

REMOVAL ACTION REPORT

**ROBERTO CLEMENTE TOWN PARK
400 BROADWAY
BRENTWOOD, NY 11717**

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TOWN OF ISLIP
DEPARTMENT OF
ENVIRONMENTAL CONTROL
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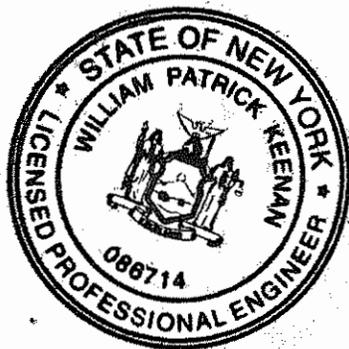
SEPTEMBER 21, 2015

I, William P. Keenan, certify that I am currently a New York State registered professional engineer, and that this Material Removal Action Report (“RAR”) pertaining to the Roberto Clemente Town Park located at 400 Broadway in Brentwood, NY, was prepared in accordance with all applicable statutes and regulations, and in substantial conformance with the requirements outlined in the New York State Department of Labor Industrial Code Rule 56, including variances granted for this work (exterior removal of non-friable ACM in soil).

All activities outlined in the attached RAR were performed in full conformance with the New York State Department of Environmental Conservation-approved plan entitled “Material Removal Work Plan”, dated January 7, 2015.

<u>086714</u>	<u>9/30/2015</u>	<u>William P. Keenan</u>
NYS Professional Engineer #	Date	Signature

PE stamp



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REMOVAL ACTION REPORT

1.0 INTRODUCTION

This Material Removal Action Report (“RAR”) was prepared by Enviroscience Consultants, Inc. (“Enviroscience”) to detail all contaminated fill removal activities at Roberto Clemente Town Park at 400 Broadway in Brentwood, New York (“The Site”). The material removal was performed based on the New York State Department of Environmental Conservation (“NYSDEC”) approved Work Plan, which was dated January 7, 2015. Figure 1 shows The Site’s location, and Figure 2 shows the general site layout.

Based on the findings of an investigation that was performed for the Suffolk County District Attorney’s Office in May 2014, soils at The Site contained elevated levels of semi-volatile organic compounds (“SVOCs”), the pesticide dieldrin, and the metals barium, lead, and zinc, along with non-friable asbestos-containing building material (“ACM”). For the removal action, performed between June and August 2015, impacted soils and materials were excavated and removed from The Site. This was the first step in the process to restore The Site to its original use, which was for recreational purposes.

2.0 SITE BACKGROUND

2.1 Site Description

Roberto Clemente Town Park is designed to be a multiple-use recreational park that is located in a residential setting in the hamlet of Brentwood, New York, located in the Town of Islip. The Park occupies approximately 30 acres on the west side of Broadway, north of West 18th Street and south of Nolin Street. Timberline Drive borders the Park to the west.

The Park currently remains closed to the public, however, it includes swimming pool facilities, baseball fields, parking lots, support buildings, and a playground, along with the soccer fields that were covered by the illegal dumping activities. The approximate area of the soccer fields is 4 acres. Additionally, a recharge basin that is located in the southwestern portion of the Park was impacted by illegal dumping activities, although the impacted area within the recharge basin is less than an acre. This RAR pertains to activities that were performed in connection with the former soccer fields, the recharge basin, and its immediate adjoining locations, which are located in the western portion of the Park.

2.2 Previous Investigation

Enviroscience investigated The Site for the Suffolk County District Attorney's Office on May 8 and 9, 2014, which involved the installation of 40 temporary soil borings. Of the 40 soil boring locations, 24 soil borings were performed in connection with the former soccer fields, and 10 soil borings were performed in connection with the recharge basin. Additionally, a total of 6 soil borings were obtained as "background" samples for comparison purposes.

From each boring location, one soil sample for laboratory chemical analysis was obtained; additional samples were obtained for asbestos. The depths of soil borings in the former soccer fields and recharge basin were performed to the apparent depth of native soil (the interface of the illegally dumped soil and the native soil), which was determined by visual methods. The borings ranged to a depth of approximately 9 feet in the former soccer fields and to a depth of approximately 5 feet within the recharge basin. However, the average depths of the borings were 6 feet in the former soccer fields and 4 feet within the recharge basin.

Subsequent to sample retrieval, all of the soils obtained from the borings were visually evaluated to determine whether there was evidence of localized pockets of more impacted soils within the borings, along with suspect ACM. Additionally, the ground surface in the vicinity of the soil borings was visually inspected for suspect ACM.

One soil sample was obtained for laboratory chemical analysis from each boring, along with five samples for asbestos analysis. The samples for chemical analysis were collected as a composite sample within each boring. All of the samples for laboratory chemical analysis were analyzed by a certified laboratory for the following: volatile organic compounds (“VOCs”) by U.S. Environmental Protection Agency (“USEPA”) Method 8260C, including tentatively identified compounds (“TICs”); SVOCs by USEPA Methods 8270D, including TICs; pesticides by USEPA Methods 8081B; polychlorinated biphenyls (“PCBs”) by USEPA Method 8082A; total extractable petroleum hydrocarbons (“EPH”) by New Jersey Department of Environmental Protection (“NJDEP”) EPH Rev 3.0; metals by USEPA Method 6010C, including mercury by USEPA Method 7471B; toxicity characteristic leaching procedure (“TCLP”) metals by USEPA Method 6010C/1311, including mercury by USEPA Method 7470/1311; ignitability by USEPA Method 1030P; oxidation-reduction potential (“ORP”) by ASTM Method 1498-08M; paint filter test by USEPA Method 9095A; hexavalent chromium by USEPA 7196A; cyanide by USEPA Method 9014/9010C; pH by USEPA Method 9045D; and reactivity by USEPA Methods SW-846 Chapters 7.3.3 and 7.3.4. The intent of this analytical list was to provide at least initial information for waste characterization purposes.

Enviroscience, which is also a certified laboratory for ACM, analyzed the samples for asbestos analysis. Suspect ACM in the soils were analyzed by USEPA Methods 600/M4-82/20 for friable materials, along with New York State Department of Health (“NYSDOH”) Environmental Laboratory Approval Program (“ELAP”) Item 198.6/4 for non-friable materials.

The results from the investigation showed that VOCs, SVOCs, pesticides, PCBs, and metals were detected in soil samples. The results are compared to the NYSDEC Residential-Use Soil Cleanup Objectives (“SCOs”). The applicable NYSDEC Soil Cleanup Objectives are derived from 6 NYCRR Part 375 [Table 375-6.8(b)], which are the Residential Restricted Use Soil Cleanup Objectives for Protection of Public Health. These SCOs represent a soil hazard level for this project that is conservatively low and

protective of human health, including developing children ages 6 years and younger, which are most likely to engage in increased hand-to-mouth activity (pica behavior) for ingestion concerns.

