



**DRAFT REMEDIAL ACTION WORK PLAN  
129 HOLDEN STREET  
BUFFALO, NEW YORK  
BROWNFIELD CLEANUP PROGRAM  
SITE NO. C915261**

**Prepared For:**

New York State Department of Environmental Conservation  
Region 9  
Buffalo, New York

**Prepared By:**

GZA GeoEnvironmental of New York  
Buffalo, New York

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**CERTIFICATION**

I, Bart A. Klettke, P.E., certify that I am currently a NYS registered professional engineer and that this Remedial Action (RA) Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



A handwritten signature in blue ink that reads 'Bart A. Klettke'.

Bart A. Klettke, P.E.

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**Registration State:** New York



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**TABLE OF CONTENTS**



1.0 INTRODUCTION .....	1
1.1 PREVIOUS INVESTIGATIONS .....	2
1.2 PURPOSE AND SCOPE.....	4
1.3 PROJECT ORGANIZATION AND RESPONSIBILITIES.....	6
2.0 TECHNICAL APPROACH.....	6
2.1 PRE-MOBILIZATION TASKS .....	6
2.1.1 Public Notification.....	6
2.1.2 Pre-Remedial Action Meeting.....	7
2.1.3 Progress Reports/Meetings.....	7
2.1.4 Health and Safety Plan Development .....	7
2.1.5 Radioactive Screen of Slag Material.....	8
2.2 CONSTRUCTION FACILITIES AND ENGINEERING CONTROLS.....	8
2.2.1 Construction Facilities .....	8
2.2.2 Dust Suppression .....	8
2.2.3 Odor Control.....	9
2.2.4 Stormwater Management .....	10
2.3 REMEDIAL ACTION ACTIVITIES.....	11
2.3.1 NYSDEC Oversight & Approvals .....	11
2.3.2 Asphalt/Sub-base Removal and Staging.....	11
2.3.3 SCOC Soil Excavation Activities.....	11
2.3.4 SCOC Post-Excavation Confirmatory Sampling.....	13
2.3.5 Soil Relocation and Clean Soil Cover System Installation.....	13
2.3.6 Groundwater Management .....	15
2.3.7 Off-Site Disposal .....	15
2.3.8 Monitoring Well Decommissioning.....	16
3.0 COMMUNITY AIR MONITORING.....	16
4.0 DOCUMENTATION AND REPORTING.....	17
4.1 PROGRESS REPORTS.....	17
4.2 CONSTRUCTION COMPLETION REPORT .....	17
4.3 REMEDIAL ACTION SCHEDULE .....	18

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129 HOLDEN STREET  
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**TABLE OF CONTENTS (CONTINUED)**



**TABLES**

TABLE 1	SUMMARY STATISTICAL ANALYSIS AND AREAS FOR EXCAVATION AND OFF-SITE DISPOSAL
TABLE 2	SUMMARY OF THE REMEDIAL ACTION AREAS

**FIGURES**

FIGURE 1	LOCUS PLAN
FIGURE 2	SITE PLAN
FIGURE 3	SCOC EXCAVATION AREAS AND AOCs TO BE ADDRESSED BY REMEDIAL ACTION
FIGURE 4	REMEDIAL STRATEGY FIGURE
FIGURE 5	CURRENT SITE GROUND COVER

**APPENDICES**

APPENDIX A	TEST PIT LOGS
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## 1.0 INTRODUCTION

This work plan presents the proposed scope of work for completion of remedial action at the 129 Holden Street Brownfield Cleanup Program (BCP) Site (Site), located in the City of Buffalo, Erie County, New York (see Figure 1).



Highland Village Park, LLC (Highland) elected to pursue cleanup and redevelopment of the Site under the New York State BCP. The Site was accepted into the BCP with Highland as a volunteer and entered into a Brownfield Cleanup Agreement (BCA) with New York State Department of Environmental Conservation (NYSDEC) on February 9, 2012 (BCP Site No. C915261). The BCA was amended on October 31, 2013, when NYSDEC approved a BCA amendment application, dated August 26, 2013, to change the ownership name for the Site from Strickler Development Group, LLC to Highland Village Park, LLC. Although the name of the corporation changed, the ownership of the membership interests, the officers, and directors did not change.

The Site consists of approximately 27.09-acres of land and previously contained five (5) vacant commercial buildings (see Figure 2). The Site is situated in a commercially-zoned area of the City of Buffalo. Surrounding adjacent areas are zoned for residential and public service use. Four of the five Site buildings were demolished in 2012 as part of Site redevelopment activities (see Figure 2). The only remaining building is the small, single story building along Holden Street, between Wade and Chalmers Avenues.

The proposed redevelopment plan includes construction of residential living units/apartments and development of the Highland Village Park community. The critical path item toward the start of site redevelopment is the completion of remedial action, which needs to be completed by the winter of 2014. Accordingly, remedial contractor mobilization and remedial construction work must begin in the late summer 2014.

The remedial action for this Site will involve a Track 4 restricted residential cleanup. This Remedial Action Work Plan has been prepared to address on-site soil/fill areas of concern (AOCs) identified during the Remedial Investigation (RI). The Alternative Analysis (AA) identified the following remedial alternative to be implemented to achieve a NYSDEC BCP Track 4 Restricted Residential cleanup:

Excavation and Off-Site Disposal of Significant Contaminants of Concern (SCOC) and Impacted Soil Relocation/Clean Soil Cover System Installation with Site Management Plan Implementation.



This remedial alternative will entail:

- the excavation and proper off-site disposal of soil contamination identified in exceedance of the Potential Excavation Limit Threshold (PELT, discussed later in Section 1.1);
- Capping of the remaining impacted soil (below the PELT but above the Restricted Residential Soil Cleanup Objectives (RRSCOs)) with a minimum of a 2-foot thick clean soil cover system; and
- Development and implementation of a Site Management Plan (SMP).

GZA GeoEnvironmental of New York (GZA) will provide oversight of the remedial action, on behalf of Highland in general accordance with NYSDEC DER-10<sup>1</sup>. Highland's general contractor, LPCiminelli Construction (LPC), will be responsible for implementation and management of the remedial actions and subcontractors involved.

## 1.1 PREVIOUS INVESTIGATIONS

### *Phase I Environmental Site Assessment – August 2011*

GZA performed a Phase I Environmental Site Assessment <sup>2</sup> (Phase I ESA) at the Site. Pertinent findings of this report regarding the subject property are as follows:

- The Site was first utilized in at least the early 1900s by Buffalo Cement as a quarry, until the mid-1950s. The Site was first developed as the Central Park Plaza in 1958 with the construction of three Site buildings. An additional building was constructed on the southern portion of the Site in 1967 and the fifth building on the western portion of the Site in 1989. The Site operated as a shopping plaza from 1958 until the last of the tenants vacated the Site in July 2011.
- Historic Site tenants of concern included a photo mart, laundromats, an automatic car wash, a dry cleaner, a chop shop and auto service shop.
- The Site was listed twice on the NY Spills database.
- A maintenance person with Site responsibilities informed GZA that the current owner had been dumping fill materials in the area east of Building 2 at the Site, and was unaware of the origin of the fill materials brought on-Site.

Based on the information obtained as part of the assessment, historic site usage represented recognized environmental concerns and additional investigations were recommended.

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<sup>1</sup> New York State Department of Environmental Conservation. DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010.

<sup>2</sup> "Phase I Environmental Site Assessment, Central Park Plaza, 129 Holden Street, Buffalo, New York" – prepared by GZA GeoEnvironmental of New York for LP Ciminelli Construction, dated August 2011.

Phase II Environmental Site Assessment – October 2011



GZA performed a Phase II Environmental Site Assessment<sup>3</sup> (Phase II ESA) at the Site. The results of the Phase II ESA identified VOC, SVOC, PCBs and metals contamination in the fill soil at the Site exceeding Part 375 USCOs and RSCOs. The petroleum related VOCs detected underneath a building were characteristic of a petroleum release. A petroleum release was reported to NYSDEC on October 28, 2011 and Spill No. 1109473 was assigned based on the analytical results.

Remedial Investigation/Alternative Analysis

The RI identified a significant amount of fill materials were placed after the quarry operations ceased and prior to the construction of Central Park Plaza in the early 1950s. The RI did not identify specific sources of the various semi-volatile organic compounds (SVOCs) and metals contamination that were identified. No volatile organic compounds (VOCs), polychlorinated biphenyl (PCBs), herbicides or pesticides were detected in the soil samples analyzed as part of the RI above their respective NYSDEC Part 375 RRSCOs. The results of the groundwater sampling did not identify specific contaminants of concern or that a groundwater problem exists at the Site. No groundwater remediation is required as part of the remedial action.

Thirteen AOCs were identified during the RI where contamination (SVOCs and metals) was identified in exceedance of their RRSCOs. Within four of the AOCs (Area 3, Area 4, Area 5, Area 11), five hotspots (TP-10, TP-70, TP-74, TP-75, and TP-77) were identified with soil contamination concentrations above the derived PELT, which was developed by statistical analysis, as explained below.

A statistical analysis (U.S. EPA statistical software ProUCL Version 4.1.01 software) of the RI data was completed on five (5) metal analytes (arsenic, chromium, copper, nickel and zinc) and five (5) semi-volatile organic compounds (Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Dibenz (a,h) anthracene, Indeno (1,2,3-cd) pyrene). These 10 analytes/compounds had at least one exceedance of the Part 375 Industrial Soil Cleanup Objectives (ISCOs) and are considered the Significant Compounds of Concern (SCOC).

The statistical analysis identified statistical outliers and statistical means for each of the 10 SCOC based on the 95% upper confidence levels (95%UCL). To determine what would be considered significantly impacted material and require off-site disposal, the PELT was determined by using the higher of the concentrations of the statistical mean plus 2 standard deviations or Part 375 ISCO for each of the SCOC (see Table 1).

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<sup>3</sup> "Phase II Environmental Site Assessment, Central Park Plaza 129 Holden Street Buffalo, New York" – prepared by GZA GeoEnvironmental of New York for Harter Secrest & Emery LLP, dated November 2011.



If the analytical result indicated the presence of one (1) or more of the 10 SCOCs at a concentrations above the PELT (see last column of Table 1) it was evaluated for possible excavation and off-site disposal. If the soil/fill unit with the PELT(s) exceedance was present in uppermost 4 feet of soil at the Site, it was identified for excavation and off-site disposal.

Table 1 identifies the locations and sample depths of analytical results that exceeded the PELT concentration for each SCOC. The analytical sample depths in conjunction with the test pit and monitoring well logs were reviewed to determine if the exceedance occurred within the upper 4 feet or was detected within material that is present at that location within the upper 4 feet. [Example: arsenic was detected in sample TP-77, 4 to 6 feet bgs which is above the PELT. Although the depth of the sample is below 4 feet, the material from which the samples were collected at that location was present from 3 feet bgs to 6 feet bgs. Therefore, the material present in the vicinity of TP-77 will be removed for disposal off-site.]

