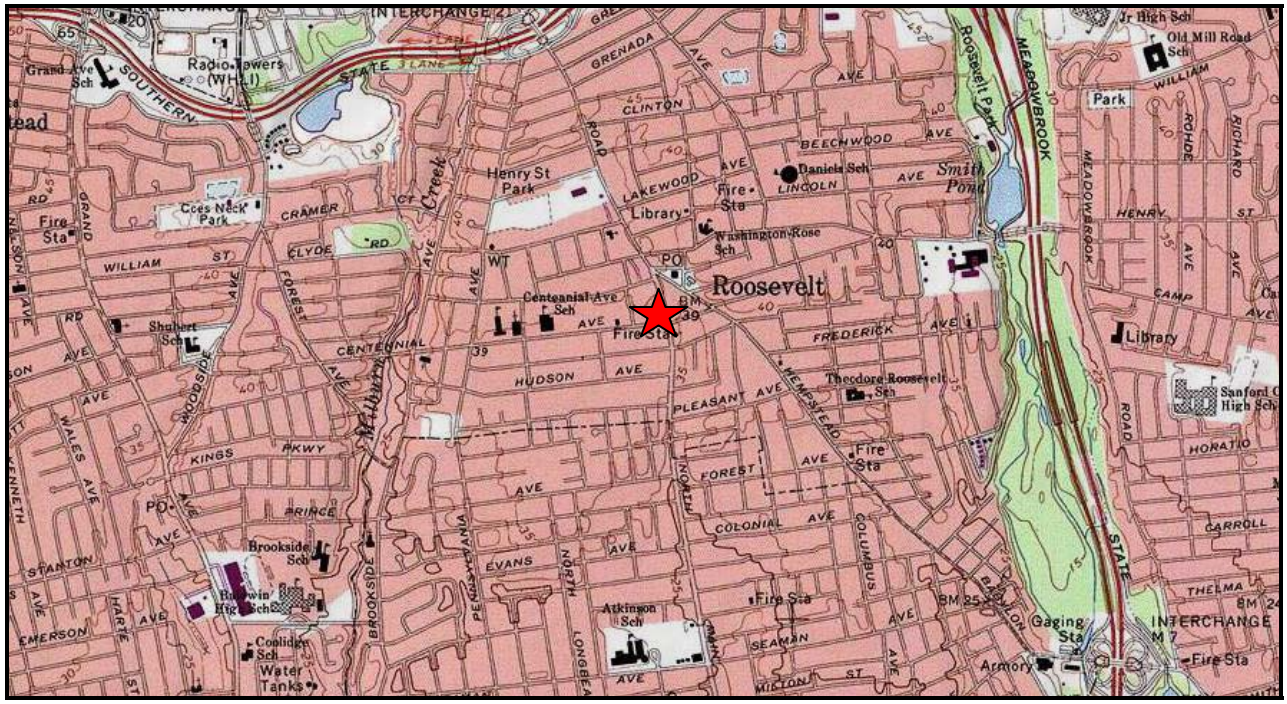
Supplemental Remedial Investigation Work Plan

20 West Centennial Avenue, Roosevelt, New York

NYSDEC Site No. 1-30-154



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SECTION 1.0
INTRODUCTION

This Supplemental Remediation Investigation Work Plan has been prepared by Dermody Consulting for the property located at 20 West Centennial Avenue in Roosevelt, New York. The property consists of a northern portion that contains a warehouse currently leased to J. Ramos Woodworking, Inc. (the "woodworking building"), and a southern portion that contains a 9,000 square foot former commercial laundry building (the "south building"). For the purpose of this investigation, the area of concern (the "Site") is defined as the southern portion of the property (that is, the portion of the property to the south of the woodworking building). The Site location is shown in Figure 1 and the Site layout is shown in Figure 2.

Based on a Phase II Environmental Site Assessment (ESA) performed by Sear-Brown during October, 2002 and a partial Remedial Investigation performed by Malcolm Pirnie during April and May, 2008, the soil at the Site and the groundwater at and downgradient of the Site have been impacted primarily by tetrachloroethylene and its degradation products. The Site is listed as New York State Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Disposal Site No. 1-30-154.

The purpose of this proposed Supplemental Remedial Investigation is to further delineate the nature and extent of contamination in the subsurface soil and groundwater beneath and downgradient of the Site. To achieve this, Dermody Consulting proposes to obtain environmental samples to augment existing sampling data for the Site. Dermody Consulting also proposes to perform a ground-penetrating radar survey to evaluate the potential for additional areas of concern at the Site.

Data obtained during this proposed investigation will be analyzed to determine areas that require additional investigation, and areas that require remediation.

SECTION 2.0
SITE GEOLOGY AND HYDROGEOLOGY

The Site area is underlain by unconsolidated deposits of sand, clay, and gravel of late Cretaceous and Pleistocene ages. In the area of the Site, the upper sand and gravel deposits comprise the Upper Glacial Formation. The soils in the Site area are classified by the US Department of Agriculture as consisting mostly of urban land soils, which consist of a mix of sand, gravel, silt, clay, and fill material. Borings performed during previous investigations have indicated that the upper soil beneath portions of the Site contain cinders and other materials that indicate that artificial fill material exists in some areas in the upper soils of the Site.

The aquifer of concern beneath the Site is the Upper Glacial Aquifer which lies between the water table (which occurs at approximately 20 feet below grade) and the surface of the Magothy Aquifer (which is estimated to occur at 56 feet below grade). The Gardiners Clay and the 20-foot Clay, which are present in many areas in southern Nassau County, do not appear to be present beneath the Site [US Geological Survey publication, "Geology of the 20-Foot Clay and the Gardiners Clay in Southern Nassau County and Southwestern Suffolk County" (US Geological Survey Water Resources Report 82-4056, Doriski and Wilde-Katz, 1983)].

The topography of the Site is generally flat. Based on US Geological Survey Topographic Maps (2003), the elevation of the Site is approximately 36 feet above mean sea level. Based on the Nassau County Water Table Elevation Map dated March, 2000, the regional groundwater flow direction across the area of the Site is generally to the south. However, there may be an easterly or westerly component to the groundwater

flow direction due to the presence of streams located similar distances to the east and west of the Site. Previous investigations at the Site indicated that the depth to the water table in the Site area is 20 to 23 feet below grade.

SECTION 3.0
SITE HISTORY

The Site is located on the north side of West Centennial Avenue, approximately 170 feet west of Nassau Road. The Nassau County tax map number for the Site is Section 55, Block 415, Lot 273.

3.1 Previous Investigations

Phase I Environmental Site Assessment, Sear-Brown, October, 2002

Historical records reviewed from the Town of Hempstead Building Department files, Sanborn Fire Insurance Maps, and aerial photographs indicated that in 1955, a small building on the southern portion of the property was removed and a large industrial building (the former commercial laundry building) was constructed and first occupied by Precision Instruments Manufacturing. It is not known when Precision Instruments vacated the Site. The available history of commercial laundries operating at the Site is as follows:

- Prior to March 1, 1977, the Site was owned by Benjamin Alpert and Alexander Hyde, 333 Stegg St., Brooklyn, NY and was operated as S&H Laundries. On or about March 1, 1977, 20 West Centennial Corporation acquired the Site.
- On December 1, 1977, the Site was leased to Servisco, a New Jersey corporation with offices at 470 Mundet Place, Hillside, NJ. Servisco operated at the Site as a commercial laundry and linen rental service and storage. Servisco was later acquired by Aramark Corp., a public corporation located at 1101 Market St., Philadelphia, PA.

- On or about August 1, 1985, Amlino Realty Corporation, d/b/a Amato Linen Corporation, Angela Coat, Apron & Towel, Inc. leased the Site to operate a commercial laundry. Amlino Realty Corp. purchased the property on October 20, 1988. The owner of Amlino Realty Corp. was William Amato, Jr., who resided in Deer Park, New York and, upon information, still operates a commercial laundry in Suffolk County.
- 1989-1993 - Amlino Realty Corp. is the owner/operator during installation and removal of a 275-gallon above-ground storage tank (AST) and a NY Spill (petroleum release).
- In 1998, Amlino Realty Corp. defaulted on its mortgage, vacated the property and a judgment of foreclosure was entered on September 10, 1998, wherein 20 West Centennial Corp. took ownership of the Site. There have been no other occupants, and the Site has remained vacant to date.

An environmental database search report indicated that the Site was listed as a Resource Conservation and Recovery Act (RCRA) Large-Quantity Generator of hazardous waste for the prior occupant, Island Uniform Rental; as a NYSDEC Chemical Bulk Storage (CBS) site for the prior occupant Angela Coat, Apron & Towel, Inc.; and, as a NY Spill site under the prior occupant Amato Linen Corporation for the release of diesel fuel to the soil during a tank removal. The CBS listing indicated that a 275-gallon AST for the storage of sodium hypochlorite (bleach) had been installed at the Site during October, 1989, however, the AST was reported to be removed in January, 1993. The NY

Spill listed for the Site was opened on October 19, 1990 and closed to the satisfaction of the NYSDEC on October 24, 1990.

Town of Hempstead Building Department records show that a 2,000-gallon gasoline underground storage tank (UST) was installed along the southern portion of the Site in or about November, 1968. Two USTs were reported to exist to the north of the south building; a potential gasoline UST to the northwest of the south building, and a potential fuel oil UST to the northeast of the south building (see Figure 2 for the locations of the potential USTs).

Three stormwater drywells exist at the Site: two to the north of the south building and one in the driveway near the southwest corner of the south building (see Figure 2 for drywell locations).

Several concrete sealed trench drains were noted within the floor of the south building. The trench drains were reported to have been utilized by the past laundry businesses.

Phase II Environmental Site Assessment Report, Sear-Brown, December 26, 2002

A Phase II ESA was performed in November, 2002. A UST was verified to be located to the south of the south building at the Site during a ferro-magnetic geophysical survey. However, the presence of additional USTs located to the north of the south building could not be verified due to metallic interferences.

Eight Geoprobe soil borings were performed (GP-20-1 through GP-20-8) and continuous soil cores were collected for each boring. The depth of the borings ranged from 8 to 28 feet below grade. At four of the boring locations, permanent groundwater monitoring wells were installed (MW-20-3, MW-20-4, MW-20-7, and MW-20-8).

