SURFACE SOIL REMEDIATION PLAN

FOR

P.S. 178X/176X

850 Baychester Ave.
Bronx, NY 10475

NYCSCA Job No. 37249
LLW Job No. 063090
Contract No. C000011647

January 14, 2011

Prepared For:

New York City School Construction Authority
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1 INTRODUCTION

Polychlorinated biphenyls (PCBs) are man-made chemicals that were widely produced and used across the country until 1977, when U.S. production ceased. PCBs are a class of chemicals made up of more than 200 different compounds used in a variety of products including construction materials, such as caulk. PCBs may be found in the caulk of many homes, apartments, schools, hospitals, and office buildings built or renovated before 1978.

In June 2007, New York State Education Department (SED) published a protocol, developed in conjunction with the New York State Department of Health (DOH), to establish proper management of PCB-containing caulking during school building renovation projects to avoid potential health risk issues. The protocol includes evaluating buildings constructed or renovated between 1950 and 1977 that will be undergoing renovation/demolition for the presence of PCB caulk. Buildings with PCB caulk renovated after 1977 might also have residual PCB impacts in surrounding soils.

Public School 178X/176X (P.S. 178X) is located at 850 Baychester Avenue, Bronx, New York. On July 16, 2010 and August 23, 2010, TRC Engineering, Inc. (TRC), at the direction of the New York City School Construction Authority (NYCSCA) and in accordance with the U.S. Environmental Protection Agency's (EPA) approved *Remedial Investigation Plan for the New York City School Construction Authority Pilot Study To Address PCB Caulk in New York City School Buildings* dated July 9, 2010 (RIWP), assessed the condition of exterior soils at P.S. 178X and collected surface soil samples wherever soil was present within 10 feet from the school building. Soil samples were collected from the planting areas along the north, south, and east building façades.

The results of TRC's surface soil investigation indicated that analytical results of soil samples collected on the northern, eastern and southern façades of the school building had PCB concentrations above the EPA clean backfill standard (40 CFR 761.125(c)(4)(v) and 40 CFR 761.125(b)(1)(ii)) and New York State Department of Environmental Conservation (NYSDEC) PCB soil cleanup level of 1 ppm. One of these soil samples along the northern facade exceeded 50 ppm PCBs, which is the threshold for hazardous waste set by the NYSDEC under 6 NYCRR 371.4 (e). The impacted soil areas identified as exceeding 1 ppm total PCBs were temporarily covered with geotextile fabric and a 3" - 4" top layer of cedar mulch on August 25, 2010 in order to limit contact and dust exposure. These soil areas have been identified for remediation based on the results of the surface soil investigation.

Louis Berger & Assoc., P.C. (LBA), at the direction of the NYCSCA, has prepared this *Surface Soil Remediation Plan for P.S. 178X/176X*. The purpose of this plan is to address the PCB-impacted soil areas exceeding 1 ppm total PCBs as delineated from the surface soil sample PCB analytical results obtained during the July 16 and August 23, 2010 surface soil investigation conducted at this school.

2 METHODOLOGY

The following methodology utilized during the July 16, 2010 surface soil investigation was developed in consideration of the June 2007 SED protocol and in accordance with Appendix G of the RIWP.

- An Environmental Professional performs a site visit, using the SED protocol to evaluate the condition of the exterior caulk and to inspect the soil around the school (within 10 feet of the school) for visual traces of caulk. If caulk is observed, samples will be collected during the sampling event.

- An AutoCAD drawing is prepared to identify the soil sampling locations.

- Soil Sampling Procedures:

  - Soil samples shall be collected once every 20 feet, in three rows, approximately 0.5 feet, 3 feet and 8 feet from the building.

  - Soil samples shall be collected from 0 - 2 inches below the ground surface, which includes the surface of the soil and the root zone and is beneath the "vegetative layer". The "vegetative layer" is the layer above the soil surface. The "vegetative layer" does not include the soil surface and root zone.