Based on the results of the 2014 investigation, exceedances of the applicable NYSDEC SCOs were identified in 5 of the 34 boring locations that were performed in the former soccer fields and recharge basin, which were a select number of SVOCs, the pesticide dieldrin, and the metals barium, lead, and zinc. No elevated levels were identified in any of the background samples, and no hazardous waste was identified in connection with The Site based on the analytical laboratory's testing results.

For asbestos, non-friable ACM was identified on the ground surface adjacent to 17 of the 34 boring locations that were performed in the former soccer fields and within the recharge basin. Also, non-friable ACM was identified within 3 of the 34 borings. No ACM was identified in any of the background samples or in their immediate vicinity.

2.3 Site Characterization

In the southernmost portion of the former soccer fields, boring locations SB-1, SB-13, SB-21, and SB-22 showed elevated levels of SVOCs, metals, and the pesticide dieldrin above their respective NYSDEC Residential SCOs. No other locations from the former soccer fields showed exceedances of the NYSDEC Residential Soil Cleanup Objectives.

Non-friable ACM was identified on the ground surface adjacent to 10 of the 24 boring locations in the former soccer fields, which were as follows: SB-1; SB-2; SB-6; SB-10; SB-12; SB-13; SB-15; SB-21; SB-22; and SB-23. Non-friable ACM was also identified in the borings at SB-1, SB-3, and SB-23.

In the eastern portion of the recharge basin, the impacted portion of this structure, boring location SB-28 showed elevated levels of SVOCs and lead, which were the only exceedances of the NYSDEC Residential SCOs in the recharge basin samples.

For asbestos, no ACM was identified in the borings obtained from the recharge basin. However, non-friable ACM was identified on the ground surface, adjacent to six of 10 borings performed in the recharge basin: SB-27; SB-28; SB-30; SB-31; SB-32; and SB-33.

2.4 Groundwater Monitoring

Prior to the remedial activities, groundwater monitoring wells were installed in accordance with the NYSDEC-approved Work Plan for groundwater well installation (dated August 18, 2014), which included the installation of three wells (MW-1, MW-2, and MW-3) on September 24 and 26, 2014, along with two sets of shallow and deep groundwater monitoring wells (MW-4S, MW-4D, MW-5S, and MW-5D) on January 6 and 7, 2015. These wells were installed to determine the baseline groundwater conditions at The Site, and to evaluate whether there may be long-term impacts to the groundwater beneath The Site and its immediate vicinity. A copy of the Work Plan for the groundwater monitoring well installation and the groundwater monitoring reports (October 16, 2014 and February 10, 2015), including well construction logs, are provided in Appendix A of this RAR. The well locations are shown in the groundwater monitoring reports and Figure 3 of this RAR.

Prior to the start of Remediation activities, the groundwater monitoring wells were installed at The Site to establish baseline groundwater conditions. A NYSDEC representative was present during the well installations.

All of the groundwater monitoring wells except for one (MW-1) were installed as downgradient wells. Based on site-specific information obtained from the wells, the depth to regional groundwater was measured to be approximately 23 feet at MW-1 and MW-2, 8 feet at MW-3, 21 feet at MW4S/MW-4D, and 19 feet at MW-5S/MW-5D, which varied primarily due to topographic elevation changes, depending on the locations of the wells. The actual measurements for depth-to-water and the elevations are provided in the groundwater reports (Appendix A).

For the well installations, a hollow-stem auger drill rig utilized 4.25-inch diameter augers to the maximum extent of the boring, which varied based on the actual depth-to-water at each location in order to have the wells installed to a depth of 8 feet into the regional groundwater. During the well installations, the soil cuttings were continuously characterized for composition and texture, along with field screening for indications of impacted soil by using visual methods and a photo-ionization detector (“PID”). There were no indications of soil contamination during the installation of the wells. None of the wells were installed in areas of contaminated fill, and no soil samples for laboratory analysis were obtained during well installations.

The borings were completed as two-inch diameter Schedule 40 PVC groundwater monitoring wells that were screened with 10 feet of 2-inch diameter Schedule 40 PVC flush joint #10 slot screen. The wells were gravel-packed from one foot below the screen to two feet above the screen with a Morie #1 gravel pack. A fine sand seal of Morie #00 sand and a 2-foot flexible bentonite seal were installed over the gravel. The wells were backfilled from the bentonite seal to grade with drill cuttings that contain no indications of impacted soil, and the groundwater monitoring wells were finished at grade with locking caps, locks, and 8-inch diameter manholes. The specific construction details for each well are contained in the groundwater monitoring reports (Appendix A). After installation, the wells were properly developed.

At the beginning of each sampling event, the depth-to-groundwater in the wells were measured to the nearest one-hundredth of a foot using a water level indicator. Based on these measurements, the site-specific groundwater flow direction beneath The Site was determined to be towards the southeast. During well purging, standard parameters (temperature, pH, conductivity, and turbidity) were measured after each casing volume using real-time field-measuring equipment. The groundwater from each well was sampled after at least three well casing volumes of water are purged from each well and there was a 10% or less difference in two consecutive parameter measurements, along with turbidity readings of less than 50 NTUs. A maximum five casing volumes was purged from each well.

All of the groundwater samples for laboratory analysis were obtained using dedicated polyethylene bailers, collected in laboratory-supplied containers, preserved properly, placed in an ice-filled cooler, and transported to York Analytical Laboratories, Inc., which is a National Environmental Laboratory Approval Program (NEVLAP)-accredited laboratory, New York Certification No. 10854. The samples were analyzed for NYSDEC Part 375 parameters, which include VOCs, SVOCs, metals, pesticides, PCBs, and an herbicide. After sample collection, the locking j-plugs and well covers were replaced to protect the wells. Also, a chain-of-custody form was completed to document the sequence of sample possession.

The groundwater results showed that there were no significant impacts to the groundwater from the illegal disposal of contaminated fill at The Site except possibly for metals that were summarized in the February 10, 2015 report. However, it's suspected at this time that the elevated levels of metals in the groundwater samples resulted from increased turbidity of the samples, which will be confirmed during the post removal action groundwater sampling event, which is anticipated for October 2015. Therefore, the groundwater results were acceptable to the NYSDEC.