Figure 3 identifies in red the five (5) locations of the significantly impacted material containing the SCOC to be excavated for off-site disposal. Table 2 identifies the estimated volume associated with the SCOC impacted soil to be excavated for off-site disposal and the estimated volume of impacted soil above the RRSCO and below the PELT/ISCOs that will be required to be relocated and/or capped with a clean soil cover system. Though the SCOC impacted materials to be removed represent “hotspots”, they are not sources, as there is no groundwater contamination associated with the Site, the SCOC are not mobile under typical subsurface conditions at the Site, and they do not create a vapor inhalation concern.

We note that the PELT is also the concentration to be used, per analyte/compound, to assess the extent and/or limit of contamination to be excavated for off-site disposal. The PELT will be the concentrations that the confirmatory soil samples results from the excavations will be compared to for the SCOC.

Therefore, after the excavation and off-site disposal of the SCOC soil contamination, the remaining impacted soil will be relocated on Site and/or covered in place with a minimum of a 2 foot clean soil cover system.

## 1.2 PURPOSE AND SCOPE

As discussed in Section 1.0, the proposed redevelopment plan consists of the construction of a restricted residential community, Highland Park Village. In order for the residential development to occur, remedial action must be completed to remove the SCOC present and address the remaining soil contamination associated with the 13 Areas of Concern (AOC) located at the Site (see Figure 3).

The purpose of the remedial action is to achieve a NYSDEC Restricted Residential Track 4 Cleanup and achieve the remedial action objectives (RAOs). The RAOs for the Site are as follows.



- Address soils with contaminants above the RRSCOs in the upper 2 feet, as required by a restricted residential Track 4 cleanup, to protect public health and the environment.
- Prevent ingestion or direct contact with soil contaminants exceeding the RRSCOs by developing a soil cover system.
- Implement and maintain engineering and institutional controls so that the Site is used in a manner consistent with the future anticipated use (restricted residential).

The following remedial actions are proposed to address the 13 identified areas of concern and to prepare the Site for redevelopment.

#### **Excavation and Off-site Disposal:**

As shown on Figure 3 and summarized in Table 2, 13 remedial areas of concern (AOCs) have been identified for soil/fill removal or cover. Within four of the 13 AOCs (Area 3, Area 4, Area 5, Area 11), five hotspots (TP-10, TP-70, TP-74, TP-75 and TP-77) were identified where soil contamination concentrations were above the derived PELT and will require excavation and off-site disposal. The purpose of removing and disposing of the significantly impacted material off-site would be to:

- address “hot spots” of SCOC contaminant material that contains elevated levels of SVOCs and metals above the derived PELT; and
- further reduce the potential for worker exposure to these soils during Site redevelopment and/or maintenance.

#### **Soil Relocation and Clean Soil Cover System Installation:**

As shown on Figure 4, the Site has been divided into a North Remedial Area and a South Remedial Area. In the North Remedial Area final surface grades will be elevated prior to redevelopment and in the South Remedial Area final surface grades will be lowered.

After the asphalt and sub-base are removed (approximately 1 foot), a two foot soil cut will be completed in the South Remedial Area to remove the soil present in the upper 2 feet (with the exception of those located in MOB Soil stockpile area and proposed UB Medical Site stockpile area, as shown on Figure 4) to the North Remedial Area. The soil will be placed in areas of the North Remedial Area that will require current grades to be elevated and to backfill a former basement located in the northwest portion of the Site (see Figure 4). The entire Site will then be covered with a minimum of 2 feet of clean soil. The cover system will consist of a high visibility demarcation layer that will be placed and then covered with a minimum of 2 feet of soil that meets the NYSDEC Part 375 6.8(b) RRSCOs.

These components of the remedial action will be discussed in more detail in Section 2.3.



This Remedial Action Work Plan has been prepared in accordance with Section 5.3(b) of NYSDEC's May 2010 DER-10 Technical Guidance for Site Investigation and Remediation and includes the following.

- A description of the remedial actions to be undertaken as part of the remedial action
- The location and description of temporary construction facilities.
- Dust, storm water, and erosion control measures required for minimizing potential releases of soil/fill outside the work zone during construction.
- Health, safety, and community air monitoring procedures.
- Equipment decontamination requirements.
- A summary of drawings and information to be provided as part of the Construction Completion Report (CCR).
- Project documentation requirements and anticipated construction schedule.
- A description of institutional controls, engineering controls, and Site Management Plan requirements that will be implemented

### 1.3 PROJECT ORGANIZATION AND RESPONSIBILITIES

GZA will provide oversight of the SCOC excavations and soil relocation/clean soil cover installation activities on behalf of Highland utilizing qualified and experienced professionals. LPC and their subcontractors will be responsible for implementing the remedial action and constructing the clean soil cover system.

GZA will provide and implement a Community Air Monitoring Plan (CAMP) along with general environmental oversight during intrusive remedial activities performed at the Site. The NYSDEC Division of Environmental Remediation will monitor the remedial actions to verify that the work is performed in general accordance with the approved Remedial Action Work Plan. Post-excavation confirmation sampling will be performed by experienced GZA personnel in consultation with NYSDEC personnel prior to backfilling activities. It is understood that NYSDEC reserves the right to collect split samples of soil/fill during remedial action activities. A minimum of 3-days' notice will be provided to NYSDEC prior to excavation, confirmation sampling, and project related meetings.

## **2.0 TECHNICAL APPROACH**

### 2.1 PRE-MOBILIZATION TASKS

#### 2.1.1 Public Notification

A Citizen Participation Plan<sup>4</sup> (CPP) has been prepared for the Site and upon approval of this Remedial Action Work Plan, the Construction Notice fact sheet containing information about the remedial action will be developed by the NYSDEC Region 9 Project Manager and provided to

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<sup>4</sup> "Citizen Participation Plan for 129 Holden Street Site, Buffalo, Erie County, New York, Site Number: C915261" dated March 2012.



Highland for review and comment. After addressing any comments, the fact sheet will be finalized and transmitted by NYSDEC to those individuals on the most recent CPP contact list, including property owners and residents proximate to the Site, environmental groups, local political representatives, and interested regulatory agencies. The intent of this effort is to seek community cooperation, minimize disruption of nearby neighborhood residential and commercial activities, and facilitate a safe and secure work site. A copy of the final Remedial Action Work Plan will be made available for public review at the NYSDEC Region 9 office and the designated document repository, East Delavan Branch Library of the Erie County Public Library.

### 2.1.2 Pre-Remedial Action Meeting

A pre-remedial action meeting will be held with key representatives of the Project Team (GZA and LPCiminelli Construction) before the SCOC soil/fill excavation activities work begins. The NYSDEC Project Manager and New York State Department of Health (NYSDOH) representative will also be notified and invited to attend. Agenda items will include:

- Construction schedule/work hours
- Work sequencing
- Designation of responsibilities, contact personnel, and phone numbers
- Project documentation requirements
- Health and safety requirements
- Temporary controls (dust suppression, storm water management)
- Site security

Meeting minutes will be prepared for distribution to attendees.

### 2.1.3 Progress Reports/Meetings

Throughout the remedial action activities, project progress will be documented in the monthly progress reports that are currently being completed and submitted to NYSDEC on a monthly basis as part of the BCP requirements.

If formal remedial action meetings are conducted, NYSDEC and NYSDOH will be invited to attend those meetings.

### 2.1.4 Health and Safety Plan Development

The March 2012 Health and Safety Plan (HASP), prepared for the RI in accordance with the requirements of 40 CFR 300.150 of the NCP and 29 CFR 1910.120, will be revised as necessary for the remedial action activities. LPCiminelli Construction will be responsible for Site control and for the health and



safety of its authorized Site workers. All subcontractors and other parties involved in on-site construction will be required to develop a HASP as, or more, stringent than GZA's HASP.

The HASP will be subject to revision, as necessary, based on new information that is discovered during the remedial action.

GZA will also be responsible for the performance of community air monitoring during intrusive remedial action activities involving subgrade disturbance as discussed in Section 3.0 of this Work Plan.

#### 2.1.5 Radioactive Screen of Slag Material

NYSDEC has requested that the slag material encountered at the Site be screened for radioactivity. GZA will use a Ludlum Measurements, Inc. 2241-2 survey meter, or equivalent, with a digital ratemeter/scaler capable of screening for alpha, beta, and gamma radiation.

The meter is capable of displaying the measurements in units of roentgen per hour (R/hr), Sievert per hour (Sv/h), counts per minute (cpm), or counts per second (cps) with multipliers of micro ( $\mu$ ) or milli (m) for R/hr and Sv/h and kilo (k) for cpm or cps.

During the remedial investigation, GZA collected and retained representative soil and slag samples from the test pit explorations, which are currently located in a storage facility. GZA will select up to 10 of the archived slag samples for radiation screening. The screening will be performed in the presence of a NYSDEC representative.

The results of the slag sample screening will be compared to Site background levels at four publicly assessable off-site locations (north, south, east and west) in the vicinity of the Site. These background locations will be selected and screened by GZA accompanied by a NYSDEC representative.

## 2.2 CONSTRUCTION FACILITIES AND ENGINEERING CONTROLS

### 2.2.1 Construction Facilities

LPC will utilize the small single-story building that remains on the Site as the field office during the remedial action activities. GZA does not require construction facilities, but may use space within the field office, if available.

### 2.2.2 Dust Suppression

Dust suppression will be an integral component of the soil/fill excavation and clean soil cover system installation activities. During excavation and clean soil cover system installation, water will be sprayed across the surface of the work area, as necessary, to mitigate airborne dust formation and migration; and for



conformance with community air monitoring thresholds. Other dust suppression techniques that may be used to supplement the water spray include:

- Applying water on haul roads.
- Hauling materials in properly tarped containers or vehicles.
- Restricting vehicle speeds on-site.

All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum and adhere to particulate emissions limits identified in the Community Air Monitoring Plan (Section 3.0).

### 2.2.3 Odor Control

The odor control plan is capable of controlling emissions of nuisance odors off-Site. Specific odor control methods to be used on a routine basis will include minimizing the generation of vapors and/or odors.

If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be stopped and the source of odors will be identified and corrected. Work will not resume until nuisance odors have been abated. NYSDEC will be notified of odor events and other reasonable complaints about the project. Implementation of odor controls, including stoppage of work, is the responsibility of LPC. Odor control measures implemented will be provided to NYSDEC in the monthly progress reports.

Necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (a) direct load-out of soils into trucks for off-site disposal; (b) use of chemical odorants in spray or misting systems; and, (c) the placement of monitors to assess the presence of odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

## 2.2.4 Stormwater Management

A formal project-specific Construction Stormwater Pollution Prevention Plan (SWPPP) will be developed as construction projects greater than 1 acre are subject to the requirements of NYSDEC Division of Water guidelines and regulations. The following general erosion and sediment control practices shall be used:



- Silt fencing or straw bales will be installed around the entire perimeter of the construction, and inspected a minimum of once each week and after every storm event having 0.5 inches of rain or greater. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs shall be made as soon as practical.
- Accumulated sediments will be removed as required to keep the barrier and straw bale check functional.
- All undercutting or erosion of the silt fence toe anchor shall be repaired as soon as practical with appropriate backfill materials.
- Manufacturer's recommendations shall be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

The hard surface covers of the Site will be removed and existing stormwater structures will be covered and/or plugged prior to starting remedial action. The Site is vacant and precipitation would be expected to temporarily accumulate prior to infiltration. Therefore, using best management practices at the Site perimeter and preventing infiltration into storm water structures, stormwater runoff is not expected to pose a significant soil particulate or contaminant transport pathway during remedial action activities.