Soil and groundwater samples were collected from below the slab within the south building in the vicinity of the former trench drains (GP-20-1, GP-20-2, and GP-20-3), to the north of the south building (GP-20-7 and GP-20-8), to the south of the south building in the vicinity of the apparent UST (GP-20-4, GP-20-5, and GP-20-6) and, one surface soil sample was collected adjacent and north of the south building. All soil samples were analyzed for volatile organic compounds (VOCs), and selected samples were also analyzed for semi-volatile organic compounds (SVOCs) and RCRA metals, and the surface soil sample collected in the vicinity of spilled hydraulic fluid was analyzed only for polychlorinated biphenyls (PCBs).

Table 1 summarizes the soil chemical analytical results for the samples collected by Sear-Brown during November, 2002. Tetrachloroethylene was detected at concentrations above the NYSDEC Subpart 375.6 Unrestricted Remedial Program Soil Cleanup Objectives (SCOs) and at the highest concentrations in the three soil samples collected from beneath the slab of the south building (GP-20-1, GP-20-2, and GP-20-3). The highest concentration of tetrachloroethylene, 154,000 micrograms per kilogram (ug/kg), was detected at GP-20-3 at 0-2 feet below grade. However, a deeper sample obtained at 22-24 feet below grade at this location showed a decrease in the tetrachloroethylene concentration to 28.4 ug/kg. No SVOCs or PCBs were detected in any of the soil samples collected. Arsenic was detected at a concentration above the SCOs from beneath the slab (GP-20-1). Chromium was also detected at concentrations above the SCOs in samples GP-20-2 and GP-20-3.

Table 2 summarizes the groundwater chemical analytical results collected by Sear-Brown during November, 2002. Four of the borings performed during the soil

investigation were converted to permanent groundwater monitoring wells with 10-foot screens set 5 feet below the water table. Groundwater sample results showed that tetrachloroethylene was detected above the NYSDEC Class GA Ambient Water Quality Standards (the Standards) in all four of the groundwater monitoring wells (MW-20-3, MW-20-4, MW-20-7, and MW-20-8). The highest concentration of tetrachloroethylene was detected at MW-20-3 [7,690 micrograms per liter (ug/l)], which corresponds to the area of highest soil contamination, and MW-20-4 (7,530 ug/l). Relatively minor concentrations of trichloroethylene, a degradation product of tetrachloroethylene, and petroleum constituents were also detected at the Site. Tetrachloroethylene was also detected, at lower concentrations, in the groundwater in the area adjacent to the exterior north wall of the south building. Cadmium and chromium were also detected at concentrations slightly above the Standards in MW-20-3 and MW-20-4, and lead was also detected at a slightly elevated concentration above its Standard in MW-20-3. However, Sear-Brown noted that the groundwater samples obtained for the metals analyses were turbid. Therefore, the metals samples do not appear to be representative of groundwater conditions.

Subsurface Remedial Investigation, Malcolm Pirnie, April, 2008

A Subsurface Remedial Investigation was performed at the Site by Malcolm Pirnie to further delineate the soil and groundwater contamination. The Final Project Management Work Plan (February, 2008) was provided to Dermody Consulting. However, for the investigation, only summary results tables were provided for the samples collected by Malcolm Pirnie in April and May, 2008.

The investigation included the sampling of the liquid and sediment within the three on-Site stormwater drywells (DW-1, DW-2, and DW-3), 33 soil samples were collected at multiple depths from 19 borings (SB-1 through SB-19), two surface soil samples (SS-1 and SS-2) were collected along the southern portion of the Site, and 30 groundwater samples were collected from multiple depths from on-Site borings (GW-2, GW-3, GW-5, and GW-19) and from downgradient, off-Site borings (GW-22 through GW-27). The soil and sediment samples were analyzed for VOCs, SVOCs, and metals. The stormwater drywell liquid samples were analyzed for VOCs. The groundwater samples were analyzed for VOCs and SVOCs.

Table 3 summarizes the chemical analytical results for the sediment sampling for the three Site stormwater drywells. The sediment samples were obtained from a depth of 0-1 foot below the sediment surface. The results show that several SVOCs were detected at concentrations above the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 SCOs [the results are compared to the TAGM-4046 SCOs in accordance with the US Environmental Protection Agency (EPA) Underground Injection Control Program]. Therefore, the three drywells require remediation.

Table 4 summarizes stormwater liquid chemical analytical results for the drywells. The results show minor detections of VOCs.

Table 5 summarizes the soil chemical analytical results. Tetrachloroethylene was detected at concentrations that exceed its SCO in two soil samples collected in the west driveway (SB-3 and SB-4) at 0-1 foot below grade. Tetrachloroethylene was also detected above its SCO in four soil samples collected from beneath the south building at: SB-7 at 2-3 feet below grade; SB-8 at 1-2 and 17-18 feet below grade; SB-10 at 1-2 feet

below grade; and, SB-12 at 4-5 feet below grade. Toluene was detected above its SCO in shallow soil samples collected from the driveway at SB-3 and SB-4.

Minor and sporadic concentrations of SVOCs were detected in the soil samples. All detected concentrations were below the SCOs and are not significant.

For the soil chemical analytical results for metals, the detections were generally sporadic and minor. However, exceedances of the TAGM-4046 SCO for chromium were noted in two surface soil samples (SS-1 and SS-2) and one boring (SB-13). It should be noted that Dermody Consulting compared all soil results to the NYSDEC Subpart 375.6 Unrestricted SCOs. However, since the Subpart 375.6 SCOs do not contain a guidance value for total chromium, the chromium results were compared to the TAGM-4046 SCO.

Table 6 summarizes the VOC and SVOC groundwater chemical analytical results. Tetrachloroethylene and its degradation products (trichloroethylene and cis-1,2-dichloroethylene) were detected in several on-Site and off-Site groundwater samples at concentrations that exceeded the Standards. However, the concentrations are significantly lower than the 2002 on-Site groundwater concentrations.

An upgradient groundwater sample location (GW-2), showed no detections of VOCs or SVOCs at the three depths sampled. Also, the two northernmost soil samples obtained at the Site (SB-1 and SB-2) showed no detections of VOCs or SVOCs and no detections of metals above the SCOs. Therefore, there are no apparent upgradient contributors to the Site groundwater contamination or evidence that the woodworking building is a contributor to the contamination at the Site. A downgradient, on-Site groundwater sample (GW-19), showed tetrachloroethylene at 74 ug/l at the water table (20 feet below grade) and 280 ug/l at 50 feet below grade.

For the on-Site SVOCs, the detections were also minor and sporadic. The only exceedance of the Standards was for bis(2-ethylhexyl)phthalate (12 ug/l at 40 feet below grade at location GW-19).

For off-Site results, relatively minor concentrations of tetrachloroethylene and cis-1,2-dichloroethylene (a degradation product) were detected in the downgradient area. The highest detection of tetrachloroethylene was at GW-22 (immediately downgradient of the Site along West Centennial Ave.) in the shallow groundwater at 280 ug/l. Other detections of chlorinated VOCs were minor and sporadic, both laterally and vertically.

No SVOCs were detected in the off-Site groundwater.

Summary of Previous Investigations

Based on the previous investigations, it appears that releases of tetrachloroethylene occurred within the south building. Also, relatively minor concentrations of tetrachloroethylene were detected in the soil and groundwater in the driveway adjacent and west of the south building, and in the groundwater adjacent to the exterior north wall. No off-Site upgradient contamination appears to be impacting the on-Site groundwater.

The area containing the highest tetrachloroethylene concentrations is the subfloor within the south building in the area of soil sample location GP-20-3, which was found to contain tetrachloroethylene at 154,000 ug/kg at a depth of 1-2 feet. However, a deeper sample (22-24 feet) at this location showed a significant decrease in concentration to 28.4 ug/kg. Shallow samples obtained in the vicinity of GP-20-3 also showed elevated concentrations of tetrachloroethylene. However, these concentrations were all at least one order of magnitude lower than those at GP-20-3.

Also, in the west driveway, elevated concentrations of tetrachloroethylene appear to be confined to the shallow soil. However, elevated concentrations of petroleum constituents, primarily toluene and methylcyclohexane, were noted in the shallow soil at generally the same locations and depths as the tetrachloroethylene detections. This suggests the possibility that in this area, tetrachloroethylene was co-mingled with other compounds and released to the surface in the area of the driveway at relatively minor concentrations. The process by which these compounds entered the subsurface is not known.

The 2002 sampling indicated that the highest groundwater concentrations consisted primarily of tetrachloroethylene and were found near the center of the south building and near the southern (downgradient) property line. Lesser concentrations of tetrachloroethylene and other contaminants were found to be present to the immediate north of the south building.

For the 2008 groundwater sampling, significantly reduced concentrations of tetrachloroethylene were detected at the downgradient border of the Site and in the area immediately off-Site. Further downgradient, there are sporadic detections of tetrachloroethylene and cis-1,2-dichloroethylene, although there are several locations at which exceedances of the Standards were noted.

SECTION 4.0
PROPOSED INVESTIGATION

The purpose of this proposed Supplemental Remedial Investigation is to augment the existing sampling results to determine the extent of contamination in the soil and groundwater. The tasks to be performed are discussed below.

4.1 Ground-Penetrating Radar Survey

A ground-penetrating radar survey will be performed at the Site to obtain evidence of the presence or absence of two USTs at the north end of the Site. Also, the presence of the UST to the south of the south building will be confirmed. Finally, the ground-penetrating radar survey will be performed in the west driveway and to the north of the south building to determine if there is evidence of the presence of subsurface structures that may have accepted discharges from the former trench drains within the south building.

4.2 Soil Sampling Procedures

Soil borings will be performed at five additional locations at the Site using a Geoprobe direct-push rig. The proposed supplemental soil sampling locations are presented in Figure 4. Three of these borings are proposed for the area of the west driveway. The purpose of these borings is to determine if there are any other areas of contamination in the west driveway. In addition, two additional soil borings will be performed within the south building to provide additional information regarding the lateral and vertical extent of the area showing the highest concentrations of contamination in the vicinity of GP-20-3/MW-20-3. This further delineation will be used to evaluate an Interim Remedial Measure to remove the highly contaminated soil so that future soil

vapor extraction (if selected as a part of the Site remedy) may be completed in a shorter timeframe and require lesser amounts of carbon for vapor adsorption.

The borings will be performed with macro-samplers which will obtain soil cores at four-foot intervals. The macro-samplers will be opened and inspected for staining and screened with a photoionization detector (PID). Two soil samples will be retained from zones generally showing the highest PID concentrations. In the event that no PID readings are obtained, the samples retained for laboratory analysis will be derived from the 0 to 2 foot zone. The depth of coring at each location will be 20 feet (which is the approximate depth to the water table). In addition, boring logs will be prepared that describe the geology as well as providing the PID readings for each core.