3.0 MATERIAL REMOVAL/ABATEMENT ACTIONS

The remediation site work was conducted by Gramercy Group, Inc. (the "Contractor") following a public bid process administered by the Town of Islip. Remediation activities were performed by removing the illegally disposed soils and materials from The Site by excavator for proper offsite disposal at approved facilities, which were the Blydenburgh Road Landfill for on-Long Island disposal and the Former New Jersey Zinc-West Plant for off-Long Island disposal. The material for on-Long Island disposal was acceptable for disposal at a landfill located on Long Island since there were no exceedances of the NYSDEC Protection of Groundwater SCOs. Material disposed off Long Island exceeded the NYSDEC Protection of Groundwater SCOs.

Daily field logs of Site activities, which are provided in Appendix B, include the daily activities performed, personnel on Site, the daily amount of contaminated fill removed, along with an inventory of disposed materials, and the designated truck route for the day. Photographic documentation of the remedial activities is provided in Appendix C.

A total of 38,932.44 tons of contaminated fill was excavated and properly disposed from The Site. For the on-Long Island portion of disposal, a total of 24,125.80 tons of contaminated fill was disposed at Blydenburgh Road Landfill (on-Long Island disposal), while a total of 14,806.64 tons of contaminated fill was disposed at the Former New Jersey Zinc-West Plant (off-Long Island disposal). A copy of the waste disposal manifests is provided in Appendix D, which is separated for off-Long Island disposal (Appendix D-1) and on-Long Island disposal (Appendix D-2).

3.1 Site Preparation

On June 1, 2015, the Contractor began mobilization for site preparation, which included preparing the entire work area in accordance with Industrial Code Rule (ICR) 56-11.5(c)(2). The Site's preparation activities included installation of materials to provide additional protection to the surrounding area and the environment during remediation activities, along with other operations that are designed to facilitate remediation activities. Also, the contractor installed and maintained temporary security fences, critical barriers, staging areas, stormwater control measures, and decontamination zones as part of site preparations.

3.2 Management & Site Control

Enviroscience was responsible for overseeing all contractors and subcontractors conducting the remedial work.

Only certified persons in connection with the asbestos abatement and authorized visitors were permitted in the work areas. All equipment operators utilized for removal and loading activities within the regulated abatement work area were certified in compliance with ICR 56-3.2. Unauthorized personnel were not allowed to access any regulated

asbestos abatement work area except for waste hauler truck drivers, in accordance with the site-specific variance approved by the NYSDOL. These truck drivers were restricted to their enclosed cabs while temporarily in the regulated work area for waste transfer activities only.

Enviroscience field personnel met onsite with Town of Islip officials to discuss the day's events prior to and at the completion of the day's activities. Enviroscience maintained a daily site control log that included a record of all visiting personnel, which are the daily field logs that are provided in Appendix B.

Access to Roberto Clemente Town Park was restricted with a security fence and a locked gate, along with warning signs, written in English and Spanish, which were posted every 100 feet around the perimeter of the Park. Also, sign in/sign out sheets, warning tape and warning signs, and implementation of safe work practices detailed in 29 CFR 1910.120 and 29 CFR 1926.65, along with ICR 56-7.4(c), were employed at The Site.

3.3 Site Remedial Operations

In accordance with the NYSDOL-approved site-specific variance, the Contractor (a licensed Asbestos Abatement Contractor) performed the excavation with New York State Certified Asbestos Supervisors and Handlers. Also, a NYSDEC Project Monitor was present during remedial operations. All equipment operators utilized for removal and loading activities within the regulated asbestos abatement work area were certified in compliance with ICR 56-3.2. The material was disposed as non-friable asbestos waste.

For the excavation activities, the Contractor began in the northern portion of the former soccer fields and proceeded in a general southerly direction, excavating the contaminated fill first that were to be disposed at the on-Long Island disposal facility, Blydenburgh Road Landfill. To identify the soil suitable for disposal at Blydenburgh at The Site, demarcation boundaries established by GPS coordinates were installed in the former soccer fields prior to excavation activities.

The northernmost portion of the former soccer fields was excavated to an elevation of 60 feet above mean sea level (“AMSL”), while the remaining portions of the former soccer fields, which included contaminated fill disposal at Blydenburgh Road Landfill and the Former New Jersey Zinc-West Plant, were excavated to an elevation of 59.7 feet AMSL. These elevations for the former soccer fields were determined based on historical topographic information, along with observations and field screening that were performed during the remedial action. The contaminated fill from the recharge basin, which was disposed entirely at the Former New Jersey Zinc-West Plant, was performed to a depth based on field observations, although no specific elevation was defined due to the range of topographic elevations in the recharge basin.

All of the work was performed in accordance with ICR 56 for Controlled Demolition with Asbestos In-place and Exterior Project Removal of Non-Friable ACM. The work was identified as a Large Asbestos Project, and a full-time Project Monitor was on-site and responsible for oversight for the abatement contractor during all abatement activities to ensure compliance with ICR 56 and Variance conditions. Engineering controls and work practices were utilized, including regulated work areas, a personal decontamination unit, wet methods, and air monitoring.

The contaminated fill was continuously wetted with amended water, prior to, during, and after removal. ACM was maintained in an adequately wet condition prior to, during, and after removal. No dry disturbance or removal of ACM or asbestos-contaminated fill was performed.

During excavation activities, environmental monitors from Enviroscience were present to visually evaluate for the presence of suspect ACM and pockets of impacted contaminated fill that may require special handling or disposal to an alternative facility. However, no areas that required special handling were identified during remedial activities.

Following excavation, the contaminated fill was loaded into lined trucks and covered with at least two layers of 6-mil fire retardant polyethylene sheeting as per ICR 56-11.5(c)(11). There was no visible emissions or water leakage from the trucks.

Once a truck was loaded, a waste disposal manifest was completed and signed, and a copy of the manifests remained onsite. A copy of the waste disposal manifests is provided in Appendix D. Additionally, an inventory of the waste hauling trucks leaving The Site was recorded with the date, time, truck number, license plate number, destination, and approximate weight. A copy of the truck information is provided in the daily field logs (Appendix B). Due to the residential location of The Site, specific truck routes were mandated by the Town of Islip on a daily basis.

3.4 Equipment Decontamination

A personal decontamination facility was utilized to comply with ICR 56-7.5. A prebuilt trailer unit was used as a decontamination unit that was sized for a large project, which was located along the eastern side of the active work zone.

An equipment decontamination area was cordoned off within each work area for cleaning heavy equipment as per ICR 56-11.5 (c)(4). All waste, tools and equipment, personnel decontamination unit, waste/equipment decontamination facility were removed from The Site in accordance with ICR 56-10.