During the soil/fill removal work, LPC will undertake specific measures for proper management of stormwater and to preclude migration of contaminants to surface waters or other areas of the Site. These will include:

- Direct loading of trucks where feasible to avoid staging of impacted soil/fill.
- Use of polyethylene sheeting for staging and covering of impacted soil/fill as necessary.
- Grading of excavations and soil cuts to prevent storm water from migrating off-site.

## 2.3 REMEDIAL ACTION ACTIVITIES

### 2.3.1 NYSDEC Oversight & Approvals

NYSDEC will be notified at least three business days in advance of planned remedial action activity. Excavation, post-excavation confirmatory sampling, backfilling and clean soil cover system installation activities will be performed in consultation with a NYSDEC representative. Confirmation sample analytical results will be provided to NYSDEC for review upon receipt from the laboratory. It is understood that NYSDEC may perform split sampling of soil and/or fill material during the remedial action.

Additional source(s) of soil for the project other than that previously approved from the MOB and UB Medical Sites will need to be identified and which must meet the requirements of Part 375-6.8(b) for reuse at a restricted residential site. NYSDEC approval shall be obtained prior to bringing additional material to the Site to be used as backfill or soil for the cover system.

### 2.3.2 Asphalt/Sub-base Removal and Staging

Prior to subsurface work, the underground utilities locating service will be contacted to locate and mark underground utilities in the work vicinity. If active utilities are present, care will be taken to maintain appropriate set-backs or stabilize the utilities as necessary to allow soil/fill removal to proceed.

Figure 5 identifies the Site ground surface cover. It is estimated that approximately 736,000 square feet of asphalt is accessible to be removed and staged for potential reuse.

The gravel sub-base present beneath the asphalt will also be removed and staged for reuse. The potential reuse of these materials includes sub-base and fill for future roadways, driveways and parking lot construction as part of the redevelopment. These materials will be used above the clean soil cover system.

### 2.3.3 SCOC Soil Excavation Activities

The five locations where SCOCs are present above their respective PELT will be excavated, staged, characterized and properly disposed of at a permitted landfill facility (see Figure 3 or 4). The excavation activities for these five locations will begin at the test location where the SCOCs were initially identified (TP-10, TP-70, TP-74, TP-75 and TP-77, see Table 1). As part of the RI activities, each test pit was surveyed with a latitude and longitude. The licensed surveyor (McIntosh & McIntosh) will be asked to relocate the five test pits.

Excavation activities will consist of removing the soil/fill materials previously identified during the RI as containing the SCOCs above the derived PELT. Test pit





logs for TP-10, TP-70, TP-74, TP-75 and TP-77, as well as the additional test pits completed in these areas (TP-10A and B, TP-70A and B, TP-74A and B, TP-75A and B and TP-77A and B) are included in Appendix A. Excavation activities will progress horizontally and vertically away from the test pit locations identified by the surveyor. The soil/fill materials containing the SCOCs will be excavated to a depth of 4 feet below ground surface, at which point a confirmatory soil sample (as discussed in Section 2.3.4) will be collected. If the results of the bottom of excavation confirmatory soil sample meet their respective PELT concentrations, the excavation activities will not extend deeper. If the results of the bottom of excavation confirmatory soil sample do not meet their respective PELT concentrations, the excavation activities will continue below 4 feet bgs and additional bottom of excavation samples will be collected once the depth of excavation is reached.

Sidewall confirmatory soil samples will also be collected once it appears that the hotspot soil material has been removed (as discussed in Section 2.3.4). If the results of the sidewall excavation confirmatory soil sample meet their respective PELT concentrations, the excavation activities will not extend horizontally in the area of the acceptable confirmatory result. If the results of the sidewall excavation confirmatory soil sample(s) exceed their respective PELT concentrations, the excavation activities will continue horizontally and additional sidewall excavation samples will be collected once the excavation limits have been reached.

We note that during the soil excavation activities to remove SCOC contaminated materials above the PELT, if grossly contaminated soils are encountered (oily product), these soils will be stockpiled separately and characterized for off-site disposal. If suspect soils/materials (i.e., black sands) are encountered, NYSDEC will be notified and additional soil samples will be collected prior to backfilling the excavation with clean soil.

Final excavation horizontal limits will be surveyed prior to backfilling the excavation and the average excavation depths will be manually measured in the field. Horizontal limits and locations of final remedial excavations will be presented on the figure in the Construction Completion Report (CCR).

Care will be taken to minimize dust/odor formation during excavation, loading and relocation activities. The excavation equipment will have sufficient boom length to allow for placement of soil/fill directly into truck beds if ground surface conditions are conducive to truck traffic (i.e. dry and firm).

SCOC soils excavated from the five locations will be taken by dump truck to the SCOC temporary soil staging area (see Figure 4). The staging area will consist of a constructed berm area (i.e., soil and/or straw bales) that is properly sloped to avoid surface water runoff, and lined with polyethylene sheeting. At the end of each work day the soil present within the SCOC temporary soil staging area will be covered with polyethylene sheeting.



The backfilling of the SCOC excavations will be completed with acceptable soil that meets the requirements of Part 375-6.8(b) for reuse at a restricted residential site.

#### 2.3.4 SCOC Post-Excavation Confirmatory Sampling

Confirmatory samples will be collected from the sidewalls and bottom of the SCOC excavations. Sidewall post-excavation samples will be collected every 30 to 40 linear feet. Bottom post-excavation samples will be collected every 900 square feet of exposed bottom of excavation. If the excavation is not completed to a depth of 4 feet bgs, the bottom of excavation confirmatory samples will be collected from the soil remaining after the SCOC impacted soil/material is removed. If the excavation reached 4 feet bgs, bottom confirmatory samples will be collected at 4 feet bgs.

If the results of the confirmatory samples are below the PELT for the SCOC but above the RRSCOs, the excavation activities for off-site disposal will cease and the remaining soil above the RRSCOs associated with the area will be addressed by capping with a clean soil cover system, as discussed in Section 2.3.5. If confirmatory sample results exceed the PELT, additional soil will be removed and subsequent bottom confirmatory sample(s) collected.

SCOC post-excavation sidewall and bottom confirmatory soil samples will be analyzed for SVOC (Base-Neutrals) and TAL metals. Excavation areas will be barricaded to keep personnel away from the excavation prior to backfilling while awaiting the confirmatory analytical results.

#### 2.3.5 Soil Relocation and Clean Soil Cover System Installation

As shown on Figure 4, the Site has been divided into a North Remedial Area and a South Remedial Area. In the North Remedial Area surface grades will be elevated prior to redevelopment and in the South Remedial Area surface grades will be lowered. Highland is proposing the following remedial/redevelopment action strategy to address the remaining impacted soil present at the Site after the SCOC soil excavations are completed and address redevelopment needs.

After the asphalt and sub-base are removed (approximately 1 foot), a two foot soil cut (1 to 3 feet below current grade) will be completed in the South Remedial Area to move the soil (with the exception of the those located in MOB Soil stockpile area and proposed UB Medical Site stockpile area, as shown on Figure 4) to the North Remedial Area. It is estimated that the two foot cut in the South Remedial Area will generate approximately 30,000 cubic yards of soil. This cut would include relocating impacted soil, above the RRSCOs, present in the upper 3 feet associated with Area 3, Area 7, and Area 13 (slag material).



The 30,000 cubic yards of soil generated from the 2 foot cut in the South Remedial Area will be relocated into the North Remedial Area. The soil will be placed in areas of the North Remedial Area that will require current grades to be increase and be used to backfill a former basement located in the northwest portion of the Site (see Figure 4). The basement is approximately 150 feet by 50 feet and 10 feet deep. It will be backfilled to a depth of 3 feet bgs. Acceptable clean soil will be used to cover the soil from the South Remedial Area and finish raising grades within the basement area to existing ground surface. This would cover the impacted soil with a clean soil cover of at least 3 feet. The basement can accommodate approximately 1,940 cubic yards of soil. The remaining soil from the South Remedial Area will be used to elevate grades in select locations of the North Remedial Area.

The entire North Remedial Area will be capped with a 2 foot clean soil cover system. This cover system will address Remedial Areas 4, 5, 6, 10, 11, 12 and 13. The cover system will include a high visibility demarcation layer to be placed over the soil before being covered with 2 feet of acceptable soil that meets the Part 375 6.8(b) RRSCOs.

The area of the 2 foot soil cut in the South Remedial Area will be covered with a 2 foot thick clean soil cover system and would address soils present within Area 8 and remaining in Areas 3, 7 and 13. The clean soil cover system will include a high visibility demarcation layer and a minimum of 2 feet of soil which meets the Part 375 6.8(b) RRSCOs.

The clean soil cover system will be developed using the soil located in the two soil stockpile areas present at the Site, MOB Soil stockpile area and the UB Medical Site stockpile area (see Figure 4). The MOB Soil stockpile area consists of approximately 30,000 cubic yards of soil that was brought to the Site between February 2013 and October 2013 from another BCP Site (C#915260, Former Mobil Service Station 99-MST, located at 1001 Main Street in Buffalo, New York). Soil from the MOB site was sampled and characterized in accordance with a NYSDEC approved work plan. Approval to reuse the native sandy soils from the MOB site at the 129 Holden Street Site was granted by NYSDEC in two letters dated February 7, 2013 and March 21, 2013. Unlike the stockpile from the UB Medical Site, an orange mesh demarcation layer was not placed on the ground prior to delivery of clean soil from the MOB. This area without orange demarcation layer will be clearly highlighted on a figure within the final Excavation Work Plan.

The UB Medical Site stockpile area is an area to stage and stockpile native soils to be excavated as part of site development from the University of Buffalo Medicine & Biomedical Sciences Building located at the corners of Main Street, High Street and Washington Street, in Buffalo, New York. A preliminary data report and secondary report for the UB Medical Site were submitted to NYSDEC. A response from NYSDEC dated June 6, 2014 indicated that native soil up to 20 feet in depth from ground surface could be reused at 129 Holden Street Site. Therefore, it is being anticipated that the deeper (from 20 to 32 feet bgs) native soils will also be



formally approved by NYSDEC for reuse at the 129 Holden Street Site. It is estimated that approximately 50,000 cubic yards of soil will be brought from the UB Medical Site and stockpiled for reuse at the Site. We note that Areas 2 and 9 will be covered by the UB Medical Building stockpile area. Prior to placement of soil in this area, a demarcation layer will be placed on the ground over the existing surface cover. When the stockpiled soils are removed for use, a minimum of a 2 foot soil cover will be left in place in this area creating the 2 foot clean soil cover system. Highland completed a topographic survey of the Site ground surface prior to soil stockpile placement activities. The ground elevations from the topographic survey will be compared to the final top of clean soil cover survey grades to verify that after the stockpile soil is removed from the MOB and UB Medical Building stockpile areas, a minimum of 2 feet of clean soil cover will remain in place.