  - In the case of P.S. 178X/176, soil samples shall also be collected from 2 – 4 inches below the existing ground surface, as a layer of topsoil has recently been placed over existing soil areas.

  - All soil samples in will be analyzed for total PCBs.

  - If any sample in the third row (8 feet from the building) contains greater than 1 ppm total PCBs, the Environmental Professional notifies the SCA for further instructions.

  - All samples are analyzed in accordance with EPA Method 8082 by a DOH Environmental Laboratory Approval Program (ELAP)-certified laboratory.

- If analytic results exceed 1 ppm total PCBs, the impacted areas will be covered with geotextile fabric and stone to limit contact or dust exposure (unless the area is already secured by a permanent fence and has good ground cover to mitigate the potential for windblown soil). *The Surface Soil Remediation Plan for P.S. 178X/176X* was developed for EPA approval to remediate impacted soils at this site.

3 FIELD INVESTIGATION

On July 16, 2010 and August 23, 2010, TRC conducted a surface soil investigation at P.S. 178X. Soil samples were collected at each of two depths. Soils samples were first taken at 0 - 2" bgs, excluding the "vegetative layer" (but including the root zone), followed by samples at 2 – 4" bgs. As part of the investigation, a total of one-hundred-and-six (106) soil samples, including six (6) duplicate samples, were collected from a total of fifty (50) exposed soil locations adjacent to the north, south, and east building façades and were analyzed for PCBs.

During the investigation, soil samples were collected using dedicated disposable plastic trowels and placed in laboratory-supplied 8-ounce glass jars with Teflon lids. Dedicated sampling equipment was used to eliminate the possibility of cross-contamination between sampling locations. All soil sampling equipment was properly disposed of with other wastes that were generated during the soil investigation.

All samples were collected, properly cooled and packaged to prevent breakage. Surface soil samples were transported under Chain-Of-Custody to a DOH ELAP-certified analytical laboratory and analyzed for total PCBs in accordance with EPA Method 8082.

A summary of the surface soil sample PCB laboratory analyses are shown in **Table 1.** The surface soil sample locations and associated PCB results are shown on **Figure 1**. Laboratory analytical reports and Chain-Of-Custody records are included as an attachment to this plan.

4 FINDINGS

On July 16, 2010 and August 23, 2010, a total of one-hundred-and-six (106) surface soil samples, including six (6) duplicate samples, were collected from a total of fifty (50) exposed soil area locations at each of two depths. Soils adjacent to the north, south, and east sides of the P.S. 178X school building were collected and analyzed for PCBs. Fourteen (14) of the fifty (50) soil sample locations showed PCB concentrations exceeding 1 ppm. One (1) sample along the north façade, sample 178-NORTH-SO-2A (0 to 2 inches bgs), exceeded 50 ppm, which is the threshold for hazardous waste set by the NYSDEC under 6 NYCRR 371.4 (e). PCB concentration analytical results ranged from 0.5 ppm to 211 ppm in sample 178-NORTH-SO-2A (0 to 2 inches bgs) and were generally higher when closer to the building. There were no visual traces of caulk found in any of the exposed soil areas during the surface soil investigation.

The impacted soil areas identified during the surface soil investigation as exceeding 1 ppm PCBs were temporarily covered with geotextile fabric and a 3" - 4" top layer of cedar mulch on August 25, 2010 in order to limit contact and dust exposure. These soil areas have been identified for remediation in this plan based on the results of the surface soil investigation.