4.0 COMMUNITY & ASBESTOS AIR MONITORING

4.1 Community Air Monitoring

A Community Air Monitoring Plan (“CAMP”) was implemented as part of the remedial action at The Site. The intent and objective of air monitoring associated with the CAMP was to monitor air quality during soil excavation activities in order to provide a measure of protection for the community and site workers from potential airborne contaminant releases as a result of work activities. Air monitoring for particulates (particulate matter less than 10 microns in size; PM-10) was conducted at one location upwind of work areas

(exclusion zone) to establish background conditions, one location crosswind, and two locations downwind of the exclusion zone to monitor possible contaminant migration. The locations of the CAMP stations for each day are provided in Appendix E, along with the CAMP results. Environmental air monitoring and observations of visible emissions during excavation activities was performed according to methods contained in the CAMP, which was implemented by Enviroscience personnel.

The CAMP was performed throughout the project, during periods of potential ground disturbance, except during rain events since rain events significantly reduce threats for airborne particulates. The CAMP results are provided in Appendix E.

Based on the criteria established by the CAMP, there were no exceedances during the entire project except for one day, which was July 1, 2015, in the downwind monitoring locations. A street sweeper that was cleaning the parking lot caused the exceedance, which was immediately corrected. Corrective action was implemented, which involved wetting the parking lot prior to additional street sweeping activities. The corrective action was effective in reducing airborne particulates during future parking lot cleaning events.

4.2 Asbestos Air Monitoring

Asbestos air monitoring and analysis was conducted as per ICR 56-4 and was conducted daily during abatement and cleaning activities as per ICR 56-11.5(a). A copy of the asbestos air monitoring results is provided in Appendix F.

Based on the asbestos air monitoring results, there were no exceedances above 0.01 fibers per cubic centimeter, the air clearance level asbestos projects.

5.0 POST REMEDIATION ENDPOINT SAMPLING

After remediation at The Site, a total of 25 confirmatory soil endpoint samples were obtained from the former soccer fields and the recharge basin to evaluate the effectiveness of the removal efforts. Of the 25 samples, 20 samples were obtained from the former soccer fields and 5 samples were obtained from the recharge basin. The

endpoint sampling locations in the former soccer fields are shown in Figure 4, while the endpoint sampling locations in the recharge basin are shown in Figure 5.

5.1 Endpoint Sampling Methods

Prior to the collection of the confirmatory soil endpoint samples, the ground surface of the former soccer fields and the recharge basin was visually inspected for asbestos by a New York State Department of Labor (“NYSDOL”) licensed inspector/project monitor. After confirmation that no asbestos materials were observed, the collection of the soil confirmatory endpoint samples was scheduled with representatives of the NYSDEC who were present during all three endpoint sampling events, which included the selection of the sampling locations.

Endpoint Samples 1 to 3 were obtained on July 9, 2015 from the northernmost portion of the former soccer fields. Endpoint Samples 4 to 18 were obtained on August 6, 2015 from the central portion of the former soccer fields. Endpoint Samples 19 and 20 were obtained on August 24, 2015 from the southernmost portion of the former soccer fields, while Endpoint Samples 21 to 25 were also obtained on August 24, 2015, although these samples were collected from the recharge basin.

The confirmatory soil endpoint samples were obtained using dedicated sampling equipment from ground surface at locations approved by the NYSDEC. Subsequent to retrieval, the soil was evaluated with a photo-ionization detector (“PID”) to screen for the presence of organic vapors. Based on the PID screening, no significant concentrations of organic vapors were detected.

The confirmatory endpoint samples for laboratory chemical analysis were collected in three 5-gram Encore samplers, one 4-ounce glass container, and one 8-ounce glass container. The chemical analytical laboratory provided the sample containers, and the samples were placed in ice-filled cooler and properly preserved.

The samples for laboratory chemical analysis were transported to York Analytical Laboratories, Inc., which is a NEVLAP-accredited laboratory, New York Certification No. 10854. The soil samples were analyzed for NYSDEC Part 375 parameters, which include VOCs, SVOCs, metals, pesticides, PCBs, and an herbicide. A chain-of-custody form was completed to document the sequence of sample possession, which is included with each laboratory report.

5.2 Endpoint Sampling Results

Tables 1, 2, and 3 summarize the soil endpoint sample laboratory results. Table 1 summarizes the results for samples 1 to 3. Table 2 summarizes the results for samples 4 to 18, while Table 3 summarizes the results for samples 19 to 25. A copy of the three laboratory reports is provided in Appendix G.

The confirmatory soil endpoint samples were compared to the NYSDEC Residential SCOs. Based on the results, there were no exceedances of the SCOs except for one compound, benzo(a)anthracene, in the southwestern-most portion of the former soccer fields, at Endpoint Sample 19, that was detected at 1,030 micrograms per kilogram ($\mu\text{g}/\text{kg}$), which is slightly above its SCO of 1,000 $\mu\text{g}/\text{kg}$. There were no other exceedances of the SCOs in the endpoint samples connected with the remedial effort.

5.3 Endpoint Sample Discussion

The confirmatory soil endpoint sample results demonstrate that the remedial action performed at The Site was effective in removal of the contaminated fill. Although one compound was detected slightly above its SCO, which was in the southwestern-most portion of the former soccer fields, this slight exceedance is not considered to be a significant concern based on its low concentration, its very limited extent, and the proposed restoration of The Site, which will include a soil cover that will be installed in the area of the former soccer fields. The proposed soil cover will eliminate exposure pathways to anticipated future users of The Site. NYSDEC personnel confirmed this determination in their correspondence, dated September 10, 2015.

6.0 DEVIATIONS FROM WORK PLAN

There were no deviations from the NYSDEC-approved Work Plan.

7.0 CONCLUSIONS

Based on the results, Enviroscience provides the following conclusions for the remedial action:

- A total of 38,932.44 tons of contaminated fill was excavated and properly disposed from the former soccer fields and recharge basin at The Site. 24,125.80 tons of contaminated fill was disposal at the designated facility for on-Long Island disposal in connection with The Site, which was Blydenburgh Road Landfill, while 14,806.64 tons of contaminated fill was disposed at the designated facility for off-Long Island disposal in connection with The Site, which was the Former New Jersey Zinc-West Plant;
- The 25 confirmatory soil endpoint samples obtained from the former soccer fields and the recharge basin show that the remedial action effectively removed contaminated fill from The Site. Although one isolated location in the southwestern-most portion of the former soccer fields showed a slight exceedance of one compound, which was an SVOC, this slight exceedance is not considered to be a significant concern based on its low concentration (NYSDEC correspondence dated September 10, 2015), its very limited extent, and the proposed restoration of The Site, which will include a soil cover that will be installed in the area of the former soccer fields. The proposed soil cover will eliminate exposure pathways to anticipated future users of The Site;
- A CAMP was performed at four stations during the remedial effort to perform real-time air monitoring for particulates. The results of the CAMP showed no exceedances except for elevated particulate levels on one day, which was due to a street cleaner working in the Park's parking lot. Corrective action was implemented, which included wetting the parking lot in the Park, and no additional exceedances occurred. Therefore, the CAMP was effective;

- Air monitoring for asbestos was performed during the remedial effort, and no values exceed 0.01 fibers per cubic centimeter, the air clearance value in New York State; and
- Groundwater monitoring was performed prior to the remedial effort, which showed no significant impacts to groundwater from the illegal dumping activities except possibly for metals that were summarized in the February 10, 2015 report. However, it's suspected at this time that the elevated levels of metals in the groundwater samples resulted from increased turbidity of the samples, which will be confirmed during the post removal action groundwater sampling event, which is anticipated for October 2015.