The soil from the MOB and the UB Medical Sites will be used to create the 2 foot clean soil cover system to be established across the Site. Construction will be performed using automated earth moving equipment. This equipment utilizes GPS positioning to achieve horizontal positioning and vertical grading elevation. In addition, verification of the thickness of the clean soil cover will be accomplished using modern surveying techniques to measure elevation of both the pre-covered and post-covered surfaces at grid spacing of not more than 100 feet throughout the site. These borrow sources will provide for up to 80,000 cubic yards of soil. The volume of soil needed for the clean soil cover system is estimated at 87,500 cubic yards assuming a 2 foot cover over the 27.09 acre Site. Additional source(s) of cover system soils will need to be identified for the Site.

Soil to be utilized at the Site for the clean soil cover system will need to meet the requirements of Part 375-6.8(b) for reuse at a restricted residential site. Prior to soil being brought to the Site for use in the cover system, Highland will seek NYSDEC approval for the use of the material(s).

### 2.3.6 Groundwater Management

No groundwater or perched water was identified during exploratory test pit excavations completed at the Site. Groundwater was encountered in the test boring/monitoring wells at depths ranging from around 13 feet bgs (MW-4) to 26 feet bgs (MW-6). Groundwater is not expected to be encountered during the remedial action to be completed at the Site. However, if groundwater and/or perched water are encountered during remedial action it will be managed in accordance with Buffalo Sewer Authority regulations and in consultation with the NYSDEC.

### 2.3.7 Off-Site Disposal

At this time, the SCOC soil excavation activities are the only anticipated remedial action that will generate soils for proper off-site disposal. After the SCOC soil excavations are completed, the stockpiled soil will be characterized for landfill



disposal. The waste characterization analysis to be completed will be based on the proposed landfill requirements and may include toxic characteristic leaching procedure (TCLP) VOCs, TCLP SVOC, TCLP metals, polychlorinated biphenyls, and ignitability.

Once landfill approvals are received, impacted soil/fill removed from the Site will be loaded into dump trailers or trucks for transport to and disposal at a NYSDEC-permitted commercial solid waste disposal facility. Each load will be appropriately manifested. The trailers and/or dump trucks leaving the Site will be fully tarped to mitigate spills or wind erosion of soil/fill material.

### 2.3.8 Monitoring Well Decommissioning

The six monitoring wells that are present at the site will be decommissioned in accordance with the NYSDEC's CP-43: Groundwater Monitoring Well Decommissioning Policy, dated November 3, 2009. The proposed method to decommission the monitoring wells will be to remove the protective casings and grout the wells in-place as they were installed into the bedrock at the Site. Grouting in-place will involve filling the casing with grout to a level of five feet below the ground surface, cutting the well casing at the five-foot depth, and removing the top portion of the casing and associated well materials from the ground.

## 3.0 COMMUNITY AIR MONITORING

Real-time community air monitoring will be performed by GZA during remedial action activities, including SCOC impacted soil excavations, South Remedial Area soil cuts and placement within the North Remedial Area and clean soil cover system installation. A Community Air Monitoring Plan (CAMP) is included in GZA's HASP as Appendix C.

Particulate and vapor monitoring will be performed at a distance of approximately 100 feet downwind of the work area and at the downwind property boundary during remedial action intrusive activities. An upwind particulate monitor will also be utilized to establish background particulate conditions.

Organic vapors will be monitored with a portable organic vapor meter (OVM) equipped with a photoionization detector (PID) using a 10.6 electron volt (eV) bulb. The particulates will be monitored using equipment that is capable of measuring particle sizes greater than 10-micrometers (PM-10) and can integrate measurements over a 15-minute time frame. The equipment will also have an audible alarm indicating an exceedance of the action level. Continuous recording of the air monitoring readings will be collected throughout each work day downloaded daily for reporting and inclusion in the Construction Completion Report.

No visible dust will be allowed beyond Site boundaries. Dust suppression, if necessary,

will be completed as outlined in Section 2.2.2 of this work plan. If necessary, odor control will be completed as outlined in Section 2.2.3 of this work plan.

The CAMP is consistent with the requirements for community air monitoring at remediation sites as established by the NYSDOH and NYSDEC and it follows procedures and practices outlined under DER-10 Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).



#### **4.0 DOCUMENTATION AND REPORTING**

GZA will be on-site during remedial actions which will include SCOC excavation/backfilling, soil relocation and clean soil cover system installation to document the remedial activities. Field notes will be recorded during the remedial work and become part of the project file. The field summaries will include the following information for the remedial activities:

- Date;
- Meteorological conditions (temperature, wind, precipitation);
- Site conditions (e.g., dry, damp, dusty, etc.);
- Identification of crew members (GZA and LPC staff present) and other personnel (e.g., agency or site owner) present;
- Description of field activities;
- Location(s) where work is performed;
- Samples collected;
- Problems encountered and corrective actions taken;
- Records of field measurements or descriptions recorded; and
- Notice of modifications to the scope of work.

Photographic documentation of the remedial action activities will be completed.

##### **4.1 PROGRESS REPORTS**

As discussed in Section 2.1.3, project progress will be documented in the monthly progress reports that are currently being completed and submitted to NYSDEC on a monthly basis as part of the BCA requirements.

##### **4.2 CONSTRUCTION COMPLETION REPORT**

A Construction Completion Report (CCR) will be prepared and submitted to the NYSDEC at the completion of the remedial action activities. The CCR will be prepared consistent with the requirements of Section 5.8 of DER-10 and include:



- Text describing the soil/fill excavating, backfilling, and grading activities performed.
- A description of problems encountered, deviations from the Remedial Action Work Plan, and associated corrective measures taken; and other pertinent information necessary to document that the remedial action activities were carried out in accordance with this Work Plan.
- A Site or area map showing the extent of soil excavation.
- A survey map of the pre- and post-clean soil cover system grades.
- The soil disposal documentation of the SCOC excavated soil from the off-site disposal facility.
- Copies of daily field reports and, if applicable, problem identification and corrective measure reports.
- A certification by a licensed NYS Professional Engineer in accordance with Section 1.5 of DER-10.

#### 4.3 REMEDIAL ACTION SCHEDULE

The following schedule is proposed for the implementation of the remedial action and follow up reporting requirements.

Submittal of Remedial Work Plan	August 2014
Remedial Implementation	Fall 2014
Submittal of RAR/CCR	April 2015
Submittal of Site Management Plan:	April 2015
Submittal of Final Engineering Report:	Summer 2015

## **TABLES**

**TABLE 1**  
**Summary Statistical Analysis and Areas for Excavation and Off-Site Disposal**  
**Remedial Remedial Action Work Plan**  
**Brownfield Cleanup Site**  
**129 Holden Street**  
**Buffalo, New York**

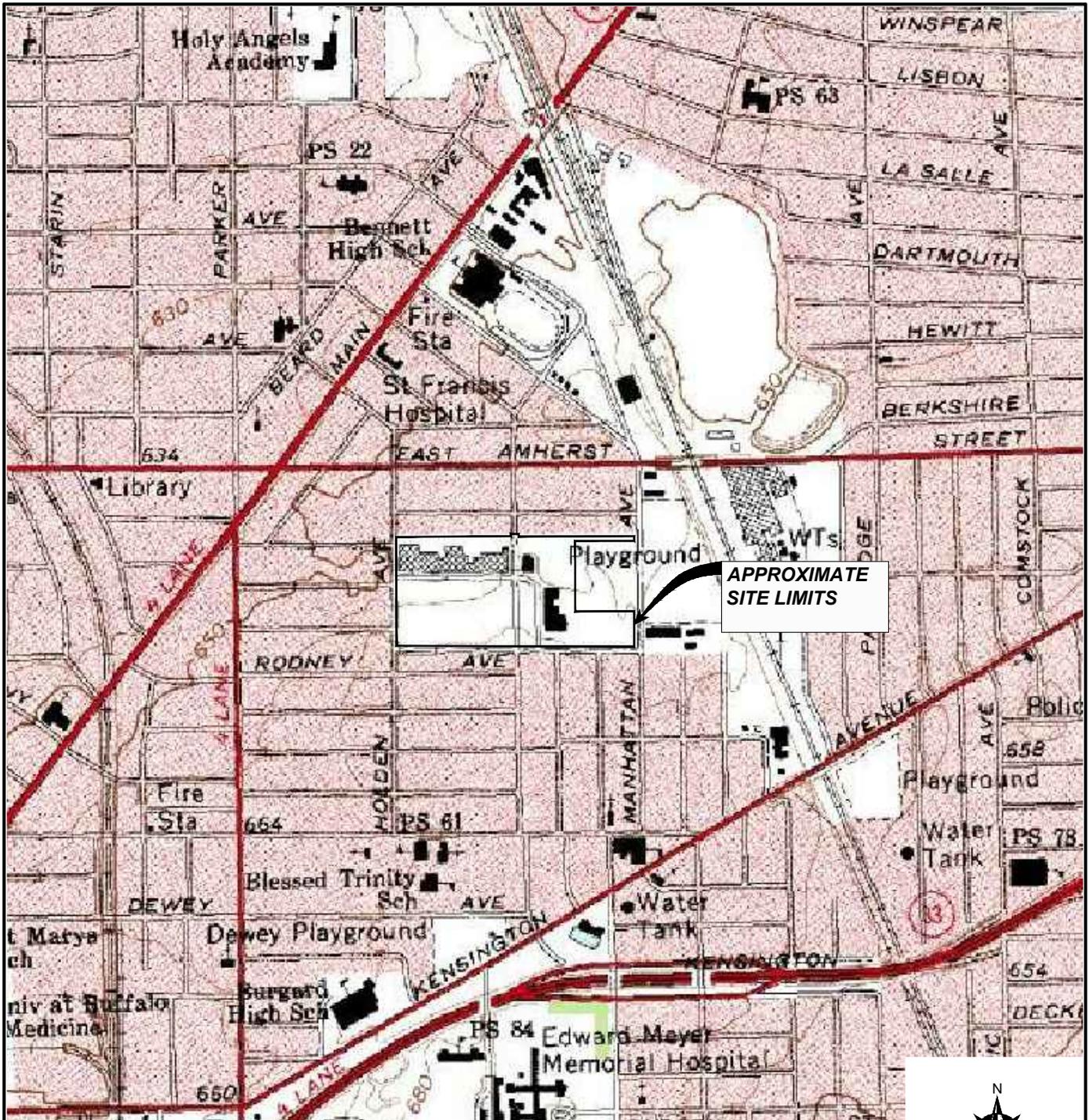
Parameter	Part 375 ISCO (ppm)	Number of Exceedances above ISCO	Potential Outlier Value (ppm)	Location of Potential Outlier Value	Statistical Mean + 2 Standard Deviation (ppm)	Number of Exceedances of Statistical Mean + 2 Standard Deviations	Location of Exceedances of Mean + 2 Standard Deviations	Areas Impacted	Proposed Excavation Limit Thresholds (ppm)
Arsenic	16	10	72.2	TP-77, 4-6	29.6	4	TP-39, 10-12 TP-75, 2-4 TP-74, 13-15 TP-77, 4-6	No Action Proposed as soil is greater than 10 feet bgs Area 5: 1 to 4 ft bgs Area 11: 2 to 4 feet bgs Area 11: 3 to 4 ft bgs	29.6
Chromium	6,800	1	43,700	TP-75, 2-4	9,145	1	TP-75, 2-4	Area 5: 1 to 4 ft bgs	9,145
Copper	10,000	1	19,900	TP-40, 10-12	4,280	1	TP-40, 10-12	No Action Proposed as soil is greater than 10 feet bgs	10,000
Nickel	10,000	1	20,000	TP-75, 2-4	4,196	1	TP-75, 2-4	Area 5: 1 to 4 ft bgs	10,000
Zinc	10,000	3	15,800	TP-77, 4-6	5,447	3	TP-2, 12-14 TP-77, 4-6 MW-5, 13-15	No Action Proposed as soil is greater than 10 feet bgs Area 11: 3 to 4 ft bgs No Action Proposed as soil is greater than 10 feet bgs	10,000
Benzo (a) anthracene	11	5	59,400	TP-31, 8-10	21.173	4	TP-10, 0-2 TP-15, 6-8 TP-31, 8-10 TP-76, 13-15	Area 3: 1 to 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Action Proposed as soil is greater than 8 feet bgs No Action Proposed as soil is greater than 10 feet bgs	21.173
Benzo (a) pyrene	1.1	26	45,800	TP-31, 8-10	17.615	4	TP-10, 0-2 TP-15, 6-8 TP-31, 8-10 TP-76, 13-15	Area 3: 1 to 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Action Proposed as soil is greater than 8 feet bgs No Action Proposed as soil is greater than 10 feet bgs	17.615
Benzo (b) fluoranthene	11	6	45,500	TP-31, 8-10	18.022	4	TP-10, 0-2 TP-15, 6-8 TP-31, 8-10 TP-76, 13-15	Area 3: 1 to 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Action Proposed as soil is greater than 8 feet bgs No Action Proposed as soil is greater than 10 feet bgs	18.022
Dibenz (a,h) anthracene	1.1	12	7,950	TP-15, 6-8	3.24	6	TP-10, 0-2 TP-15, 6-8 TP-31, 4-6 TP-31, 8-10 TP-70, 0-2 TP-76, 13-15	Area 3: 1 to 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs Area 4: 1 to 2 ft bgs No Action Proposed as soil is greater than 10 feet bgs	3.24
Indeno (1,2,3-cd) pyrene	11	5	34,900	TP-15, 6-8	13.149	5	TP-10, 0-2 TP-15, 6-8 TP-31, 8-10 TP-70, 0-2 TP-76, 13-15	Area 3: 1 to 4 feet bgs No Action Proposed as soil is greater than 4 feet bgs No Proposed Action as soil is greater than 4 feet bgs Area 4: 1 to 2 ft bgs No Action Proposed as soil is greater than 10 feet bgs	13.149