5 CONCLUSIONS AND REMEDIATION PLAN

The results of the surface soil investigation indicated that PCB concentrations in soil at P.S. 178X exceeded 1 ppm PCBs in areas along north and south façades of the school building. Cumulatively, non-hazardous PCB-impacted soils (i.e., soils identified during the surface soil investigation as containing PCB concentrations ≥ 1 ppm and < 50 ppm) occupy an area of approximately 900 square feet. Laboratory analytical results showed that one (1) sample along the north façade exceeded 50 ppm PCBs, which is considered hazardous waste by the NYSDEC under 6 NYCRR 371.4 (e). Hazardous PCB-impacted soils (i.e., soils identified during the surface soil investigation as containing PCB concentrations ≥ 50 ppm) occupy an area of approximately 450 square feet. The hazardous and non-hazardous PCB-impacted soil areas proposed for remediation are shown in **Figure 1**. The PCB-impacted surface soils will be remediated by excavation followed by appropriate offsite disposal.

All areas will be machine excavated where feasible. Manual exaction will be used in areas that are not easily accessible or in order to minimize damage when removing soils near structures (e.g. foundations). PCB-impacted surface soil areas will be excavated to two (2) feet below ground surface (bgs). Post-excavation samples will then be collected at the base and along the centerline of the excavation approximately once every twenty (20) feet. Post-excavation sidewall samples will also be collected approximately every twenty (20) feet to determine the lateral limits of the excavation during remediation. Post-excavation sidewall samples will be collected at a depth of 0 - 2" bgs, excluding the "vegetative layer" (but including the root zone). When base post-excavation soil sample PCB analytical results are < 1 ppm, the excavation will stop at the sampled depth in the respective areas. When sidewall post-excavation soil sample PCB analytical results are < 1 ppm, the excavation will stop at the sampled lateral width in the respective areas.

If a base or sidewall post-excavation sample result is ≥ 1 ppm PCBs, an additional foot of soil will be removed in the vertical or lateral direction, respectively. After the removal of additional soils, another post-excavation sample will be collected at the new depth or lateral limit in approximately the same location as the previous sample. This procedure will be repeated, so long as excavation is feasible, until all post-excavation soil sample PCB results are < 1 ppm.

Field quality control samples will be collected at a rate of one duplicate sample for every twenty (20) collected post-excavation samples (a minimum of one for each day of sampling). Standard Chain-Of-Custody procedures will be followed. Post-excavation samples will be sent to a DOH ELAP-certified analytical laboratory and analyzed for PCBs using EPA Method 8082.

After all PCB-impacted soils are removed, excavated areas will be backfilled with environmentally clean fill material that meets the EPA clean backfill standard of < 1 ppm PCBs. The backfilled areas will be covered with approximately eight (8) inches of topsoil and then re-vegetated.

If all soils identified as containing ≥ 1 ppm PCBs cannot be removed due to structural site constraints(e.g., foundations), low permeability material meeting the requirements outlined in 40 CFR 761.61(a)(7) will be placed in the excavation and properly compacted (i.e., 10

inches of compacted environmentally clean soil or 6-inches of concrete or asphalt complying with the permeability, sieve, liquid limit and plasticity parameters in 761.75(b)(1)(ii) through (b)(1)(v)). The remaining depth of excavation will then be backfilled with environmentally clean fill material, including eight (8) inches of topsoil and the area will be re-vegetated. Any area where PCB concentrations exceed 1 ppm after excavation will be included in a deed restriction in accordance with 40 CFR 761.61(a)(8) and applicable state and local regulations.

Based on the extent of PCB-impacted soils and the excavation depth of two (2) feet, it is estimated that approximately 67 cubic yards (approximately 100 tons) of non-hazardous PCB-impacted soils and 33 cubic yards (approximately 50 tons) of hazardous PCB-impacted soils will require excavation and off-site disposal. The total estimated cost of remediation is approximately $115,000 and is expected to take 1-2 weeks to complete from contractor mobilization to site restoration. All cleanup activities are expected to be completed during the summer of 2011.

