
P7	40 50 59.66000	073 54 45.29000	75874.944	307371.672	NY L	0 3 25.85	0.99999490
P8	40 50 59.64000	073 54 45.47000	75874.323	307367.456	NY L	0 3 25.73	0.99999490
P9	40 50 59.68000	073 54 45.64000	75875.553	307363.473	NY L	0 3 25.62	0.99999490
P10	40 50 59.79000	073 54 45.77000	75878.943	307360.425	NY L	0 3 25.53	0.99999490
P11	40 50 59.89000	073 54 45.81000	75882.027	307359.485	NY L	0 3 25.51	0.99999490
P12	40 51 0.04000	073 54 45.76000	75886.655	307360.651	NY L	0 3 25.54	0.99999490

PROJECT # 2166-03-03-3002
FIGURE # 3
BCP# 12CBCPO16X

TITLE: REMEDIAL/REDEVELOPMENT
EXCAVATION & END POINT
SAMPLE LOCATION PLAN

DRAWN BY: BH
CHECKED BY: KK
DATE: 01/24/2016

60 W 177th St &
92 W Tremont Ave.
Bronx, New York

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WEST TREMONT AVENUE

5-INCH THICK CONCRETE SLAB COVER

2-FEET THICK REUSED ONSITE SOIL COVER AND/OR REUSED SOIL BACKFILL LOCATIONS

16-INCH THICK CONCRETE WALL COVER (SUB-GRADE LOCATIONS)

Landscape Area
2-feet Thick Reused
Soil Cover

Basement Level - 5-inch Thick Concrete Slab

Cellar Level - 5-inch Thick Concrete Slab

Exterior Terrace - 5-inch Thick Concrete Slab

Landscape Area - 2-feet Thick Reused Soil Cover

SIDEWALK

WEST 177TH STREET

PROJECT # 2166-03-03-3002

FIGURE # 4

BCP# 12CBCPO16X

TITLE: COMPOSITE COVER & SOIL REUSE LOCATION PLAN

DRAWN BY: BH

CHECKED BY: KK

DATE: 01/24/2016

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