**Table 2  
Summary of the Remedial Action Areas  
Remedial Action Work Plan  
Brownfield Cleanup Site  
129 Holden Street  
Buffalo, New York**

AREA	INVESTIGATION LOCATIONS & ESTIMATED DEPTHS FOR CLEANUP	ESTIMATED AREA & DEPTH (ft)	CLEANUP DEPTHS (ft bgs)	ESTIMATED VOLUME OF SOIL TO BE REMEDIATED (cy)	RELOCATION ESTIMATED VOLUME (cy)	EXCAVATION & DISPOSAL ESTIMATED VOLUME (cy)	REMEDIAL AREA DESCRIPTION
1	TP-47 (1.5 to 4 ft bgs); TP-67 (1 to 4 ft bgs)	100 x 170 x 2	1 to 3	1,260	1,260	0	Ash was identified at TP-67 and TP-47. Ash from TP-67, 1 to 4 feet bgs and TP-47, 1.5 to 4 feet bgs to be removed as part of Track 4 Cleanup. Copper was detected above its respective RRSCO at TP-67 (0 to 2 feet). Assumes Ash encountered will be addressed as majority of samples collected Ash had exceedances of RRSCOs.
2	TP-21 (0 to 4 ft bgs)	15 x 15 x 3	0 to 3	25	25	0	Black Sand present at TP-21 from 0 to 4 feet bgs with two SVOCs detected slightly above their RRSCO. Black Sands not observed at TP-20, -28 or -32. Black Sand from 0 to 4 feet bgs to be addressed to achieve Track 4 Cleanup.
3	TP-10 (1 to 4 ft bgs)	100 x 100 x 3	1 to 4	1,110	555	555	Dark Brown Sand with various debris present at TP-10 from 1 to 17 feet bgs. SVOCs were detected in sample from 0 to 2 feet were up to 30 times the RRSCO; however, 0 to 1 was asphalt and subbase. Dark Brown Sand from 1 to 4 feet bgs to be addressed to achieve Track 4 Cleanup.
4	TP-27 (1 to 4 ft bgs) TP-69 (0.5 to 2 ft bgs) TP-70 (0.5 to 1.5 ft bgs) TP-71 (1.5 to 2.5 ft bgs) TP-79 (0 to 4 ft bgs) SP-9 (0 to 4 ft bgs)	250 x 300 x 3	Varies from 0 to 4	8,350	7,880	470	Area 4 contains a number of different soil types from 0 to 4 feet bgs with primarily SVOCs exceeding their respective RRSCOs. There is some shallow slag present in this area. SP-9 is a soil probe location completed as part of the Phase II ESA in the former chop shop location for which NYSDEC Spill # 1109473 was assigned. Soil in the is area from 0 to 4 feet bgs to be addressed to achieve Track 4 Cleanup.
5	SP-4 (2 to 4 ft bgs) TP-75 (1 to 4 ft bgs) TP-76 (2.5 to 4 ft bgs)	180 x 100 x 2	Varies from 1 to 3	1,335	667	668	SP-4: Brown Silty Clay samples from 2 to 6 feet bgs had a few SVOCs above RRSCOs, so soil from 2 to 3 ft bgs will be addressed to achieve Track 4 Cleanup. TP-75: Dark Brown Gravel and Black Sand sample from TP-75, 2 to 4 feet bgs contained one SVOC and four metals above their respective RRSCO, so soil from 1 to 3 feet bgs to be addressed to achieve Track 4 Cleanup. TP-76: Ash observed at 2.5 to 3 ft bgs to be addressed to achieve Track 4 Cleanup.
6	TP-17 (1 to 4 ft bgs) SP-15 (0 to 4 feet bgs)	100 x 150 x 4	0 to 4	2,225	2,225	0	TP-17: Brown Sand & Gravel sample from 2 to 4 ft bgs had SVOCs above RRSCOs, so soil from 0.5 to 4 ft bgs will be addressed to achieve Track 4 Cleanup. SP-15: Brown Silty Clay sample from 0 to 4 feet bgs had SVOCs above RRSCOs, so soil from 0 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
7	TP-54 (2 to 4 ft bgs)	15 x 15 x 2	2 to 4	20	20	0	TP-54: Brown Silty Clay sample from 2 to 4 ft bgs had Lead detected above RRSCOs, so soil from 2 to 4 ft bgs will be addressed to achieve Track 4 Cleanup. Soil from 0 to 2 feet bgs to be addressed with asphalt, subbase and slag removal.
8	TP-12 (3 to 4 ft bgs)	15 x 15 x 1	3 to 4	10	10	0	TP-12: Dark brown Sand and Gravel sample from 3 to 5 ft bgs had one SVOC (Indeno(1,2,3-cd)pyrene) above RRSCOs, so soil from 3 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
9	TP-11 (3 to 4 ft bgs)	20 x 20 x 1	3 to 4	15	15	0	TP-11: Black sands present from 3 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
10	TP-15 (3 to 4 ft bgs)	50 x 50 x 1	3 to 4	95	95	0	TP-15: Black sands from 3 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
11	TP-74 (2 to 4 ft bgs) TP-77 (3 to 4 ft bgs)	200 x 50 x 1.5	Varies from 2 to 4	560	0	560	Ash present at TP-74, 2 to 4 ft bgs and TP-77, 3 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
12	TP-49 (0 to 4 ft bgs)	15 x 15 x 2.5	0.5 to 3	20	20	0	TP-49: Brown Gravel and sand sample from 2 to 3 ft bgs had one SVOC (Indeno(1,2,3-cd)pyrene) above RRSCOs, so soil from 0.5 to 4 ft bgs will be addressed to achieve Track 4 Cleanup.
13	Slag layer identified in multiple locations in southwestern portion of Site as well as TP-14, TP-41 and TP-46.	Volume based on area of slag shown on Figure 4B/7 and average thickness of ~1 foot.	Varies from 1 to 3	7,650	7,650	0	Slag is present at multiple locations at a depth of 1 to 3 feet bgs with an average thickness of around 1 foot. Slag volume reduced by about 695 cy to account for overlap with Area 4.

Total Volume	22,675	20,422	2,253
	<b>23,000 cyds</b>	<b>20,500 cyds.</b>	<b>2,500 cyds</b>

## **FIGURES**



**NOTE:**  
 BASE MAP ADAPTED FROM U.S.G.S.  
 TOPOGRAPHIC MAPS DOWNLOADED  
 FROM TERRASERVER.MICROSOFT.COM



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PREPARED FOR:  
**HIGHLAND PARK VILLAGE, LLC**

PROJ MGR: CZB REVIEWED BY: CHECKED BY: DATE PROJECT NO. REVISION NO.  
 DESIGNED BY: DRAWN BY: DEW SCALE: AS SHOWN AUGUST 2014 21.0056642.10

NO.	ISSUE/DESCRIPTION	BY	DATE
	129 HOLDEN STREET BUFFALO, NEW YORK BROWNFIELD CLEANUP PROGRAM SITE NO. C915261		
<b>REMEDIAL ACTION WORK PLAN</b>			<b>1</b>

©2013 - GZA GeoEnvironmental of N.Y. GZA-K:\PROJECTS\56600a\56642.1 Remedial Investigation - 129 Holden Street\Remedial Action Work Plan\Figure 2.dwg [FIGURE 2 SITE PLAN] August 14, 2014 - 11:40am ronald.stark



APPROXIMATE  
BROWNFIELD  
BOUNDARY/PROPERTY  
BOUNDARY

**NOTES:**

1. BASE MAP ADAPTED FROM A 2008 AERIAL PHOTO AND PROPERTY LINE DOWNLOADED FROM <http://www.nysgis.state.ny.us/gateway/mg/index.html> AND FIELD OBSERVATIONS.