8.0 RECOMMENDATIONS

Based on the results and conclusions, Enviroscience provides the following recommendations:

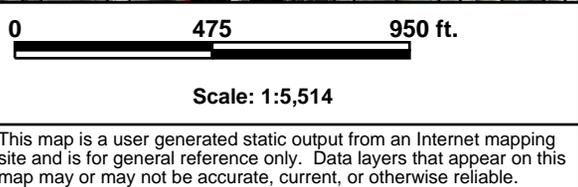
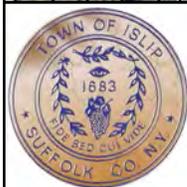
- No additional material removal is warranted at this time;
- Post-remediation groundwater monitoring at The Site's groundwater monitoring wells should be performed;
- As part of The Site's restoration, a soil cap should be installed on the former soccer fields.

FIGURES

Figure 1
Site Location
Roberto Clemente Town Park
400 Broadway, Brentwood, NY



Source: U.S. Geological Survey, 7.5-Minute Topographic Map, Central Islip, 2013



Roberto Clemente Park
 FIGURE 2: GENERAL LAYOUT
 ROBERTO CLEMENTE TOWN PARK
 400 BROADWAY, BRENTWOOD, NY

FIGURE 3
GROUNDWATER WELL LOCATIONS
ROBERTO CLEMENTE TOWN PARK
400 BROADWAY, BRENTWOOD, NY



NOTES

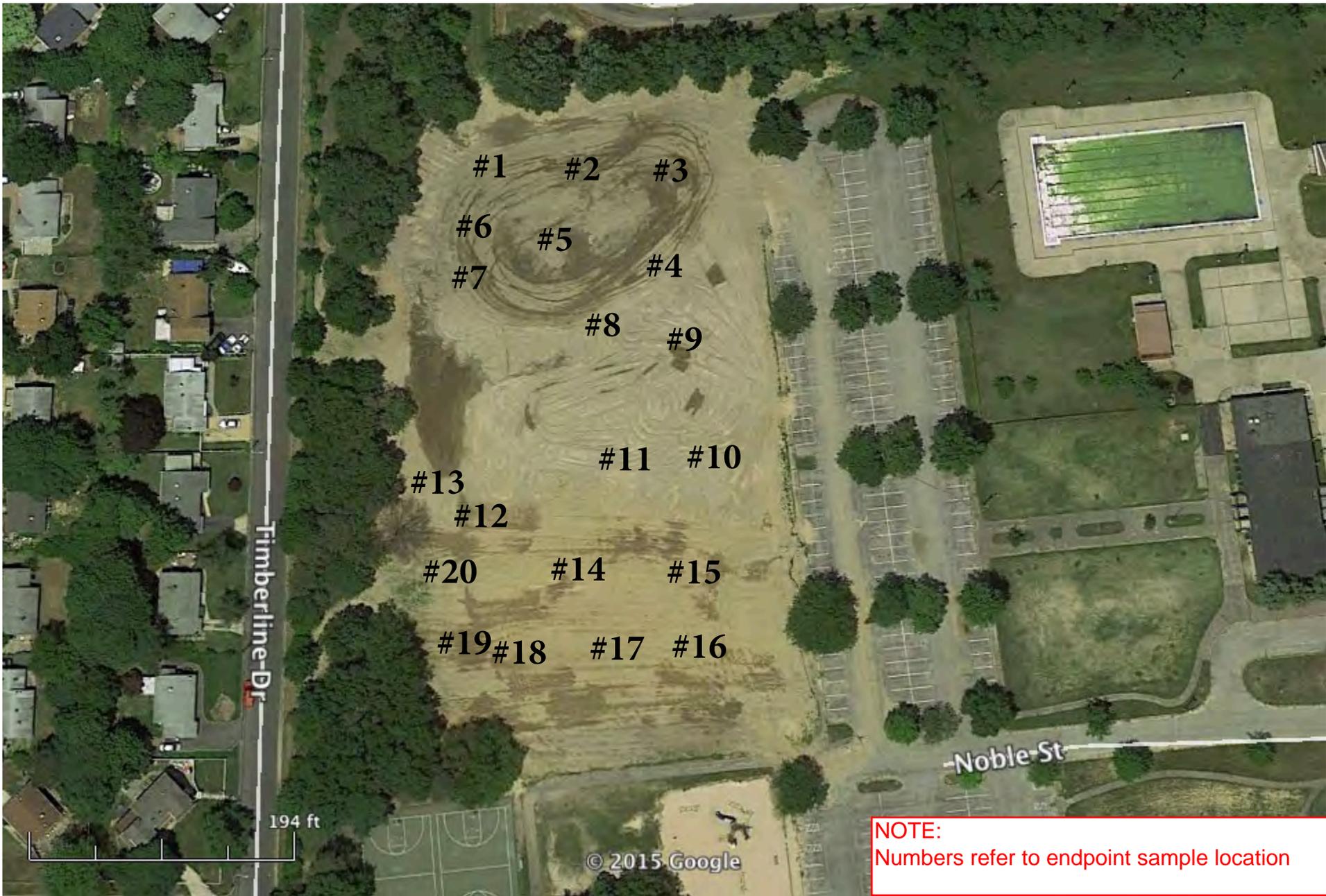
- MEASUREMENTS ARE IN ACCORDANCE WITH U.S. STANDARDS.
- THE HORIZONTAL DATUM SHOWN ON THIS PLAN IS REFERENCED TO NYSPCS NAD 83 (2011) LI ZONE AND THE VERTICAL DATUM IS NAVD88 (GEOID12A), RTK GPS.
- UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S "EMBOSSSED" OR "INKED" SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

SUFFOLK COUNTY REAL PROPERTY TAX MAP NO.:
 DISTRICT 0500
 SECTION 185.00
 BLOCK 01.00
 LOTS 073.000, 074.000, 097.000,
 094.002 & 101.002

I hereby certify that this map was made from an actual survey completed by me on 09/29/2014 and updated 1/13/2014.