4.3 Geoprobe Groundwater Sampling Procedures

A Geoprobe rig will be used to obtain groundwater samples from six off-Site locations as shown in Figure 5. The proposed off-Site groundwater sampling locations are selected based on the regional groundwater flow direction (generally south) and the results from the previous groundwater sampling. As discussed previously, due to streams located to the east and west of the Site, there may be an easterly or westerly component of flow. Malcolm Pirnie obtained samples to both the south and southwest in the off-Site area. However, the data indicates that the groundwater flow, and therefore the plume migration, may have a more easterly component. The purpose of the additional sampling is to define the eastern extent of groundwater contamination in the downgradient area.

At each location, a groundwater sample will be obtained from approximately 1 to 2 feet below the water table (approximately 20 to 21 feet below grade) using a check valve and dedicated tubing to agitate the groundwater sample to the surface. In addition,

a second sample will be obtained from approximately 20 feet below the shallow samples (40 to 41 feet below grade). Finally, a third sample will be obtained at 60 to 61 feet below grade. The purpose of the sampling is to delineate the vertical and horizontal extent of contamination in the southeast off-Site area.

4.4 Groundwater Monitoring Well Installation and Sampling Procedures

It is anticipated that off-Site permanent groundwater monitoring wells will be installed at two locations. At each well location, screens are anticipated to be installed at two depth intervals; one shallow and one deep. The locations and depths of the screened intervals of these wells will be determined based on the results of the Geoprobe groundwater sampling investigation and in consultation with, and approval of, the NYSDEC.

The groundwater monitoring wells will be installed with a hollow-stem auger drill rig. It is expected that the shallow and deep screened intervals at each location will be installed within the same borehole. The deep screen will consist of a five-foot length of one-inch-diameter PVC with a slot size of 0.010 inches and an appropriate length of riser pipe. Upon placement of the deep screen, No.1 Morie gravel will be placed in the borehole to a depth of approximately two feet above the top of the screen. Then, approximately two feet of bentonite chips will be placed above the gravel to create a seal between the shallow and deep screens.

The shallow screen will be installed in the same manner, however, the shallow screen will be ten feet in length and will be installed with five feet above, and five feet below, the water table. The interval in the borehole above the bentonite seal (the bentonite above the water table will be hydrated) for the shallow screen will be grouted to

grade. Locking well caps will be placed on the wells and flush-to-grade manholes will be installed at the surface. Following installation, each of the wells will be developed to clarity.

Each of the wells will be sampled following a period of at least one week after the completion of the development of the wells. The wells will be sampled using low-flow sampling methods and purged of at least three casing volumes utilizing dedicated polyethylene tubing with a submersible pump and a low-flow controller. Prior to collecting the groundwater samples, three casing volumes of groundwater will be purged at a rate of 0.1 liters per minute. Stability parameters, including pH, specific conductivity, and temperature, will be recorded following the removal of each casing volume. Sampling will commence if the parameters following the removal of the second and third volumes show agreement within 10 percent. Otherwise, an additional volume will be purged and the stability parameters compared to the previous readings. No more than five casing volumes will be removed prior to sampling.

Samples will be contained in 40 milliliter vials with Teflon septa with zero headspace. The samples will be placed into an ice-filled cooler for delivery to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory for analysis of VOCs via USEPA Method 8260 with Category B deliverables (the sample analysis will include a matrix spike, a matrix spike duplicate, and an equipment and trip blank). A chain of custody form will be completed to document the sequence of sample possession.

4.5 Soil Vapor Intrusion Sampling Procedures

Following the completion of the analysis of the results from the Geoprobe groundwater investigation, which will provide additional information regarding the location and concentrations of contaminants in the off-Site groundwater, soil vapor intrusion sampling locations will be selected and sampled. The sample locations will be selected in consultation with, and with the approval of, the NYSDEC. The samples will be collected in accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in New York State" (October, 2006).

The sampling locations will include an on-Site sample from the north woodworking building. The south building at the Site, which is known to be the source area of the soil and groundwater contamination, will not be included in the soil vapor investigation since the building is vacant and unoccupied and it is presumed that elevated concentrations of vapors exist within this building. The off-Site, adjacent buildings to be sampled will consist of the two church buildings located adjacent to the south building at 18 W. Centennial Avenue and the building at the corner of Nassau Road and W. Centennial Avenue. Off-Site downgradient samples may consist of two residences located on the south side of W. Centennial Ave. However, the decision regarding the residences to be sampled will be subject to the results of the investigation. All soil vapor intrusion samples will be obtained during the upcoming heating season. The soil vapor intrusion investigation sampling at each location will include one sub-slab soil vapor sample obtained from beneath the first floor, or the lowest floor or basement of the structure. In addition, an indoor air sample will be obtained from a height of approximately four feet in the area of the sub-slab soil vapor sample.

The indoor air samples will be obtained with 6-liter Summa Canisters with flow restrictors set to obtain samples over a 24-hour period at a flow rate of less than 0.2 liters per minute. The sample intakes will be set at a height of approximately four feet above the floor level. The samples will be delivered to a NYSDOH-ELAP-certified laboratory and analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method TO-15 with SIM (Selective Ion Monitoring) with Category B deliverables.

For the sub-slab soil vapor samples, a one-half-inch drill hole will be created through the concrete to a depth of approximately two inches into the underlying soil. A length of quarter-inch-diameter, food-grade polyethylene tubing will be placed to the base of the borehole. Approximately two inches of Morie No. 0 sand will be placed in the borehole around the tubing. Melted beeswax will then be poured into the borehole above the sand to seal the drillhole from the atmosphere. The beeswax will be allowed to set for approximately ten minutes. A Summa Canister will be used to obtain the sample. The tubing will be connected to the canister and a t-valve will be attached to the tubing with a ball valve for flow control. A plastic syringe will be used to withdraw two tubing volumes from the withdrawal port and the ball valve on the port will then be closed. A Summa Canister with a flow restrictor will then be opened and a sample obtained over a 24-hour period at a flow rate of less than 0.2 liters per minute. The samples will be delivered to a NYSDOH ELAP-certified laboratory for analysis of VOCs by USEPA Method TO-15 with SIM and Category B deliverables.

At one sub-slab soil vapor sampling location, a duplicate sample will be obtained for quality assurance/quality control purposes by using a t-valve to simultaneously fill each of two canisters from the same sampling point. In addition, one outdoor air sample

will be obtained upwind (if discernable) of the other sample locations to determine background concentrations.

4.6 Sampling Objectives

The objective of the sampling is to complete the delineation of the on-Site soil contamination for the purpose of considering remedial alternatives. These preliminary alternatives include soil vapor extraction, or removal of soil from the area of the highest concentrations of contamination followed by soil vapor extraction to remove the residual contamination.

For the Geoprobe groundwater investigation, the purpose of the supplemental sampling is to further delineate the off-Site extent of contamination. Based on this information, a soil vapor intrusion investigation of downgradient residential structures will be confirmed. In addition, installation of permanent off-Site groundwater monitoring wells will be proposed to monitor the progress of the anticipated groundwater remediation.

Following the completion of the investigation, a Remedial Investigation Report will be prepared. Following the completion of the Remedial Investigation Report, a Feasibility Study Report will be prepared to evaluate remedial alternatives.

SECTION 5.0
QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

5.1 Decontamination Procedures

All sampling equipment will be either dedicated equipment or decontaminated prior to sampling at each location. Equipment to be decontaminated will include the Geoprobe sampling rods. Decontamination will consist of scrubbing the equipment in a bath of Liquinox and water, and then rinsing with water.

5.2 Sampling Procedures

Soil samples will be obtained by Geoprobe. The soil cores will be collected in dedicated four-foot-long acetate sleeves within the macro-cores which will be halved lengthwise to expose the soil. The length of the core will be screened with a PID and then a sample or samples may be obtained.

The groundwater samples will be obtained by inserting dedicated polyethylene tubing through the sampling rods and below the water table. A check valve will be affixed to the end of the tubing which will be agitated at the surface to produce groundwater. The samples will be collected in 40 ml vials with Teflon septa and zero headspace.

5.3 Preservation and Chain-of-Custody Procedures

The soil and groundwater samples will be placed in an ice-filled cooler for transport to the laboratory. The samples will be transferred to the laboratory within 48 hours of obtaining the samples.

A chain-of-custody form will be completed for each submission of samples to the laboratory to document the sequence of sample possession.

5.4 Laboratory Analytical Procedures

A total of 10 soil samples and 18 groundwater samples will be obtained (and additional soil vapor, indoor and outdoor air, and groundwater samples will be obtained following the analysis of the Geoprobe groundwater sampling results). The soil and groundwater samples will be analyzed for VOCs by USEPA Method 8260 with Category B deliverables. A duplicate sample, a matrix spike sample, a matrix spike duplicate, and an equipment blank sample will be obtained for the soil and groundwater samples (a separate set will be obtained for each media for each day or for every 20 primary samples obtained). A trip blank sample will also be submitted for laboratory analysis. Therefore, 28 environmental samples will be obtained along with nine quality assurance/quality control samples. A Data Usability Summary Report will be prepared for the laboratory analyses and will be included in the Supplemental Remedial Investigation Report.

5.5 Field Notes

All field notes will be recorded in a bound, weatherproof notebook with black ink. The information recorded will include the date, weather conditions, personnel present, description of sampling methods and samples, geology of samples, and other pertinent field observations.

5.6 Data Reporting

A report of all sampling procedures and observations will be prepared which will include laboratory reports and summary results tables, figures showing the sampling locations, and a comparison of the sample results to applicable standards and guidance values for each parameter. The soil sample chemical analytical results will be compared to the NYSDEC Unrestricted Use SCOs (Subpart 375-6). The groundwater chemical

analytical results will be compared to the NYSDEC Class GA groundwater standards (6 NYCRR 703.5).