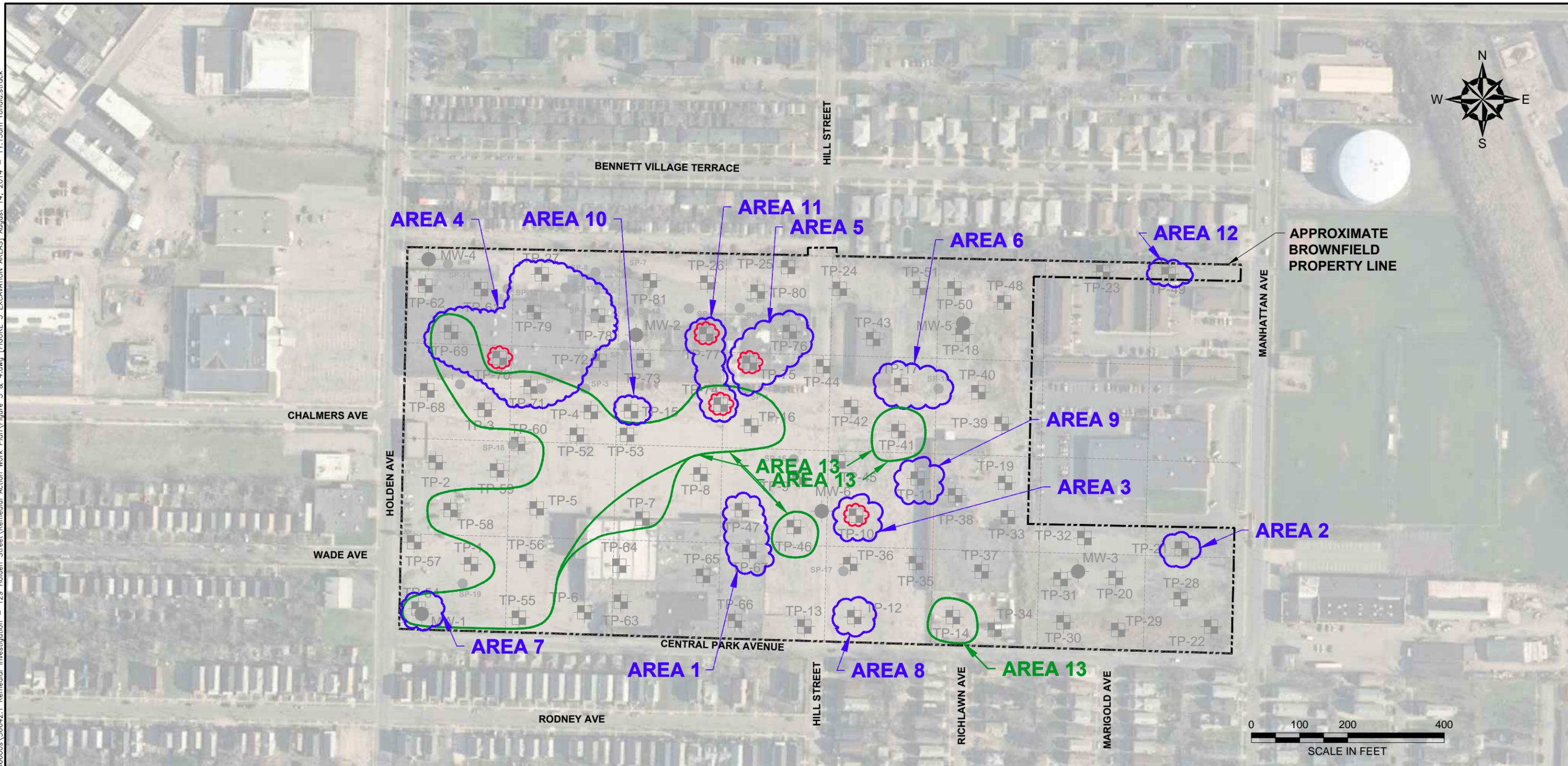
2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.



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NO.	ISSUE/DESCRIPTION	BY	DATE
<b>129 HOLDEN STREET BUFFALO, NEW YORK BROWNFIELD CLEANUP PROGRAM SITE NO. C915261</b>			
<b>REMEDIAL ACTION WORK PLAN SITE PLAN</b>			
PREPARED BY: <b>GZA GeoEnvironmental of N.Y.</b> Engineers and Scientists 535 WASHINGTON STREET 11th FLOOR BUFFALO, NEW YORK 14203 (716) 685-2300		PREPARED FOR: <b>HIGHLAND PARK VILLAGE, LLC</b>	
PROJ MGR:	CZB	REVIEWED BY:	CHECKED BY:
DESIGNED BY:		DRAWN BY:	DEW
DATE:	AUGUST 2014	PROJECT NO.:	21.0056642.10
		SCALE:	AS SHOWN
		REVISION NO.:	
			FIGURE <b>2</b>

©2014 - GZA GeoEnvironmental of N.Y., GZA-K:\PROJECTS\56600s\56642.1 Remedial Investigation - 129 Holden Street\Remedial Action Work Plan\Figure 3 & 4.dwg [FIGURE 3 EXCAVATION AREAS] August 14, 2014 - 11:15am ronald.strack



**LEGEND:**

- 
APPROXIMATE LOCATION AND DESIGNATION OF TEST PITS COMPLETED BY NATURE'S WAY ENVIRONMENTAL
- 
APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELLS COMPLETED BY NATURE'S WAY ENVIRONMENTAL
- 
APPROXIMATE LOCATION AND DESIGNATION OF SOIL PROBES COMPLETED BY TREC ENVIRONMENTAL, INC. ON OCTOBER 11, 2011

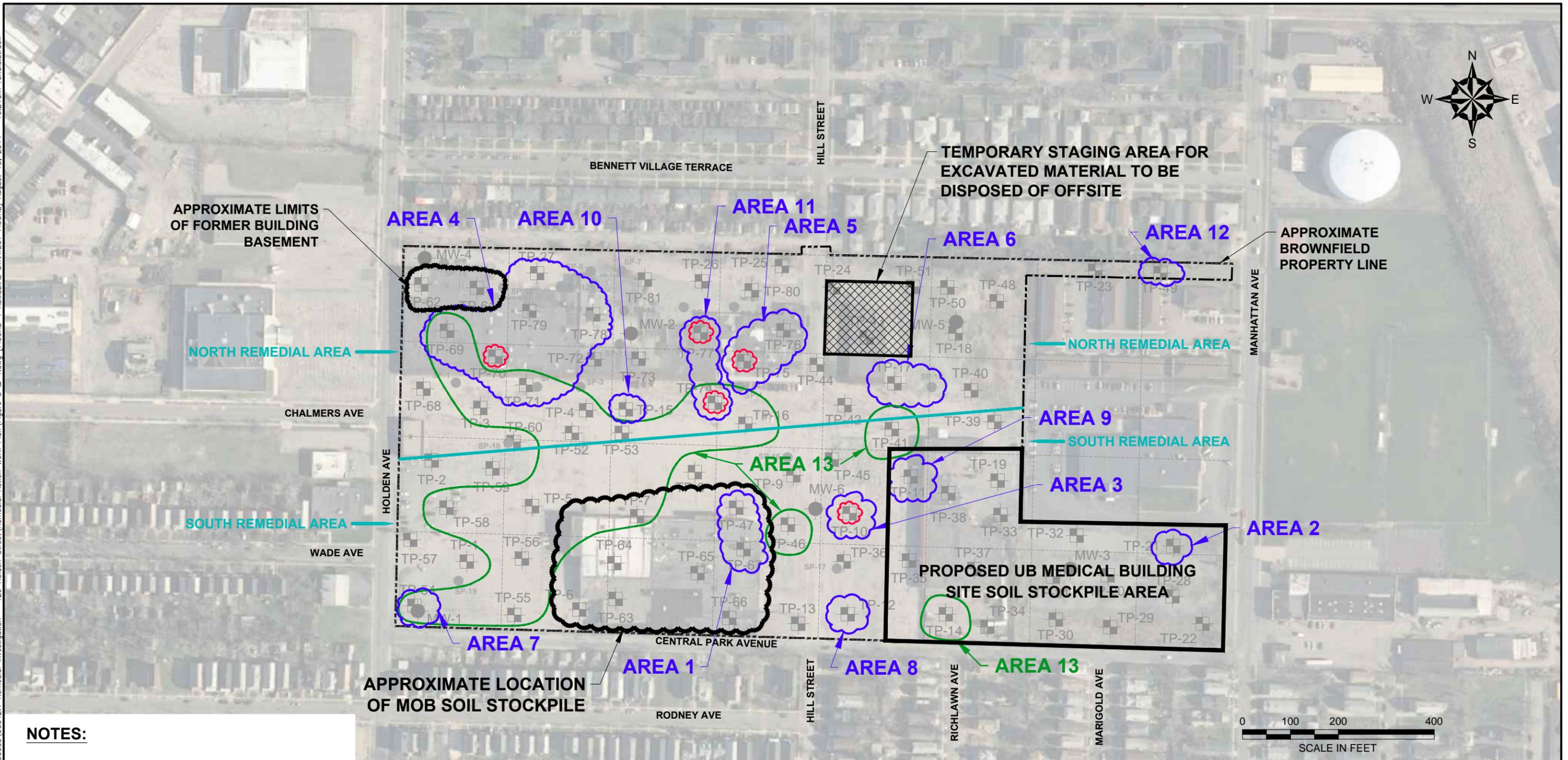
- 
APPROXIMATE LOCATION AND DESIGNATION OF POTENTIAL REMEDIAL ACTION
- 
APPROXIMATE AREA OF SLAG MATERIAL OBSERVED IN EXPLORATIONS
- 
APPROXIMATE LOCATION AND DESIGNATION OF POTENTIAL AREA TO BE EXCAVATED FOR OFF-SITE DISPOSAL

**NOTES:**

1. BASE MAP ADAPTED FROM A 2008 AERIAL PHOTO AND PROPERTY LINE DOWNLOADED FROM <http://www.nysgis.state.ny.us/gateway/mg/index.html> AND FIELD OBSERVATIONS.
2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.
3. GRID SHOWN IS 1 ACRE INTERVALS.
4. SEE TABLE 4 FOR DESCRIPTION OF REMEDIAL AREAS.