DANIEL P. JEDLICKA, P.L.S.
 NYSPLS No. 50098

DATE	BY	DESCRIPTION	APPROV. BY
REVISIONS			
 Town of Islip Suffolk County, New York 400 Broadway BRENTWOOD, NEW YORK Monitoring Well Plan ROBERTO CLEMENTE PARK L. K. McLEAN ASSOCIATES, P.C. CONSULTING ENGINEERS & LAND SURVEYORS 437 SO. COUNTRY ROAD, BROOKHAVEN, NEW YORK			
Surveyed By:	K.G./B.W.	Scale: 1"= 200'	Sheet No.
Drawn By:	T.L.S	Date: OCTOBER 9 2014	1
Approved By:	D.P.J.	File No. 14073.000	1

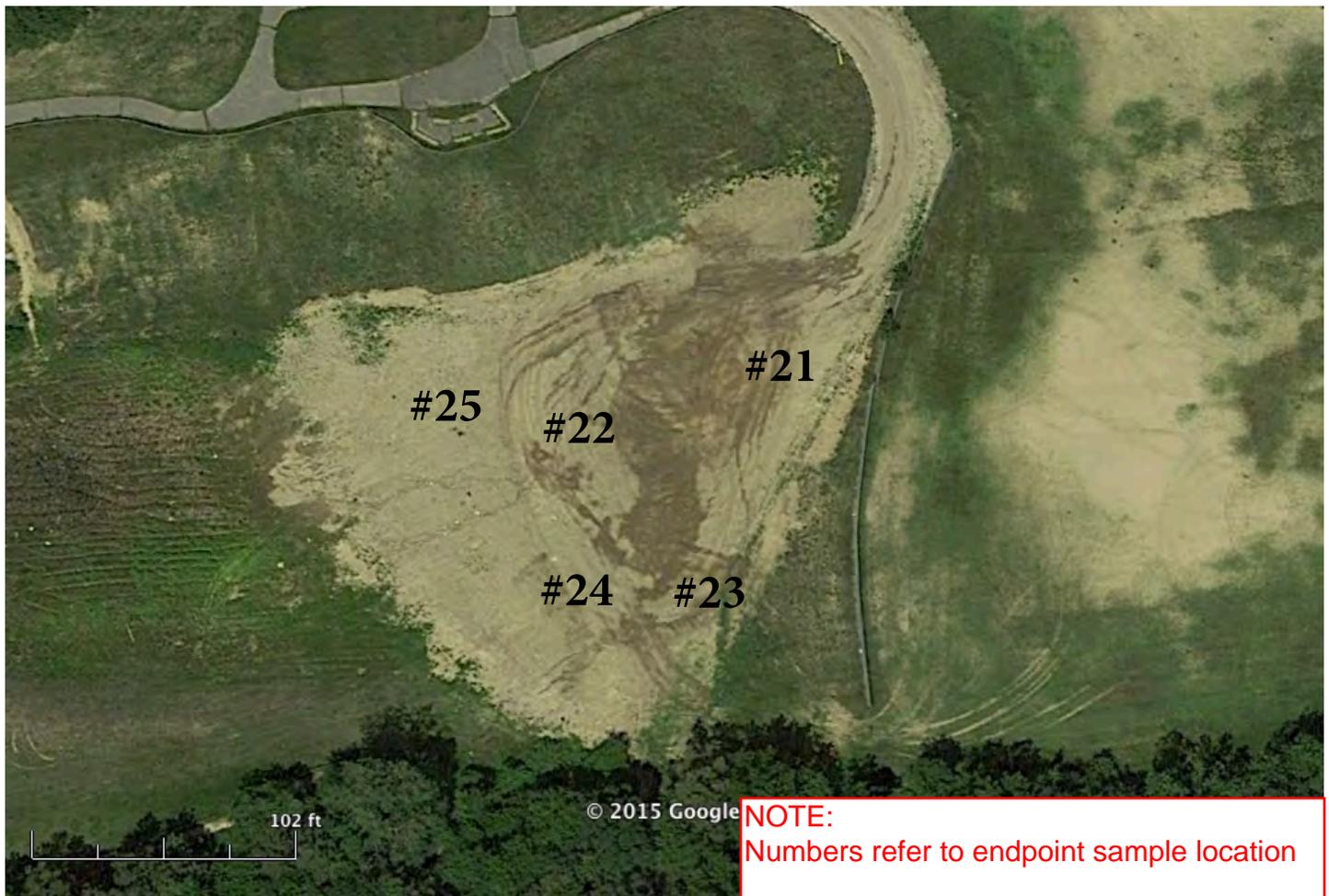


Google earth

feet
 meters



FIGURE 4
 FORMER SOCCER FIELDS-ENDPOINT SAMPLE LOCATIONS
 ROBERTO CLEMENTE TOWN PARK, 400 BROADWAY, BRENTWOOD, NY



Google earth

feet 200
meters 70



FIGURE 5
RECHARGE BASIN-ENDPOINT SAMPLE LOCATIONS
ROBERTO CLEMENTE TOWN PARK
400 BROADWAY, BRENTWOOD, NY

TABLES

Table 1
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 1 (N 40°46'18.786" W 73°13'46.3656")	Endpoint 2 (N 40°46'18.8292" W 73°13'45.3864")	Endpoint 3 (N 40°46'18.6528" W 73°13'44.7204")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>				
Methylene Chloride	28	21	27	51,000
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>				
Benzo(a)anthracene	50.1 J	129	ND	1,000
Benzo(a)pyrene	ND	84.9 J	ND	1,000
Benzo(b)fluoranthene	ND	84.9 J	ND	1,000
Benzo(k)fluoranthene	ND	80.0 J	ND	1,000
Chrysene	ND	130	ND	1,000
Fluoranthene	75.2 J	234	ND	100,000
Phenanthrene	ND	137	ND	100,000
Pyrene	72.4 J	236	ND	100,000
<i>Pesticides (in micrograms per kilogram)</i>				
4,4'-DDT	ND	24.0	7.95	1,700
alpha-Chlordane	9.10	10.3	4.99	910
<i>Metals (in milligrams per kilogram)</i>				
Arsenic	ND	2.40	1.43	16
Barium	12.1	47.1	17.0	350
Chromium	5.13	16.2	8.14	36
Copper	5.19	15.1	4.85	270
Lead	46.2	22.6	18.3	400
Manganese	104	293	114	2,000
Mercury	ND	0.0476	ND	0.81
Nickel	4.28	14.0	6.24	140
Selenium	ND	2.29	1.18	36
Zinc	23.8	39.5	19.6	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J = estimated concentration