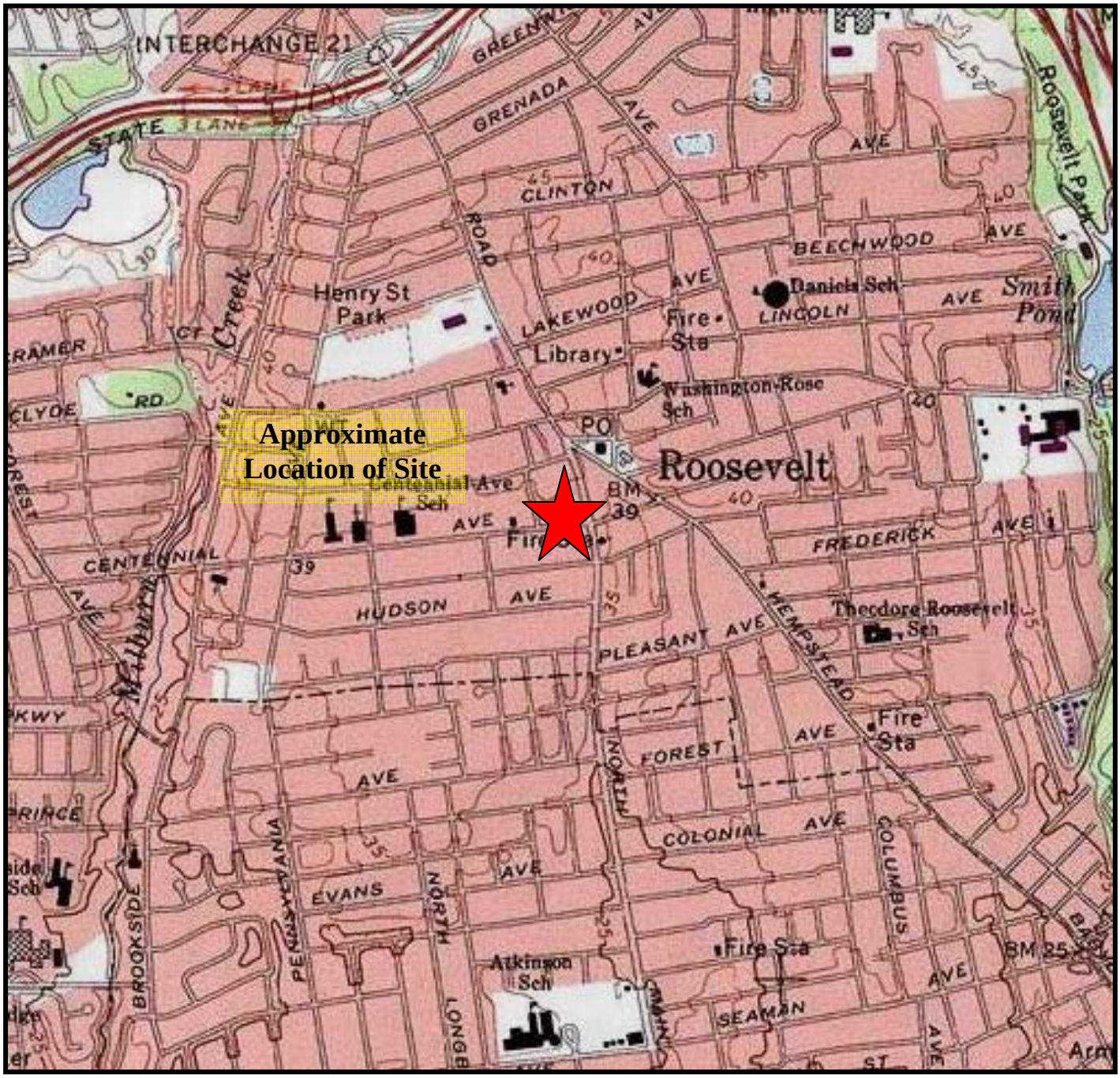
5.7 Schedule

The NYSDEC will be notified 10 days in advance of any field work so that they may be present during the activities. The estimated schedule to complete the tasks in this work plan are as follows:

Days Following NYSDEC Approval	Task
21	Commence field activities, perform ground-penetrating radar survey.
28	Obtain road opening permits for off-Site borings, perform utility markouts.
35	Complete on-Site soil sampling and off-Site groundwater sampling. Complete soil vapor intrusion investigation of north woodworking building.
65	Receive laboratory analytical results including Category B deliverables data packages**.**
80	Analyze Geoprobe groundwater data and propose locations for permanent groundwater monitoring wells.
110	Complete installation, development, and sampling of off-Site permanent groundwater monitoring wells.
140	Receive laboratory analytical results including Category B deliverables data packages**.**
170	Submit Remedial Investigation Report that will contain all information and results with the exception of those related to the soil vapor intrusion investigation which will be completed during November-December 2010 and the results will be submitted as an addendum report to the Remedial Investigation Report 60 days following the commencement of soil vapor intrusion field activities.

Days Following NYSDEC Approval *(continued)*	**Task**
260	Submit Feasibility Study Report

Figure 1
Site Location Map
20 West Centennial Avenue, Roosevelt, NY
NCTM No. 55-415-273



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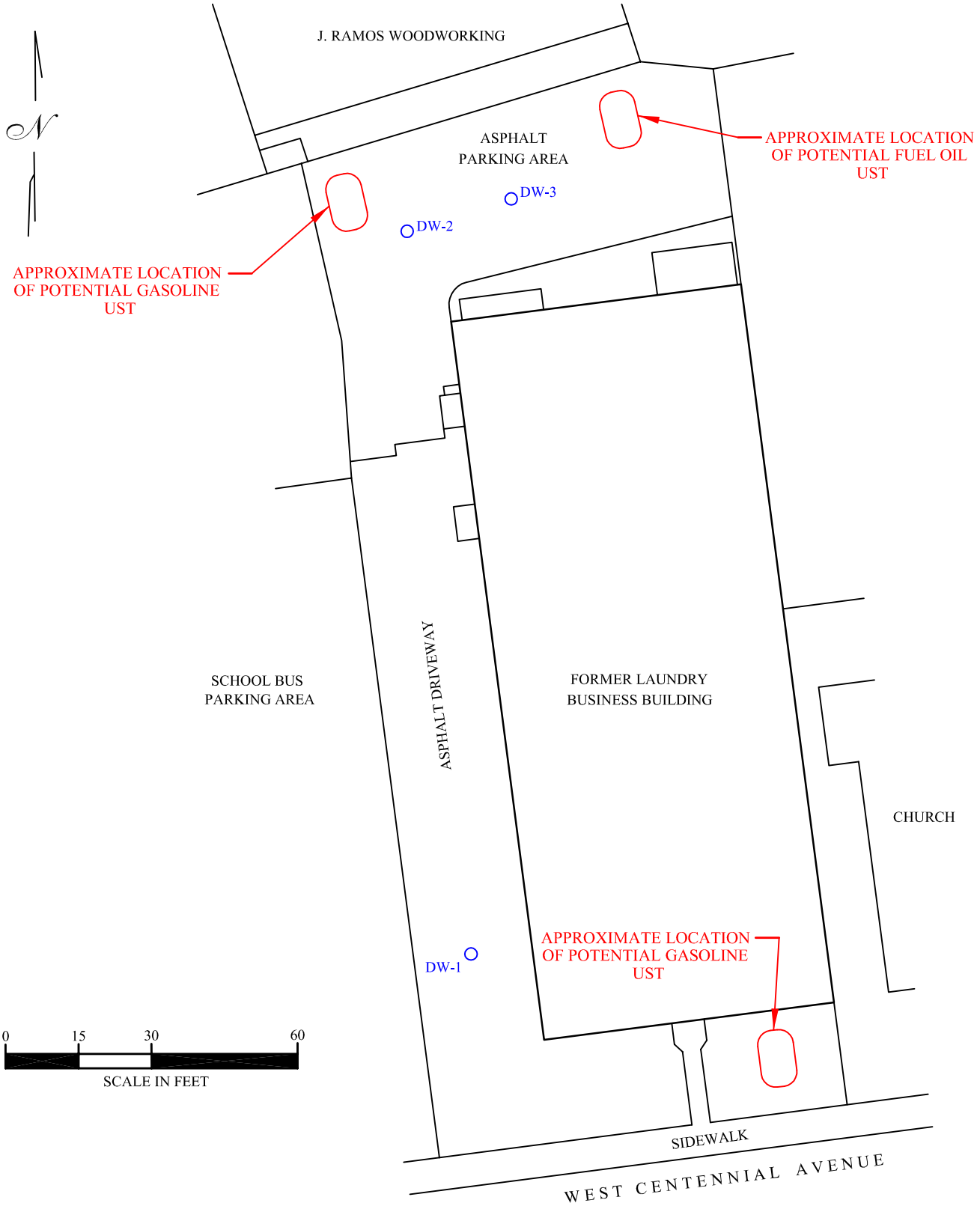