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NO.	ISSUE/DESCRIPTION	BY	DATE
	129 HOLDEN STREET BUFFALO, NEW YORK BROWNFIELD CLEANUP PROGRAM SITE NO. C915261		
REMEDIAL ACTION WORK PLAN SCOC EXCAVATION AREAS AND AOCS TO BE ADDRESSED BY REMEDIAL ACTION			
<small>PREPARED BY:</small>  <b>GZA GeoEnvironmental of N.Y.</b> Engineers and Scientists 535 WASHINGTON STREET 11th FLOOR BUFFALO, NEW YORK 14203 (716) 685-2300		<small>PREPARED FOR:</small> <b>HIGHLAND PARK VILLAGE, LLC</b>	
<small>PROJ MGR:</small> CZB	<small>REVIEWED BY:</small>	<small>CHECKED BY:</small>	<b>FIGURE 3</b>
<small>DESIGNED BY:</small>	<small>DRAWN BY:</small> TAK	<small>SCALE:</small> AS SHOWN	
<small>DATE:</small> AUGUST 2014	<small>PROJECT NO.:</small> 21.0056642.10	<small>REVISION NO.:</small>	



**NOTES:**

1. SITE REMEDIAL STRATEGY TO INCLUDE:
  - REMOVAL OF IMPACTED FILL (AREAS IN RED)
  - SITE GRADING & PLACEMENT OF DEMARCATION LAYER
  - PLACEMENT OF MINIMUM 2' THICK CLEAN SOIL COVER
2. BASE MAP ADAPTED FROM A 2008 AERIAL PHOTO AND PROPERTY LINE DOWNLOADED FROM <http://www.nysgis.state.ny.us/gateway/mg/index.html> AND FIELD OBSERVATIONS.
3. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

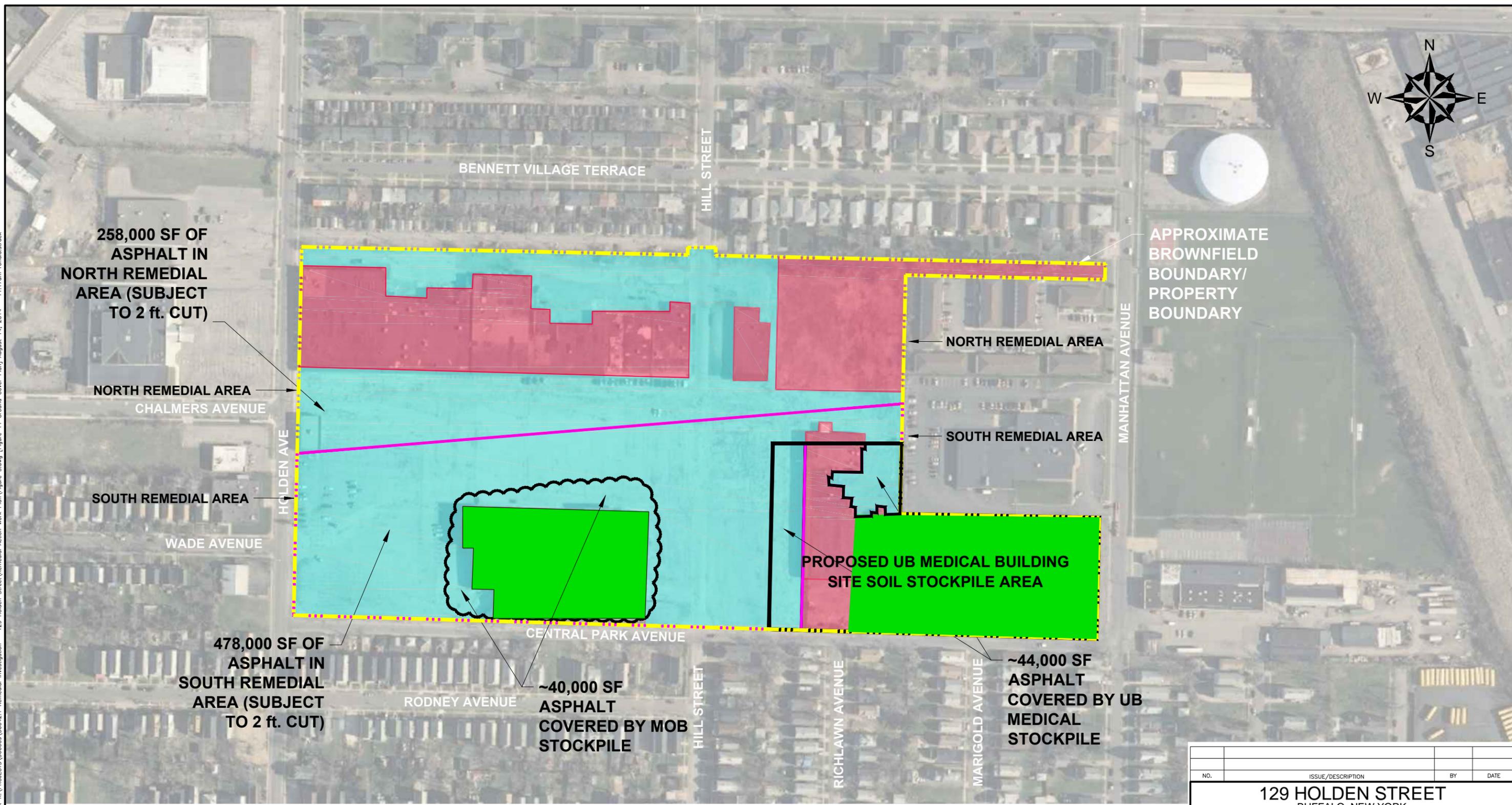
**LEGEND:**

- |                                     |   |  |
|-------------------------------------|---|--|
| <p>TP-1</p> <p>MW-1</p> <p>SP-3</p> | <p>APPROXIMATE LOCATION AND DESIGNATION OF TEST PITS COMPLETED BY NATURE'S WAY ENVIRONMENTAL</p> <p>APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELLS COMPLETED BY NATURE'S WAY ENVIRONMENTAL</p> <p>APPROXIMATE LOCATION AND DESIGNATION OF SOIL PROBES COMPLETED BY TREC ENVIRONMENTAL, INC. ON OCTOBER 11, 2011</p> | <p>APPROXIMATE LOCATION AND DESIGNATION OF POTENTIAL REMEDIAL ACTION</p> <p>APPROXIMATE AREA OF SLAG MATERIAL OBSERVED IN EXPLORATIONS</p> <p>APPROXIMATE LOCATION AND DESIGNATION OF POTENTIAL AREA TO BE EXCAVATED FOR OFF-SITE DISPOSAL</p> |
|-------------------------------------|---|--|

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

NO.	ISSUE/DESCRIPTION	BY	DATE
129 HOLDEN STREET BUFFALO, NEW YORK BROWNFIELD CLEANUP PROGRAM SITE NO. C915261			
REMEDIAL ACTION WORK PLAN REMEDIAL STRATEGY FIGURE			
PREPARED BY: GZA GeoEnvironmental of N.Y. Engineers and Scientists 535 WASHINGTON STREET 11th FLOOR BUFFALO, NEW YORK 14203 (716) 685-2300		PREPARED FOR: HIGHLAND PARK VILLAGE, LLC	
PROJ MGR: CZB DESIGNED BY: DATE: AUGUST 2014	REVIEWED BY: DRAWN BY: TAK PROJECT NO. 21.0056642.10	CHECKED BY: SCALE: AS SHOWN REVISION NO.	FIGURE <b>4</b>

©2014 - GZA GeoEnvironmental of N.Y. GZA-K:\PROJECTS\66600a\66642.1 Remedial Investigation - 129 Holden Street\Remedial Action Work Plan\Figure 5.dwg [Figure 11 Ground Cover Plan] August 14, 2014 - 11:17am ronold.strook



258,000 SF OF ASPHALT IN NORTH REMEDIAL AREA (SUBJECT TO 2 ft. CUT)

APPROXIMATE BROWNFIELD BOUNDARY/ PROPERTY BOUNDARY

NORTH REMEDIAL AREA  
CHALMERS AVENUE

NORTH REMEDIAL AREA

SOUTH REMEDIAL AREA

SOUTH REMEDIAL AREA

WADE AVENUE

478,000 SF OF ASPHALT IN SOUTH REMEDIAL AREA (SUBJECT TO 2 ft. CUT)

PROPOSED UB MEDICAL BUILDING SITE SOIL STOCKPILE AREA

~40,000 SF ASPHALT COVERED BY MOB STOCKPILE

~44,000 SF ASPHALT COVERED BY UB MEDICAL STOCKPILE

**LEGEND:**

- SOIL STOCKPILES
- GRAVEL, SOIL, OR VEGETATIVE COVER
- ASPHALT COVER

**NOTES:**

1. BASE MAP ADAPTED FROM A 2008 AERIAL PHOTO AND PROPERTY LINE DOWNLOADED FROM <http://www.nysgis.state.ny.us/gateway/mg/index.html> AND FIELD OBSERVATIONS.
2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.



UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

NO.	ISSUE/DESCRIPTION	BY	DATE
<b>129 HOLDEN STREET BUFFALO, NEW YORK</b>			
<b>REMEDIAL ACTION WORK PLAN CURRENT SITE GROUND COVER</b>			
PREPARED BY: GZA GeoEnvironmental of N.Y. Engineers and Scientists 535 WASHINGTON STREET 11th FLOOR BUFFALO, NEW YORK 14203 (716) 685-2300		PREPARED FOR: <b>HIGHLAND PARK VILLAGE, LLC</b>	
PROJ MGR: CZB	DESIGNED BY:	REVIEWED BY: MDK	CHECKED BY:
DATE: AUGUST 2014	PROJECT NO.: 21.0056642.10	SCALE: AS SHOWN	REVISION NO.
			<b>FIGURE 5</b>

**APPENDIX A**  
**TEST PIT LOGS**

**PROJECT NAME**  
**TEST PIT FIELD LOG**

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Tony Kaminski  
 Make: CAT Model: 315 CL

Test Pit No: TP-10  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 7/11/2012  
 Weather: Sunny, humid, 90°F (~maximum)  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
0.5			Asphalt and Subbase (~10-inches).	0
1			<p>Dark Brown SAND, some Gravel, little Silt, little Brick, trace Clay, trace Steel, trace Concrete, trace Tile, moist (Fill).</p> 	0
1.5				0
2				0
2.5				0
3				0
3.5				0
4				0
4.5				0
5				0
5.5				0
6			0	
6.5			0	
7			0	
7.5			0	
8			0	
8.5			0	
9			0	
9.5			0	
10			0	

REMARKS:

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Tony Kaminski  
 Make: CAT Model: 315 CL

Test Pit No: TP-10  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 7/11/2012  
 Weather: Sunny, humid, 90°F (~maximum)  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
10.5			Dark Brown SAND, some Gravel, little Silt, little Brick, trace Clay, trace Steel, trace Concrete, trace Tile, moist (Fill).	0
11				
11.5				
12				
12.5				
13				
13.5				
14				
14.5				
15				
15.5				
16				
16.5				
17				
17.5				
18				
18.5				
19				
19.5				
20				
			End of Excavation at 17.0' below ground surface.	