Table 2
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 4 (N 40°46'18.0156" W 73°13'44.5728")	Endpoint 5 (N 40°46'18.3792" W 73°13'45.7176")	Endpoint 6 (N 40°46'18.4584" W 73°13'46.3584")	Endpoint 7 (N 40°46'18.1272" W 73°13'46.686")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>					
Acetone	ND	ND	ND	ND	100,000
Methylene chloride	27	20	30	21	51,000
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>					
Anthracene	ND	ND	ND	ND	100,000
Benzo(a)anthracene	ND	43.7 J	ND	ND	1,000
Benzo(a)pyrene	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	1,000
Chrysene	ND	45.7 J	ND	ND	1,000
Fluroanthene	ND	67.6 J	ND	ND	100,000
Phenanthrene	ND	ND	ND	ND	100,000
Pyrene	ND	70.3 J	ND	ND	100,000
<i>Pesticides (in micrograms per kilogram)</i>					
4,4'-DDD	ND	ND	ND	ND	2,600
4,4'-DDE	6.72	ND	ND	6.07	1,800
4,4'-DDT	15.9	ND	ND	8.46	1,700
alpha-Chlordane	11.4	14.1	23.6	5.01	910
Dieldrin	5.87	5.41	7.50	5.35	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>					
Total PCBs	ND	ND	ND	ND	1
<i>Metals (in milligrams per kilogram)</i>					
Arsenic	1.95	3.47	2.44	1.30	16
Barium	13.8	15.4	13.9	15.4	350
Cadmium	ND	ND	ND	ND	2.5
Chromium, Trivalent	6.35	11.6	5.39	4.85	36
Copper	4.64	16.3	6.91	7.22	270
Lead	29.1	72.8	71.3	24.0	400
Manganese	52.4	67.7	54.8	76.6	2,000
Mercury	0.0590	0.0430	0.0379	0.0319	0.81
Nickel	3.07	6.94	3.22	3.04	140
Selenium	ND	ND	ND	ND	36
Zinc	22.0	38.1	30.5	22.4	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J = estimated concentration

Table 2 (continued)
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 8 (N 40°46'17.5692" W 73°13'45.2244")	Endpoint 9 (N 40°46'17.3964" W 73°13'44.49")	Endpoint 10 (N 40°46'16.554" W 73°13'44.2092")	Endpoint 11 (N 40°46'16.4496" W 73°13'45.1776")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>					
Acetone	15 E	9.4 J	6.6 J	12 E	100,000
Methylene chloride	28	20	18	21	51,000
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>					
Anthracene	ND	ND	ND	ND	100,000
Benzo(a)anthracene	ND	ND	ND	ND	1,000
Benzo(a)pyrene	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	1,000
Fluoranthene	ND	ND	ND	ND	100,000
Phenanthrene	ND	ND	ND	ND	100,000
Pyrene	ND	ND	ND	ND	100,000
<i>Pesticides (in micrograms per kilogram)</i>					
4,4'-DDD	10.4	12.4	6.36	ND	2,600
4,4'-DDE	15.4	13.8	13.1	ND	1,800
4,4'-DDT	32.7	20.6	18.6	2.68	1,700
alpha-Chlordane	12.1	11.4	12.4	2.21	910
Dieldrin	6.38	6.71	23.3	ND	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>					
Total PCBs	ND	ND	0.0977	ND	1
<i>Metals (in milligrams per kilogram)</i>					
Arsenic	2.45	3.00	3.42	2.33	16
Barium	22.7	25.6	56.7	11.2	350
Cadmium	0.440	0.484	0.513	ND	2.5
Chromium, Trivalent	10.0	10.2	12.1	6.70	36
Copper	11.3	13.0	26.7	5.12	270
Lead	96.6	71.9	262	23.9	400
Manganese	74.3	81.4	111	72.1	2,000
Mercury	0.0566	0.0713	0.200	ND	0.81
Nickel	6.83	12.6	6.35	2.78	140
Selenium	ND	ND	1.44	ND	36
Zinc	57.7	63.3	188	22.2	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J&E = estimated concentration

Table 2 (continued)
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 12 (N 40°46'16.0968" W 73°13'46.6356")	Endpoint 13 (N 40°46'16.3632" W 73°13'46.9452")	Endpoint 14 (N 40°46'15.7044" W 73°13'45.5124")	Endpoint 15 (N 40°46'15.618" W 73°13'44.3784")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>					
Acetone	12 J	ND	30 E	ND	100,000
Methylene chloride	20	18	21	18	51,000
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>					
Anthracene	ND	ND	ND	ND	100,000
Benzo(a)anthracene	ND	ND	ND	ND	1,000
Benzo(a)pyrene	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	1,000
Fluoranthene	58.4 J	ND	ND	ND	100,000
Phenanthrene	ND	ND	ND	ND	100,000
Pyrene	58.4 J	ND	ND	ND	100,000
<i>Pesticides (in micrograms per kilogram)</i>					
4,4'-DDD	13.0	ND	6.50	89.8	2,600
4,4'-DDE	50.0	ND	4.75	73.6	1,800
4,4'-DDT	44.6	2.78	6.58	14.1	1,700
alpha-Chlordane	5.40	ND	4.39	10.1	910
Dieldrin	16.9	ND	ND	ND	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>					
Total PCBs	ND	ND	ND	0.0576	1
<i>Metals (in milligrams per kilogram)</i>					
Arsenic	2.37	ND	1.13	3.17	16
Barium	30.5	23.7	15.0	18.3	350
Cadmium	0.405	ND	ND	0.324	2.5
Chromium, Trivalent	17.4	12.8	5.77	5.59	36
Copper	16.1	7.84	4.92	8.20	270
Lead	42.9	6.03	17.4	90.5	400
Manganese	169	132	82.5	45.8	2,000
Mercury	0.121	ND	ND	0.0502	0.81
Nickel	7.95	5.77	3.51	4.30	140
Selenium	2.72	ND	ND	ND	36
Zinc	39.4	16.8	18.7	159	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J&E = estimated concentration