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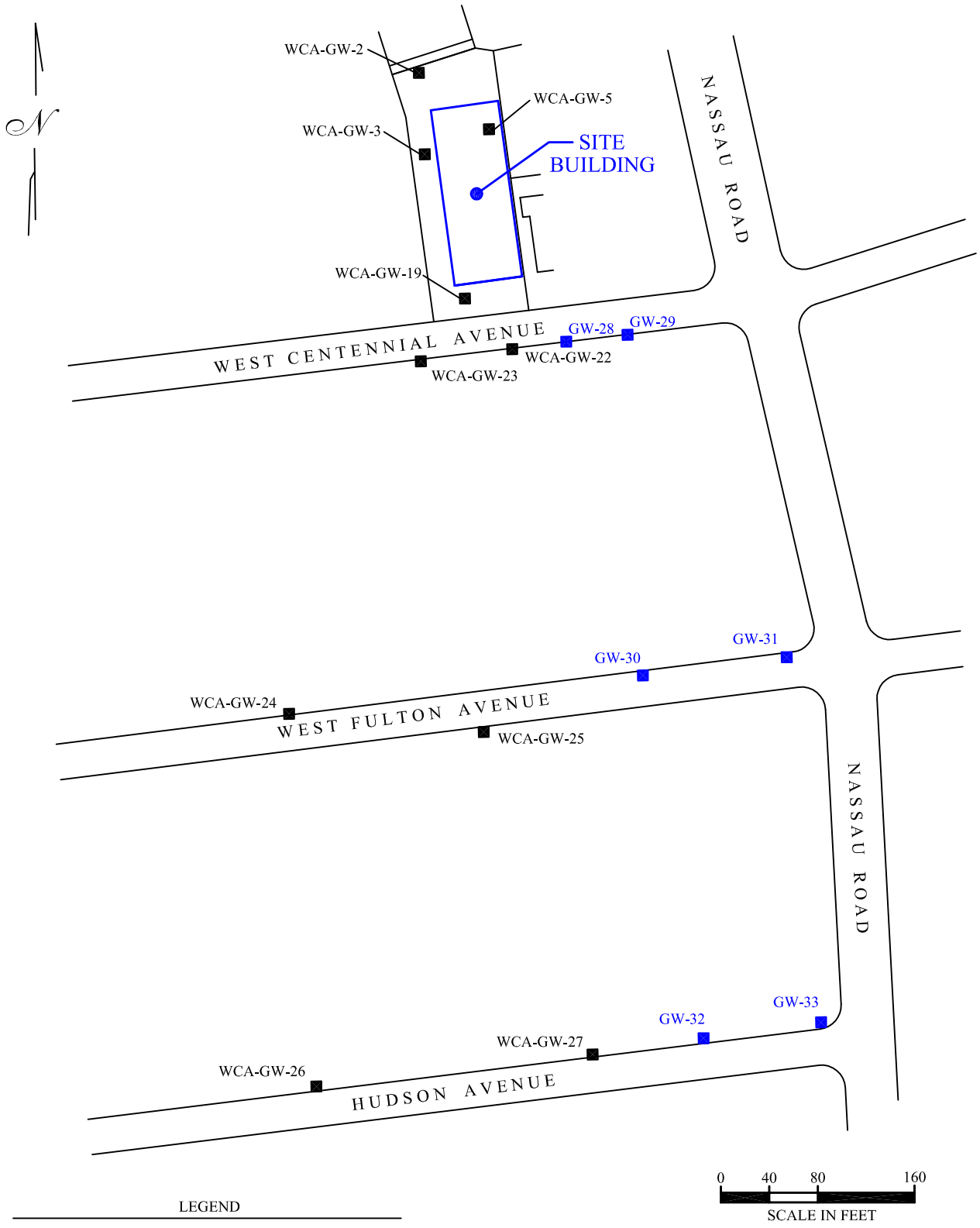
FIGURE 2
GENERAL SITE LAYOUT AND APPROXIMATE LOCATIONS OF POTENTIAL USTs AND DRYWELLS
20 WEST CENTENNIAL AVENUE
ROOSEVELT, NEW YORK



LEGEND

- GW-28 PROPOSED GEOPROBE GROUNDWATER SAMPLING LOCATION

MALCOLM PIRNIE (APRIL 2008)

- WCA-GP-20-1 SOIL BORING LOCATION
- WCA-GW-5 GROUNDWATER SAMPLE LOCATION

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FIGURE 5

PROPOSED AND PREVIOUS SUPPLEMENTAL OFF-SITE SAMPLING LOCATIONS

20 WEST CENTENNIAL AVENUE
ROOSEVELT, NEW YORK

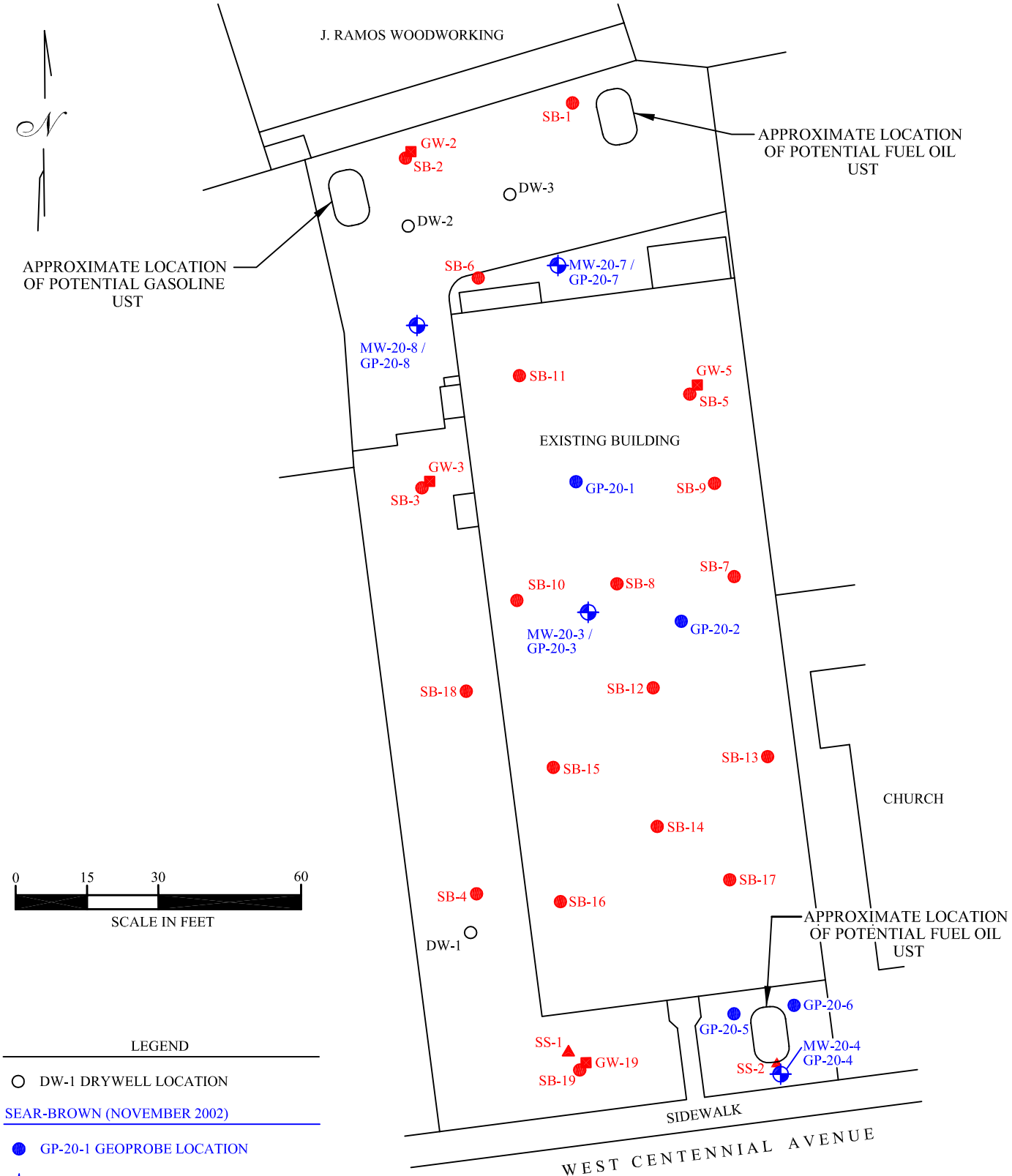

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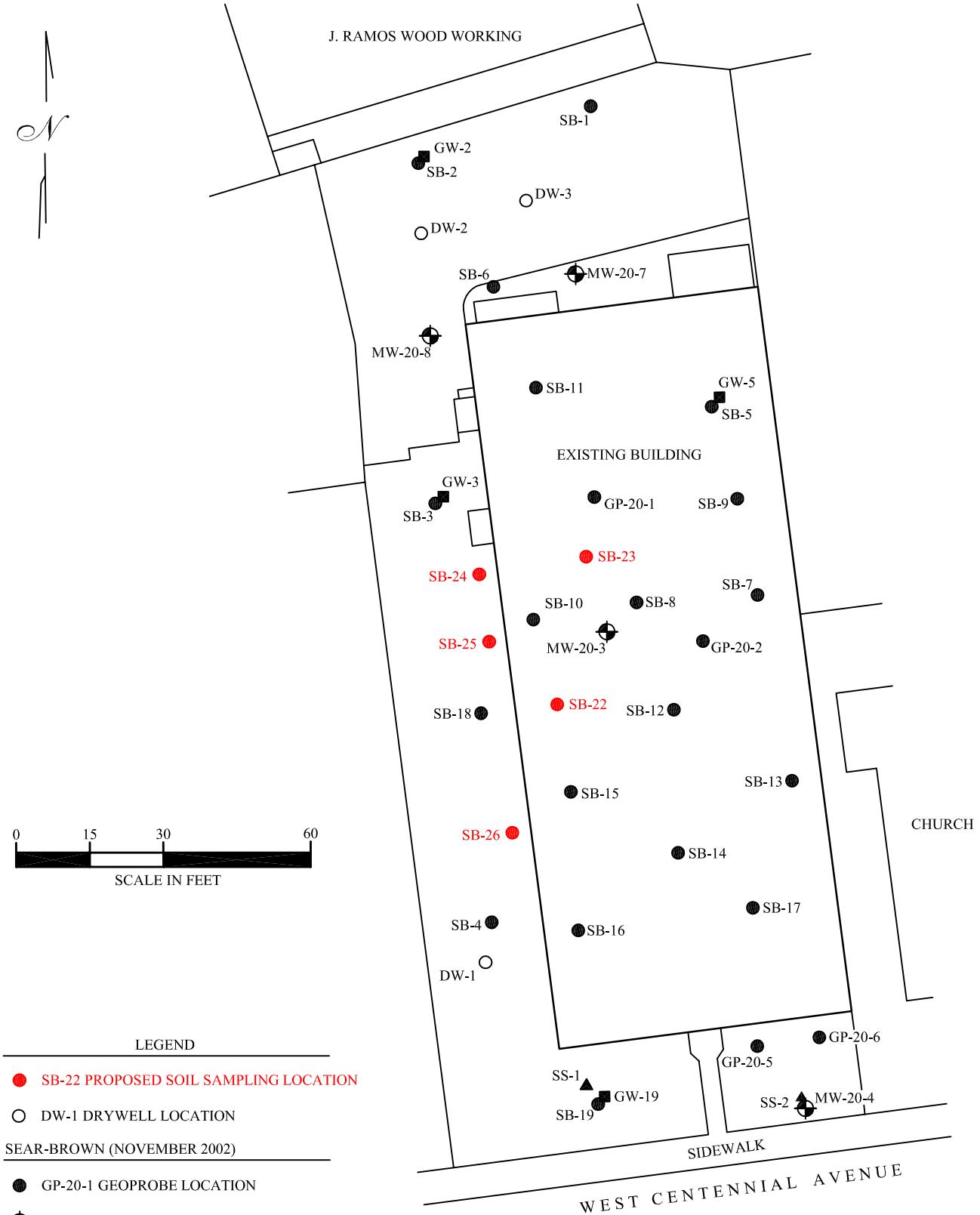
FIGURE 3
PREVIOUS ON-SITE
SAMPLING LOCATIONS
20 WEST CENTENNIAL AVENUE
ROOSEVELT, NEW YORK