REMARKS:

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-10A  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			Asphat (4-inches) and Subbase (6-inches).	0
2			FILL: Brown SAND and GRAVEL, trace Silt, trace Clay, trace Brick, trace Metal, moist.	
3			Brown Silty CLAY, little Gravel, trace Sand, trace Glass, trace Brick, moist.	0
4			Grades to:....some Brick.	
5			Brown/Orange/White/Black SAND, some Brick, trace Metal, trace Glass, trace Tile, moist.	0
6			Dark Brown SAND and GRAVEL, trace Silt, trace Clay, trace Tile, moist.	
7				0
8				
9				0
10				
11				0
12				
13			Grades to:....little Gravel.	0
14				
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet west of TP-10.

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-10B  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			Asphalt (4-inches) and Subbase (6-inches).	0
2			FILL: Brown SAND and GRAVEL, trace Silt, trace Clay, trace Brick, trace Metal, moist.	
3			Brown Silty CLAY, little Gravel, trace Sand, trace Glass, trace Brick, trace Metal, trace Tile, trace Concrete, moist.	0
4				0
5				0
6			Brown fine to coarse SAND, little Gravel, little Silt, little Clay, trace Brick, trace Metal, moist.	0
7				0
8			Dark Brown SAND and GRAVEL, trace Silt, trace Clay, trace Metal, trace Brick, trace Tile, moist.	0
9				0
10				0
11			Brown Fractured Limestone and Various Soils (Sand, Silt, Clay) moist.	0
12				0
13				0
14				0
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet south of TP-10.

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-70  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/18/2012  
 Weather: Overcast, Rain, 40°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
0.5			Brown GRAVEL and SAND, trace Silt, trace Clay, moist (Fill).	0.4
1			Brown Silty CLAY, some Gravel, little Sand, moist (Fill). Black fine to coarse SAND observed at southeast corner of excavation - ~8-inches thick at 0.5' bgs.	
1.5				
2				
2.5				0.2
3				
3.5				
4				
4.5				0.0
5				
5.5			Large limestone (~4' maximum) observed.	
6				
6.5				0.0
7				
7.5			Dark Brown fine to coarse SAND, little Silt, little Clay, trace Gravel, moist (Fill).	
8				
8.5				0.2
9				
9.5			Excavator refusal at 9' below ground surface (presumed top of bedrock).	
10				

REMARKS:

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-70A  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			FILL: Brown Silty CLAY, some Gravel, little Sand, trace Brick, moist.	0
2				
3				
4				
5				
6				
7				
8			Grades to:.....Coarse Limestone (1-foot maximum) observed, no Brick.	0
9				
10			End of test pit/top of bedrock at 9 feet below ground surface.	
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

REMARKS: 15 feet southeast of TP-70.

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-70B  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID	
1			FILL: Brown Silty CLAY, some Gravel, little Black Sand (mixed), trace Brick, trace Concrete, trace Metal, moist.	0	
2					
3					0
4					
5			Grades to:....no Brick, no Concrete, no Metal, trace Black Sand (mixed).	0	
6					
7				0	
8			Brown and Gray mottled Silty CLAY, little Gravel, trace Sand, moist.		
9				0	
10			End of test pit/top of bedrock at 9.5 feet below ground surface.		
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

REMARKS: 15 feet north of TP-70.

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-74  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
0.5			Asphalt (4-inches) and Subbase (6-inches).	0.1
1				
1.5			Bluish Green fine to course SLAG, moist (Fill).	
2				
2.5			Brown, Dark Brown, Orange, White, Black SAND, trace Brick, trace Silt, trace Clay, trace Metal moist (Fill).	0.0
3			Brown coarse rounded GRAVEL, little Sand, moist (Fill) observed in southern portion of excavation from 2' to 4.5' bgs.	
3.5				
4				
4.5				0.0
5				
5.5				
6				
6.5				0.0
7				
7.5				
8				
8.5				0.0
9				
9.5				
10				

REMARKS:

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-74  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID	
10.5			Brown, Dark Brown, Orange, White, Black SAND, trace Brick, trace Silt, trace Clay, trace Metal moist (Fill).	0.0	
11					
11.5					
12					
12.5					
13					
13.5					
14					
14.5					
15					
15.5				End of excavation at 15' below ground surface.	
16					
16.5					
17					
17.5					
18					
18.5					
19					
19.5					
20					

REMARKS:

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-74A  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			Asphalt (4-inches) and Subbase (6-inches).	0
2			FILL: Bluish Green fine to coarse SLAG, moist.	
3				0
4			Dark Brown/Orange/White/Black SAND, trace Brick, trace Silt, trace Clay, trace Glass, trace Metal, moist.	
5			Brown coarse rounded GRAVEL, little Sand, moist, observed in the southern portion of excavation from 3 to 5 feet below ground surface.	0
6				0
7				0
8				0
9				0
10				0
11				0
12				0
13				0
14				0
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet west of TP-74

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-74B  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			Asphalt (4-inches) and Subbase (6-inches).	0
2			FILL: Bluish Green fine to coarse SLAG, moist.	
3			Brown Silty CLAY, little Gravel, trace Sand, trace Brick, moist.	0
4				
5			Dark Brown/Orange/White/Black SAND, trace Brick, trace Silt, trace Clay, Metal, moist.	0
6				0
7				
8				0
9				
10				0
11				
12				0
13				
14				0
15				
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet northeast of TP-74.

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-75  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
0.5			Brown Silty CLAY, little Gravel, little Sand, trace Slag, trace Asphalt, moist (Fill).	0.0
1				
1.5			Dark Brown GRAVEL and Black SAND, some large Concrete (~3' maximum), little Brick, trace Silt, trace Clay, moist (Fill).	
2				
2.5				0.0
3				
3.5				
4				
4.5				0.0
5				
5.5			Brown Silty CLAY, little Gravel, little Sand, moist (Fill).	
6				
6.5				0.0
7				
7.5				
8			Brown SAND and GRAVEL, some Brick, little Concrete, trace Silt, trace Clay, moist (Fill).	
8.5				0.0
9				
9.5				
10				

REMARKS:

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-75  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
10.5			Brown SAND and GRAVEL, some Brick, little Concrete, trace Silt, trace Clay, moist (Fill).	0.0
11				
11.5			Black fine to coarse SAND (~6-inches) observed in southern wall of excavation.	
12				
12.5			Brown Fractured Limestone and various soils (Sand, Silt, Clay) moist (Fill).	0.0
13				
13.5				
14				
14.5				
15				
15.5			End of excavation at 15' below ground surface.	
16				
16.5				
17				
17.5				
18				
18.5				
19				
19.5				
20				

REMARKS:

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-75A  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			FILL: Brown Silty CLAY, some coarse Gravel, little Sand, trace Brick, trace Asphalt.	0
2				
3				0
4				
5			Grades to:....some Black Sand.	0
6				
7			Grades to:....some little Black Sand.	0
8			Grades to:....no Black Sand.	
9				0
10				
11			Grades to:....little Black Sand, trace Ash.	0
12				
13			Grades to:....no Black Sand, no Ash.	0
14			Brown Fractured Limestone and Various Soils (Sand, Silt, Clay) moist.	
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet south of TP-75.

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-75B  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			FILL: Brown Silty CLAY, little Gravel, little Sand, moist.	0
2				
3				0
4			Brown fine to coarse SAND and Black SAND, some coarse Gravel, little Ash, trace Silt, trace Clay, trace Brick, moist.	
5				0
6			Black fine to coarse SAND, some coarse Gravel, little Ash, trace Clay, trace Brick, trace Silt, moist.	
7			Brown Silty CLAY, little Gravel, trace Sand, moist.	0
8				
9				0
10				
11				0
12				
13				0
14			Brown Silty CLAY, some Gravel, little Black Sand, moist.	
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet northeast of TP-75.

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-77  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
0.5			Brown Silty CLAY, little Sand, trace Gravel, trace Brick, moist (Fill).	0.0
1				
1.5				
2			Brown GRAVEL (~2' maximum) and SAND, trace Clay, trace Silt, trace Brick, moist (Fill).	0.0
2.5				
3				
3.5			Brown, Dark Brown, Orange, White, Black SAND, trace Brick, trace Silt, trace Clay, trace Glass, trace Metal, moist (Fill).	0.0
4				
4.5				
5			Brown GRAVEL and SAND, little Silt, little Clay, trace Brick, moist (Fill).	0.0
5.5				
6				
6.5			Brown Fractured Limestone and various soils (Sand, Silt, Clay) moist (Fill). large limestone (~3' maximum) observed.	0.0
7				
7.5				
8				
8.5				
9				
9.5				
10				

REMARKS:

## TEST PIT FIELD LOG

Project Description: BCP Site C915261  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: Nature's Way  
 Operator: Corey Haaf  
 Make: CAT Model: 315 CL

Test Pit No: TP-77  
 Location: \_\_\_\_\_  
 File No: 21.0056642.10  
 Date: 12/19/2012  
 Weather: Overcast, 30°F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
10.5			Brown Fractured Limestone and various soils (Sand, Silt, Clay) moist (Fill). large limestone (~3' maximum) observed.  Grades to: Black Sand.  Grades to: Brown Sand.  End of excavation at 15.5' below ground surface.	0.0
11				
11.5				
12				
12.5				
13				
13.5				
14				
14.5				
15				
15.5				
16				
16.5				
17				
17.5				
18				
18.5				
19				
19.5				
20				

REMARKS:

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-77A  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			FILL: Brown Silty CLAY, little Sand, trace Gravel, trace Brick, moist.	0
2				
3				0
4				
5			Black fine to coarse SAND, moist.	0
6			Brown coarse GRAVEL (2-foot maximum) and Black SAND, trace Silt, trace Clay, trace Brick, moist.	
7				0
8				
9			Brown Silty CLAY, little Sand, trace Gravel, trace Brick. Grades to:.....and Black Sand (mixed, 8-inches).	0
10				
11			Brown Fractured Limestone and Various Soils (Sand, Silt, Clay) and ASH (mixed).	0
12				
13			Grades to:.....trace ASH.	0
14				
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet south of TP-77

## TEST PIT FIELD LOG

Project Description: Former Central Park Plaza  
 Project location: 129 Holden Street  
 GZA Representative: Thomas Bohlen  
 Contractor: LPCiminelli  
 Operator: Matt Hillman  
 Make: Deere Model: 135D

Test Pit No: TP-77B  
 Location: Buffalo, NY  
 File No: 21.0056642.10 Task 20  
 Date: 4/10/2014  
 Weather: Sunny, windy, 40-60 degrees F  
 Ground elev.: \_\_\_\_\_

DEPTH (feet)	SAMPLE NO.	SAMPLE DEPTH	DESCRIPTION	PID
1			FILL: Brown Silty CLAY, little Sand, trace Gravel, trace Brick, moist.	0
2				
3				0
4			Large Limestone (3-foot maximum) observed.	
5			Brown fine to coarse SAND, little Gravel, trace Silt, trace Clay, moist.	0
6				
7			Grades to: some large Limestone (2-foot maximum).	0
8				
9				0
10				
11				0
12			Brown Fractured Limestone and Various Soils (Sand, Silt, Clay) moist.	
13				0
14				
15				0
16			End of test pit at 15 feet below ground surface.	
17				
18				
19				
20				

REMARKS: 15 feet west of TP-77.