Table 2 (continued)
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 16 (N 40°46'15.1536" W 73°13'44.5548")	Endpoint 17 (N 40°46'15.1752" W 73°13'45.2424")	Endpoint 18 (N 40°46'15.2112" W 73°13'46.3728")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>				
Acetone	ND	15 E	ND	100,000
Methylene chloride	16	24	21	51,000
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>				
Anthracene	ND	ND	53.4 J	100,000
Benzo(a)anthracene	ND	ND	259	1,000
Benzo(a)pyrene	ND	ND	113	1,000
Benzo(b)fluoranthene	ND	ND	149	1,000
Benzo(k)fluoranthene	ND	ND	182	1,000
Chrysene	ND	ND	482	1,000
Fluoroanthene	128	ND	1,680	100,000
Phenanthrene	65.5 J	ND	373	100,000
Pyrene	ND	ND	1,260	100,000
<i>Pesticides (in micrograms per kilogram)</i>				
4,4'-DDD	51.5	ND	4.05	2,600
4,4'-DDE	87.3	2.39	4.77	1,800
4,4'-DDT	30.1	4.13	12.1	1,700
alpha-Chlordane	12.6	3.69	4.09	910
Dieldrin	7.46	ND	ND	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>				
Total PCBs	0.110	0.0327	ND	1
<i>Metals (in milligrams per kilogram)</i>				
Arsenic	2.69	1.46	2.12	16
Barium	34.1	19.0	38.9	350
Cadmium	0.632	ND	ND	2.5
Chromium, Trivalent	9.92	7.33	8.80	36
Copper	15.7	8.01	11.3	270
Lead	70.1	19.0	38.9	400
Manganese	140	101	141	2,000
Mercury	0.0693	0.0435	0.0623	0.81
Nickel	6.76	4.56	5.39	140
Selenium	1.16	1.42	ND	36
Zinc	94.5	22.8	34.6	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J&E = estimated concentration

Table 3
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 19 (N 40°46'15.222" W 73°13'46.56")	Endpoint 20 (N 40°46'15.8232" W 73°13'46.8444")	Endpoint 21 (N 40°46'10.1784" W 73°13'40.5552")	Endpoint 22 (N 40°46'9.9156" W 73°13'41.4552")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>					
Methylene chloride	20	29	30	44	51,000
Tetrachloroethylene	ND	ND	ND	ND	5,500
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>					
Acenaphthene	166	ND	ND	ND	100,000
Acenaphthylene	71.1 J	ND	ND	ND	100,000
Anthracene	365	76.9 J	ND	ND	100,000
Benzo(a)anthracene	1,030	279	62.5 J	68.4 J	1,000
Benzo(a)pyrene	651	180	51.7 J	59.6 J	1,000
Benzo(b)fluoranthene	748	215	59.1 J	62.3 J	1,000
Benzo(g,h,i)perylene	310	94.5	ND	ND	100,000
Benzo(k)fluoranthene	806	236	61.8 J	77.2 J	1,000
Chrysene	985	280	66.5 J	72.4 J	1,000
Dibenzo(a,h)anthracene	210	ND	ND	ND	330
Dibenzofuran	97.7	ND	ND	ND	14,000
Fluoranthene	1,760	540	121	133	100,000
Fluorene	184	ND	ND	ND	100,000
Indeno(1,2,3-cd)pyrene	353	79.6 J	ND	ND	500
Naphthalene	114	ND	ND	ND	100,000
Phenanthrene	1,510	355	69.2 J	67.0 J	100,000
Pyrene	1,550	441	98.0	111	100,000
<i>Pesticides (in micrograms per kilogram)</i>					
4,4'-DDE	11.1	6.17	6.22	3.75	1,800
4,4'-DDT	39.9	24.3	13.9	29.8	1,700
alpha-Chlordane	13.0	7.36	4.50	4.08	910
Dieldrin	ND	2.96	2.24	ND	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>					
Total PCBs	0.0409	ND	ND	ND	1
<i>Metals (in milligrams per kilogram)</i>					
Arsenic	4.14	3.21	2.14	2.29	16
Barium	233	95.5	37.5	33.3	350
Chromium, Trivalent	20.5	11.4	7.99	7.70	36
Copper	89.0	29.1	12.6	7.23	270
Lead	321	130	51.9	36.6	400
Manganese	247	132	86.4	70.3	2,000
Mercury	0.484	0.177	0.0645	0.0598	0.81
Nickel	18.7	9.60	7.33	6.08	140
Selenium	1.90	1.51	ND	ND	36
Zinc	229	110	44.5	30.9	2,200

Notes:

Only detected compounds and metals are summarized in this table.

Bold value indicates an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Part 375 Residential Use Soil Cleanup Objectives.

ND = not detected

J = estimated concentration

Table 3 (continued)
Confirmatory Soil Endpoint Sample Results Summary
Roberto Clemente Park
400 Broadway, Brentwood, New York

Sample Location (coordinates)	Endpoint 23 (N 40°46'9.3864" W 73°13'40.8144")	Endpoint 24 (N 40°46'9.3108" W 73°13'41.4192")	Endpoint 25 (N 40°46'10.038" W 73°13'42.1608")	NYSDEC Part 375 Residential Use Soil Cleanup Objectives
<i>Volatile Organic Compounds (in micrograms per kilogram)</i>				
Methylene chloride	38	28	35	51,000
Tetrachloroethylene	5.8 J	ND	ND	5,500
<i>Semi-Volatile Organic Compounds (in micrograms per kilogram)</i>				
Acenaphthene	ND	ND	ND	100,000
Acenaphthylene	ND	ND	ND	100,000
Anthracene	ND	ND	ND	100,000
Benzo(a)anthracene	ND	ND	75.5 J	1,000
Benzo(a)pyrene	ND	ND	61.3 J	1,000
Benzo(b)fluoranthene	ND	ND	60.6 J	1,000
Benzo(g,h,i)perylene	ND	ND	ND	100,000
Benzo(k)fluoranthene	ND	ND	71.4 J	1,000
Chrysene	ND	ND	80.2 J	1,000
Dibenzo(a,h)anthracene	ND	ND	ND	330
Dibenzofuran	ND	ND	ND	14,000
Fluoroanthene	ND	ND	148	100,000
Fluorene	ND	ND	ND	100,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	500
Naphthalene	ND	ND	ND	100,000
Phenanthrene	ND	ND	74.1 J	100,000
Pyrene	ND	ND	120	100,000
<i>Pesticides (in micrograms per kilogram)</i>				
4,4'-DDE	ND	3.57	4.20	1,800
4,4'-DDT	2.48	2.55	17.5	1,700
alpha-Chlordane	2.14	ND	7.51	910
Dieldrin	ND	ND	ND	39
<i>Polychlorinated Biphenyls (in milligrams per kilogram)</i>				
Total PCBs	ND	ND	ND	1
<i>Metals (in milligrams per kilogram)</i>				
Arsenic	2.31	3.41	3.10	16
Barium	15.9	23.7	62.0	350
Chromium, Trivalent	7.86	10.7	9.62	36
Copper	4.83	6.88	10.9	270
Lead	17.8	21.1	65.9	400
Manganese	72.8	71.3	98.6	2,000
Mercury	ND	0.0542	0.0710	0.81
Nickel	4.92	5.86	7.93	140
Selenium	ND	1.21	ND	36
Zinc	18.7	25.2	47.5	2,200

Notes:

Only detected compounds and metals are summarized in this table.

ND = not detected

J = estimated concentration