LEGEND

SB-22 PROPOSED SOIL SAMPLING LOCATION

DW-1 DRYWELL LOCATION

SEAR-BROWN (NOVEMBER 2002)

GP-20-1 GEOPROBE LOCATION

MW-20-3 SOIL BORING / MONITORING WELL LOCATION

MALCOLM PIRNIE (APRIL 2008)

SB-1 SOIL BORING LOCATION

SS-1 SURFACE SOIL SAMPLE LOCATION

GW-3 GROUNDWATER SAMPLE LOCATION

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FIGURE 4
PROPOSED SUPPLEMENTAL
ON-SITE SAMPLING LOCATIONS
20 WEST CENTENNIAL AVENUE
ROOSEVELT, NEW YORK

Table 1
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, New York
November, 2002

Sample ID	GP-20-1	GP-20-2	GP-20-3	GP-20-3	GP-20-4	GP-20-7	GP-20-8	Surface	Soil Cleanup Objectives Subpart 375.6
Sample Depth	**6' – 8'**	**2' – 4'**	**0' – 2'**	**22' – 24'**	**24' – 26'**	**22' – 24'**	**22' – 24'**	**0" – 1"**	
Volatile Organic Compounds ***(in micrograms per kilogram)***									
Tetrachloroethylene	**11,500**	**14,000**	**154,000**	28.4	ND	ND	ND	NS	1,300
m & p-Xylenes	ND	ND	ND	ND	41.1	ND	ND		1,600
o-Xylene	ND	ND	ND	ND	11.9	ND	ND		1,600
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***									
SVOCs	NS	NS	NS	NS	ND	ND	ND	NS	-
Polychlorinated Biphenyls ***(in milligrams per kilogram)***									
PCBs	NS	NS	NS	NS	NS	NS	NS	ND	3.2
Metals ***(in milligrams per kilogram)***									
Arsenic	**16.6**	5.79	7.75	NS	NS	NS	NS	NS	16
Barium	32.8	55.2	34.4						820
Cadmium	0.92	1.70	1.39						7.5
Chromium	7.08	14.0	**23.2**						19*
Lead	12.7	19.2	13.7						450
Selenium	0.574	ND	ND						4

Notes:
Only detected analytes were reported.
ND = Not Detected
NS = Not Sampled
* = The standard is for hexavalent chromium only.
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Restricted Use Soil Cleanup Objectives for the Protection of Groundwater as per Subpart 375.6.

Table 2
Groundwater Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, New York
November, 2002

Sample ID	MW-20-3	MW-20-4	MW-20-7	MW-20-8	NYSDEC Groundwater Standards
Volatile Organic Compounds *(in micrograms per liter)*					
cis-1,2-Dichloroethylene	ND	ND	3.30	ND	5*
Tetrachloroethylene	**7,690**	**7,530**	**243**	**1,220**	5*
Trichloroethylene	ND	ND	**7.71**	ND	5*
1,2,4-Trimethylbenzene	ND	ND	3.60	ND	5*
m & p-Xylenes	ND	ND	2.18	ND	5*
Semi-Volatile Organic Compounds *(in micrograms per liter)*					
SVOCs	NS	ND	ND	ND	-
Metals *(in milligrams per liter)*					
Arsenic	0.023	0.009	NS	NS	0.025
Barium	0.272	0.116			1
Cadmium	**0.008**	**0.007**			0.005
Chromium	**0.230**	**0.125**			0.05
Lead	**0.037**	0.012			0.025

Notes:
Only detected anlytes are reported.
ND = Not Detected
NS = Not Sampled
* = The Principal Organic Contaminant Standard applies.
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standards.

Table 3
Sediment Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	**DW1**	**DW2**	**DW3**	**Recommended Soil Cleanup Objectives TAGM 4046**
Sample Depth ***(in feet below grade)***	**0-1**	**0-1**	**0-1**	
Volatile Organic Compounds ***(in micrograms per kilogram)***				
Cyclohexane	ND	690 J	ND	-
Isopropylbenzene	ND	40 J	320 J	-
Methylcyclohexane	ND	1,300 D	39 J	-
Toluene	ND	ND	11 J	1,500
m & p-Xylenes	ND	27 J	ND	1,200
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***				
Bis(2-Ethylhexyl)phthalate	1,300 J	9,100	18,000 J	50,000
Phenanthrene	ND	3,500	11,000 J	50,000
Fluoranthene	ND	1,300 J	ND	50,000
Pyrene	ND	1,600 J	4,900 J	50,000
Butylbenzylphthalate	ND	800 J	3,700 J	50,000
Benzo(a)anthracene	ND	**680 J**	**2,600 J**	224
Chrysene	**1,400 JB**	**830 JB**	**4,300 JB**	400
Benzo(b)fluoranthene	**1,200 J**	820 J	**2,500 J**	1,100
Benzo(k)fluoranthene	**1,300 J**	310 J	ND	1,100
Benzo(a)pyrene	ND	**430 J**	ND	61
Indeno(1,2,3-cd)pyrene	ND	320 J	ND	3,200
Benzo(g,h,i)perylene	ND	600 J	ND	50,000
Naphthalene	ND	420 J	3,100 J	13,000
2-Methylnaphthalene	ND	7,400	25,000	36,400
Fluorene	ND	ND	4,100 J	50,000
Anthracene	ND	810 J	3,000 J	50,000
1,1-Biphenol	ND	560 J	ND	-
Acenaphthene	ND	570 J	ND	50,000
Dibenzofuran	ND	**22,500 J**	ND	6,200
Di-n-butylphthalate	ND	500 J	ND	8,100

Table 3*(continued)*
Sediment Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	**DW1**	**DW2**	**DW3**	**Recommended Soil Cleanup Objectives TAGM 4046**
Sample Depth ***(in feet below grade)***	**0-1**	**0-1**	**0-1**	
Metals ***(in milligrams per kilogram)***				
Aluminum	1,680	4,820	2,810	SB
Antimony	0.641 J	2.07 J	ND	SB
Arsenic	0.641 J	1.97	0.703 J	7.5 or SB
Barium	13	42	30.9	300 or SB
Cadmium	0.332	**1.83**	**1.74**	1 or SB
Calcium	20,700	8,260	25,900	SB
Chromium	**13.7 J**	**28 J**	**23 J**	10 or SB
Cobalt	1.52	4.01	3.09	30 or SB
Copper	19.2	**486**	**52.8**	25 or SB
Iron	**6,370**	**13,700**	**17,700**	2,000 or SB
Lead	20.2	47.7	30.7	200 – 500
Magnesium	12,200 J	3,850 J	4,900 J	SB
Manganese	85.3	99.8	160	SB
Mercury	0.025	**0.149**	0.034	0.1
Nickel	5.68	**22.4**	**14.1**	13 or SB
Potassium	273	254	238	SB
Sodium	308	346	383	SB
Vanadium	10.7	18.4	8.86	150 or SB
Zinc	**104**	**304**	**221**	20 or SB

Notes:
Only detected analytes are reported.
ND = Not Detected
J = The concentration is estimated
B = The analyte was detected in the laboratory blank as well as the sample. This indicates a possible laboratory contamination of the environmental sample.
SB = Site Background
- = No Recommended Soil Cleanup Objective available.
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Recommended Soil Cleanup Objectives as per the Technical and Administrative Guidance Memorandum (TAGM) 4046.

Table 4
Stormwater Liquid Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, New York
April, 2008

Sample ID	DW2	DW3
Volatile Organic Compounds ***(in micrograms per liter)***		
Acetone	40	ND
2-Butanone	4.7 J	ND
cis-1,2-Dichloroethylene	ND	ND
Trichloroethylene	ND	ND
Toluene	ND	0.7 J
Tetrachloroethylene	ND	ND
1,2,4-Trimethylbenzene	ND	ND

Notes:
Only detected anlytes are reported.
ND = Not Detected
J = The concentration is estimated

Table 5
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	**SB-1**	**SB-2**	**SB-3**	**SB-3**	**SB-4**	**SB-4**	**Soil Cleanup Objectives Subpart 375.6**
Sample Depth ***(in feet below grade)***	**18-19**	**17–18**	**0-1**	**18-19**	**0–1**	**17–18**	
Volatile Organic Compounds ***(in micrograms per kilogram)***							
Cyclohexane	ND	ND	270 J	ND	110 J	ND	-
cis-1,2-Dichloroethylene	ND	ND	160 J	ND	ND	ND	250
Methylcyclohexane	ND	ND	4,800 D	ND	1,700 D	ND	-
Trichloroethylene	ND	ND	140 J	ND	ND	ND	470
Toluene	ND	ND	**2,300 D**	ND	**7,400 D**	ND	700
Tetrachloroethylene	ND	ND	**4,600 D**	ND	**2,000 D**	ND	1,300
Ethylbenzene	ND	ND	26 J	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	85 J	ND	27 J	ND	260
o-Xylenes	ND	ND	29 J	ND	13 J	ND	260
Styrene	ND	ND	20 J	ND	ND	ND	-
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***							
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	44 J	ND	ND	-
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000
Fluoranthene	ND	ND	ND	ND	ND	ND	100,000
Pyrene	ND	ND	ND	ND	ND	ND	100,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	-
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	500
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-1	SB-2	SB-3	SB-3	SB-4	SB-4	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**18-19**	**17–18**	**0-1**	**18-19**	**0–1**	**17–18**	
Metals *(in milligrams per kilogram)*							
Aluminum	485	411	2,400		2,000		-
Antimony	ND	ND	ND		ND		-
Arsenic	ND	ND	0.806		2.72		13
Barium	1.99 J	3.07 J	13.7		19.1		350
Beryllium	ND	ND	ND		0.027 J		7.2
Cadmium	ND	ND	0.231 J		0.167 J		2.5
Calcium	ND	26.9 J	18,300		5,420		-
Chromium	2.83 J	2.05 J	5.73 J		3.74 J		10 or SB*
Cobalt	0.965 J	0.554 J	2.34		2.03		-
Copper	1.26	1.41	12.9		10.8		50
Iron	1,730	2,490	4,790	NS	4,600	NS	-
Lead	0.765	0.742	8.98		13.4		63
Magnesium	114 J	93 J	5,270 J		2,360 J		-
Manganese	57.4	36.2	70		58.8		1,600
Mercury	ND	ND	0.016		0.04		0.18
Nickel	1.14 J	1.19 J	6.43		6.53		30
Potassium	ND	46.4 J	263		168		-
Silver	ND	ND	ND		ND		2
Sodium	79.8 J	85 J	136 J		159		-
Vanadium	1.35 J	1.45	24.2		22.3		-
Zinc	8.4	10.3	17.1		17.2		109

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-5	SB-6	SB-7	SB-7	SB-8	SB-8	Soil Cleanup Objectives Subpart 375.6
Sample Depth ***(in feet below grade)***	**18-19**	**18-19**	**2-3**	**17–18**	**1-2**	**17–18**	
Volatile Organic Compounds ***(in micrograms per kilogram)***							
Cyclohexane	ND	ND	ND	ND	ND	ND	-
cis-1,2-Dichloroethylene	ND	ND	ND	ND	49	ND	250
Methylcyclohexane	ND	ND	ND	ND	ND	ND	-
Trichloroethylene	ND	ND	ND	ND	75	ND	470
Toluene	ND	ND	ND	ND	ND	ND	700
Tetrachloroethylene	ND	ND	**2,400 D**	ND	**33,000 D**	**4,200 D**	1,300
Ethylbenzene	ND	ND	ND	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	ND	ND	ND	ND	260
o-Xylenes	ND	ND	ND	ND	ND	ND	260
Styrene	ND	ND	ND	ND	ND	ND	-
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***							
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000
Fluoranthene	ND	ND	ND	ND	ND	ND	100,000
Pyrene	ND	ND	ND	ND	ND	ND	100,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	-
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	500
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-5	SB-6	SB-7	SB-7	SB-8	SB-8	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**18-19**	**18-19**	**2-3**	**17–18**	**1-2**	**17–18**	
Metals *(in milligrams per kilogram)*							
Aluminum	NS	NS	NS	512	NS	434	-
Antimony				ND		ND	-
Arsenic				ND		ND	13
Barium				2.08 J		2 J	350
Beryllium				ND		ND	7.2
Cadmium				ND		ND	2.5
Calcium				44 J		24.6 J	-
Chromium				1.56 J		2.49 J	10 or SB*
Cobalt				0.558 J		0.417 J	-
Copper				1.3		1.24	50
Iron				1,680		1,370	-
Lead				0.803		0.572 J	63
Magnesium				116 J		103 J	-
Manganese				28.7		19.1	1,600
Mercury				ND		ND	0.18
Nickel				1.38		1.09 J	30
Potassium				78 J		72.5 J	-
Silver				ND		0.16 J	2
Sodium				89.6 J		106 J	-
Vanadium				1.3 J		1.26 J	-
Zinc				3.28		2.98	109

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-9	SB-9	SB-10	SB-10	SB-11	SB-12	Soil Cleanup Objectives Subpart 375.6
Sample Depth ***(in feet below grade)***	**1–2**	**17–18**	**1–2**	**17–18**	**17–18**	**4–5**	
Volatile Organic Compounds ***(in micrograms per kilogram)***							
Cyclohexane	ND	ND	ND	ND	ND	ND	-
cis-1,2-Dichloroethylene	38	ND	49	ND	ND	ND	250
Methylcyclohexane	ND	ND	ND	ND	ND	ND	-
Trichloroethylene	ND	ND	75	ND	ND	ND	470
Toluene	ND	ND	ND	ND	ND	ND	700
Tetrachloroethylene	640 JD	ND	**15,000 D**	ND	ND	**1,900 D**	1,300
Ethylbenzene	ND	ND	ND	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	ND	ND	ND	ND	260
o-Xylenes	ND	ND	ND	ND	ND	ND	260
Styrene	ND	ND	ND	ND	ND	ND	-
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***							
Bis(2-Ethylhexyl)phthalate	ND	ND	560	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000
Fluoranthene	ND	ND	ND	ND	ND	ND	100,000
Pyrene	ND	ND	45 J	ND	ND	ND	100,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	-
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	41 J	ND	ND	ND	500
Benzo(g,h,i)perylene	ND	ND	72 J	ND	ND	ND	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-9	SB-9	SB-10	SB-10	SB-11	SB-12	Soil Cleanup Objectives Subpart 375.6
Sample Depth ***(in feet below grade)***	**1–2**	**17–18**	**1–2**	**17–18**	**17–18**	**4–5**	
Metals ***(in milligrams per kilogram)***							
Aluminum	NS	549	NS	499	NS	NS	-
Antimony		ND		ND			-
Arsenic		1.29		0.689 J			13
Barium		2.18 J		2.46 J			350
Beryllium		ND		ND			7.2
Cadmium		ND		ND			2.5
Calcium		50.4 J		55.7 J			-
Chromium		2.21 J		1.8 J			10 or SB*
Cobalt		0.648 J		0.56 J			-
Copper		2.47		1.48			50
Iron		2,660		2,570 J			-
Lead		0.703		0.625 J			63
Magnesium		103 J		101 J			-
Manganese		35		28.5 J			1,600
Mercury		ND		ND			0.18
Nickel		1.57		1.21 J			30
Potassium		74.5 J		71.7 J			-
Silver		ND		ND			2
Sodium		112 J		84.9 J			-
Vanadium		4.9		1.69 J			-
Zinc		3.81		4.08 J			109

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-12	SB-13	SB-13	SB-14	SB-14	SB-15	Soil Cleanup Objectives Subpart 375.6
Sample Depth ***(in feet below grade)***	**17–18**	**4–5**	**15–16**	**0.5–3.5**	**17–18**	**1–2**	
Volatile Organic Compounds ***(in micrograms per kilogram)***							
Cyclohexane	ND	ND	ND	ND	ND	ND	-
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	250
Methylcyclohexane	ND	ND	ND	ND	ND	ND	-
Trichloroethylene	ND	ND	ND	ND	ND	ND	470
Toluene	ND	ND	ND	ND	ND	ND	700
Tetrachloroethylene	ND	420	1,200 D	330	ND	610 JD	1,300
Ethylbenzene	ND	ND	ND	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	ND	ND	ND	ND	260
o-Xylenes	ND	ND	ND	ND	ND	ND	260
Styrene	ND	ND	ND	ND	ND	ND	-
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***							
Bis(2-Ethylhexyl)phthalate	ND	ND	240 J	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000
Fluoranthene	ND	ND	ND	ND	ND	ND	100,000
Pyrene	ND	ND	ND	ND	ND	ND	100,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	-
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	500
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-12	SB-13	SB-13	SB-14	SB-14	SB-15	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**17–18**	**4–5**	**15–16**	**0.5–3.5**	**17–18**	**1–2**	
Metals *(in milligrams per kilogram)*							
Aluminum	607		1,960		945		-
Antimony	ND		ND		ND		-
Arsenic	ND		0.806		0.258 J		13
Barium	5.52		10.4		3.42 J		350
Beryllium	ND		ND		ND		7.2
Cadmium	ND		ND		ND		2.5
Calcium	38 J		3,740		57.3 J		-
Chromium	3.25 J		**12.3 J**		3.9 J		10 or SB*
Cobalt	0.958 J		1.66		0.64 J		-
Copper	1.41		13.9		2.15		50
Iron	1,990	NS	5,460	NS	3,830	NS	-
Lead	2.86		5.99		1.00		63
Magnesium	158 J		511 J		456 J		-
Manganese	76		130		47.8		1,600
Mercury	ND		0.008 J		ND		0.18
Nickel	1.23 J		4.20		4.65		30
Potassium	91.5 J		232		133 J		-
Silver	ND		ND		ND		2
Sodium	176		120 J		116 J		-
Vanadium	1.48 J		4.83		2.63		-
Zinc	6.38		10.5		5.54		109

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-15	SB-16	SB-16	SB-17	SB-17	SB-18	Soil Cleanup Objectives Subpart 375.6
Sample Depth ***(in feet below grade)***	**16-18**	**1–2**	**16–18**	**6–7**	**16-18**	**5–6**	
Volatile Organic Compounds ***(in micrograms per kilogram)***							
Cyclohexane	ND	ND	ND	ND	ND	ND	-
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	250
Methylcyclohexane	ND	ND	ND	ND	ND	ND	-
Trichloroethylene	ND	ND	ND	ND	ND	ND	470
Toluene	ND	ND	ND	ND	ND	ND	700
Tetrachloroethylene	ND	230	ND	16 J	ND	360	1,300
Ethylbenzene	ND	ND	ND	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	ND	ND	ND	ND	260
o-Xylenes	ND	ND	ND	ND	ND	ND	260
Styrene	ND	ND	ND	ND	ND	ND	-
Semi-Volatile Organic Compounds ***(in micrograms per kilogram)***							
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000
Fluoranthene	ND	40 J	ND	ND	ND	ND	100,000
Pyrene	ND	84 J	ND	ND	ND	ND	100,000
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	-
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000
Chrysene	ND	ND	ND	ND	ND	ND	1,000
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	500
Benzo(g,h,i)perylene	ND	61 J	ND	ND	ND	ND	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-15	SB-16	SB-16	SB-17	SB-17	SB-18	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**16-18**	**1–2**	**16–18**	**6–7**	**16-18**	**5–6**	
Metals *(in milligrams per kilogram)*							
Aluminum	863		686		869		-
Antimony	ND		ND		ND		-
Arsenic	ND		ND		0.893		13
Barium	2.73 J		2.23 J		2.5 J		350
Beryllium	ND		ND		ND		7.2
Cadmium	ND		ND		ND		2.5
Calcium	59.7 J		32 J		51.7 J		-
Chromium	2.02 J		1.83 J		2.69 J		10 or SB*
Cobalt	0.708 J		0.451 J		0.672 J		-
Copper	2.39		1.43		2.26		50
Iron	3,260	NS	1,820	NS	4,830	NS	-
Lead	0.969		0.536		1.13		63
Magnesium	208 J		149 J		189 J		-
Manganese	39.7		46.1		32.1		1,600
Mercury	ND		ND		0.08		0.18
Nickel	1.73		1.70		1.78		30
Potassium	96.8 J		78.3 J		88.6 J		-
Silver	ND		ND		0.337 J		2
Sodium	139		116 J		167		-
Vanadium	2.20		1.36		3.39		-
Zinc	5.16		4.52		3.88		109

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	SB-18	SB-19	SB-19	SS-1	SS-2	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**16.5–18.5**	**12-15**	**16-18**	**0-1**	**0-1**	
Volatile Organic Compounds *(in micrograms per kilogram)*						
Cyclohexane	ND	ND	ND	ND	ND	-
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	250
Methylcyclohexane	ND	ND	ND	ND	ND	-
Trichloroethylene	ND	ND	ND	ND	ND	470
Toluene	ND	ND	ND	ND	ND	700
Tetrachloroethylene	ND	ND	ND	47 J	23 J	1,300
Ethylbenzene	ND	ND	ND	ND	ND	1,000
m&p-Xylenes	ND	ND	ND	ND	ND	260
o-Xylenes	ND	ND	ND	ND	ND	260
Styrene	ND	ND	ND	ND	ND	-
Semi-Volatile Organic Compounds *(in micrograms per kilogram)*						
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	510 J	300 J	-
Phenanthrene	ND	ND	ND	120 J	80 J	100,000
Fluoranthene	ND	ND	ND	370 J	600 J	100,000
Pyrene	ND	ND	ND	320 J	610 J	100,000
Butylbenzylphthalate	ND	ND	ND	150 J	ND	-
Benzo(a)anthracene	ND	ND	ND	150 J	340 J	1,000
Chrysene	ND	ND	ND	220 J	410 J	1,000
Benzo(b)fluoranthene	ND	ND	ND	290 J	580 J	1,000
Benzo(k)fluoranthene	ND	ND	ND	93 J	200 J	800
Benzo(a)pyrene	ND	ND	ND	190 J	410 J	1,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	170 J	360 J	500
Benzo(g,h,i)perylene	ND	ND	ND	170 J	360 J	100,000

Table 5 *(continued)*
Soil Chemical Analytical Results
20 West Centennial Avenue
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Sample ID	SB-18	SB-19	SB-19	SS-1	SS-2	Soil Cleanup Objectives Subpart 375.6
Sample Depth *(in feet below grade)*	**16.5–18.5**	**12-15**	**16-18**	**0-1**	**0-1**	
Metals *(in milligrams per kilogram)*						
Aluminum	1,110	NS	901	6,250	6,130	-
Antimony	ND		ND	ND	ND	-
Arsenic	0.48 J		ND	10.8	5.73	13
Barium	5.33		2.99 J	41.4	25.9	350
Beryllium	ND		ND	ND	ND	7.2
Cadmium	ND		ND	0.881	0.778 J	2.5
Calcium	61 J		49.7 J	1,860	2,080	-
Chromium	3.27 J		1.52 J	**14.3 J**	**20 J**	10 or SB*
Cobalt	1.41		0.52 J	1.9	1.92	-
Copper	2.53		1.13	25.6	23.2	50
Iron	5,190		1,960	8,940	7,810	-
Lead	1.08		0.678	**145**	**103**	63
Magnesium	234 J		211 J	865 J	824 J	-
Manganese	83.1		41.1	138	111	1,600
Mercury	ND		ND	**0.219**	**0.207**	0.18
Nickel	2.74		1.5	8.42	6.73	30
Potassium	149		111 J	156 J	156 J	-
Silver	ND		ND	ND	ND	2
Sodium	125 J		82 J	144 J	185	-
Vanadium	3.97		1.79	21.6	18.1	-
Zinc	12.1		3.96	**123**	90.2	109

Notes:
Only detected analytes are reported.
ND = Not Detected
NS = Not Sampled
J = The concentration is estimated
D = The concentration was detected at a secondary dilution factor
SB = Site Background
* = The Recommended Soil Cleanup Objective from the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4046 was substituted since there is no Subpart 375.6 Soil Cleanup Objective for total chromium.
- = No Soil Cleanup Objective is available.
Bolded values indicate an exceedance of the NYSDEC Unrestricted Use Soil Cleanup Objectives Subpart 375.6 or Recommended Soil Cleanup Objective as per TAGM 4046.

Table 6
Groundwater Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	GW-2	GW-2	GW-2	GW-3	GW-3	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**20**	**40**	**57**	**20**	**37**	
Volatile Organic Compounds (in micrograms per liter)						
Acetone	ND	ND	ND	ND	ND	50
2-Butanone	ND	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	5*
Trichloroethene	ND	ND	ND	**9.8**	ND	5*
Toluene	ND	ND	ND	ND	ND	5*
Tetrachloroethene	ND	ND	ND	**280 J**	ND	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)						
SVOCs	NS	NS	NS	NS	NS	-

Sample ID	GW-3	GW-5	GW-5	GW-5	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**53**	**20**	**40**	**57**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	ND	ND	ND	50
2-Butanone	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	ND	**53**	ND	5*
Trichloroethene	ND	ND	2.8 J	ND	5*
Toluene	ND	ND	ND	ND	5*
Tetrachloroethene	ND	**18**	**15**	ND	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
SVOCs	NS	NS	NS	NS	-

Table 6 *(continued)*
Groundwater Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	GW-19	GW-19	DW3-SW	DW2-SW	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**20**	**40**	**Surface**	**Surface**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	ND	ND	40	50
2-Butanone	ND	ND	ND	4.7 J	50
cis-1,2-Dichloroethene	1.2 J	ND	ND	ND	5*
Trichloroethene	ND	ND	ND	ND	5*
Toluene	ND	ND	0.7 J	ND	5*
Tetrachloroethene	**74 J**	ND	ND	ND	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
2-Nitroaniline	ND	1.2 J	NS	NS	5*
2,6-Dinitrotoluene	ND	1.2 J	NS	NS	5*
Dibenzofuran	ND	1.2 J	NS	NS	-
2,4-Dinitrotoluene	ND	1.4 J	NS	NS	-
Phenanthrene	ND	1.8 J	NS	NS	50
Carbazole	ND	1.2 J	NS	NS	-
Bis(2-Ethylhexyl)phthalate	3.4 J	**12**	NS	NS	5*

Table 6 *(continued)*
Groundwater Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	GW-19	GW-22	GW-22	GW-22	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**50**	**25**	**35**	**50**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	ND	ND	40	50
2-Butanone	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	**31**	ND	ND	5*
Trichloroethene	ND	**11**	ND	ND	5*
Toluene	ND	ND	ND	ND	5*
Tetrachloroethene	**280 J**	**180 D**	**7.7**	**72**	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
2-Nitroaniline	ND	NS	NS	NS	5*
2,6-Dinitrotoluene	ND	NS	NS	NS	5*
Dibenzofuran	1.2 J	NS	NS	NS	-
2,4-Dinitrotoluene	1.5 J	NS	NS	NS	-
Phenanthrene	1.6 J	NS	NS	NS	50
Carbazole	1.3 J	NS	NS	NS	-
Bis(2-Ethylhexyl)phthalate	ND	NS	NS	NS	5*

Table 6 *(continued)*
Groundwater Chemical Analytical Results
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Sample ID	GW-23	GW-23	GW-23	GW-24	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**23**	**35**	**50**	**23**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	ND	ND	ND	50
2-Butanone	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	ND	ND	ND	5*
Trichloroethene	ND	ND	ND	ND	5*
Toluene	ND	ND	ND	ND	5*
Tetrachloroethene	**15**	ND	ND	ND	5*
1,2,4-Trimethylbenzene	ND	ND	ND	**5.3 J**	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
2-Nitroaniline	ND	ND	ND	ND	5*
2,6-Dinitrotoluene	ND	ND	ND	ND	5*
Dibenzofuran	ND	ND	ND	ND	-
2,4-Dinitrotoluene	ND	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	50
Carbazole	ND	ND	ND	ND	-
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	5*

Table 6 *(continued)*
Groundwater Chemical Analytical Results
20 West Centennial Avenue
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Sample ID	GW-24	GW-24	GW-25	GW-25	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**35**	**50**	**23**	**35**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	13 J	ND	ND	50
2-Butanone	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	**6.3**	ND	ND	5*
Trichloroethene	ND	ND	ND	ND	5*
Toluene	ND	ND	ND	ND	5*
Tetrachloroethene	ND	ND	2.6 J	2.6 J	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
2-Nitroaniline	ND	ND	ND	ND	5*
2,6-Dinitrotoluene	ND	ND	ND	ND	5*
Dibenzofuran	ND	ND	ND	ND	-
2,4-Dinitrotoluene	ND	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	50
Carbazole	ND	ND	ND	ND	-
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	5*

Table 6 *(continued)*
Groundwater Chemical Analytical Results
20 West Centennial Avenue
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Sample ID	GW-25	GW-26	GW-26	GW-26	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**50**	**23**	**40**	**52**	
Volatile Organic Compounds (in micrograms per liter)					
Acetone	ND	ND	ND	ND	50
2-Butanone	ND	ND	ND	ND	50
cis-1,2-Dichloroethene	ND	ND	0.76 J	**8.7**	5*
Trichloroethene	ND	ND	ND	ND	5*
Toluene	ND	ND	ND	ND	5*
Tetrachloroethene	ND	ND	ND	ND	5*
1,2,4-Trimethylbenzene	ND	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)					
2-Nitroaniline	ND	ND	ND	ND	5*
2,6-Dinitrotoluene	ND	ND	ND	ND	5*
Dibenzofuran	ND	ND	ND	ND	-
2,4-Dinitrotoluene	ND	ND	ND	ND	-
Phenanthrene	ND	ND	ND	ND	50
Carbazole	ND	ND	ND	ND	-
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	5*

Table 6 *(continued)*
Groundwater Chemical Analytical Results
20 West Centennial Avenue
Roosevelt, NY
April, 2008

Sample ID	GW-27	GW-27	GW-27	NYSDEC Groundwater Standards
Sample Depth (in feet below grade)	**26**	**40**	**52**	
Volatile Organic Compounds (in micrograms per liter)				
Acetone	ND	ND	ND	50
2-Butanone	ND	ND	ND	50
cis-1,2-Dichloroethene	2.8 J	ND	ND	5*
Trichloroethene	1.3 J	ND	ND	5*
Toluene	ND	ND	ND	5*
Tetrachloroethene	**14**	1.9 J	3.4 J	5*
1,2,4-Trimethylbenzene	ND	ND	ND	5*
Semi-Volatile Organic Compounds (in micrograms per liter)				
2-Nitroaniline	ND	ND	ND	5*
2,6-Dinitrotoluene	ND	ND	ND	5*
Dibenzofuran	ND	ND	ND	-
2,4-Dinitrotoluene	ND	ND	ND	-
Phenanthrene	ND	ND	ND	50
Carbazole	ND	ND	ND	-
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	5*

Notes:
Only detected analytes are reported.
* = The Principal Organic Contaminant Standard applies.
ND = Not Detected
NS = Not Sampled
J = The concentration is estimated
D = The concentration was detected at a secondary dilution factor
\- = No Groundwater Standard is available.
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standards.