In New York State, PCB wastes are regulated by EPA and NYSDEC. NYSDEC regulates the disposal of materials with ≥ 50 ppm PCB as hazardous waste under 6 NYCRR 371.4 (e). The EPA hazardous waste regulations are not applicable to PCB-containing materials, since they are exempt under 40 CFR 261.8. However, EPA does regulate disposal of PCB wastes under 40 CFR 761.60 through 761.62 based upon the type of material and the concentration of PCBs in the material and the original source. Therefore, for managing excavated soils:

- If PCBs are present in soil from a spill or release of a material that contained ≥ 50 ppm PCBs, the excavated soil is classified as "PCB Remediation Waste", as defined in 40 CFR 761.3.

- If PCBs are present in soil at a concentration of ≥ 50 ppm PCBs, the excavated soil is classified as "hazardous waste" in New York State, in accordance with 6 NYCRR 371.4 (e).

Excavated soil with < 50 ppm PCBs will be disposed of as a PCB Remediation Waste at a licensed municipal solid waste disposal facility (with advanced EPA notification) or at a Toxic Substances Control Act (TSCA)-permitted facility, in accordance with 40 CFR 761.61(a)(5)(i)(B)(2)(ii) and (a)(5)(v)(A). Excavated soil with ≥ 50 ppm PCBs will be disposed of as a New York State Hazardous Waste and a PCB Remediation Waste at a licensed commercial hazardous waste treatment, storage and disposal (TSD) facility in accordance with 40 CFR 761.61(a)(5)(i)(B)(2)(iii).

Health and safety measures will be implemented during the proposed cleanup to protect the public, onsite workers, and the environment in accordance with applicable Federal, State, and local requirements. The health and safety measures will include, but will not be limited to, restricting access to the work area, air monitoring, dust suppression, traffic control, and the use of appropriate personal protective equipment. Any sampling and remedial equipment will be decontaminated in accordance with the requirements of 40 CFR 761.79 (e.g., double wash/rinse). Barrier plastics or equipment that are exposed to PCB-impacted soils and not decontaminated will be disposed of as PCB Remediation Waste.

6 REPORT CERTIFICATIONS

Louis Berger and Assoc., P.C. has prepared this *Surface Soil Remediation Plan for Public School 178X/176X*, located at 850 Baychester Avenue, Bronx, New York. The plan has been prepared in accordance with the NYCSCA requirements and applicable guidelines.

LOUIS BERGER & ASSOC., P.C.

Ron Weissbard
Report Manager

Ajay Kathuria, P.E.
QA/QC Officer

TABLE 1

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-EAST-SO-1A		178-EAST-SO-1B		178-EAST-SO-1C		178-EAST-SO-2A		178-EAST-SO-2B	
		Sample Location/ Distance from Building:	East/0.5'	East/0.5'	East/3'	East/3'	East/8'	East/8'	East/0.5'	East/0.5'	East/3'	East/3'
		Sample Depth (in.):	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		**9.02**	**3.84**	0.500 U	**1.49**	0.500 U	**0.610**	0.500 U	**1.11**	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		**9.02**	**3.84**	0.500 U	**1.49**	0.500 U	**0.610**	0.500 U	**1.11**	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-EAST-SO-2C			178-EAST-SO-3C		178-EAST-SO-4C		178-EAST-SO-5C		178-EAST-SO-6C	
		Sample Location/ Distance from Building:	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'	East/8'
		Sample Depth (in.):	0-2	2-4	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010 Field Dup	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-EAST-SO-7C		178-NORTH-SO-1A		178-NORTH-SO-1B		178-NORTH-SO-1C		178-NORTH-SO-2A	
		Sample Location/ Distance from Building:	East/8'	East/8'	North/0.5'	North/0.5'	North/3'	North/3'	North/8'	North/8'	North/0.5'	North/0.5'
		Sample Depth (in.):	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Aroclor 1254		**0.795**	**0.662**	**1.57**	**1.66**	0.500 U	**3.59**	0.500 U	0.500 U	**211**	**19.4**
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	5.43 U	0.548 U
	Total PCBs		**0.795**	**0.662**	**1.57**	**1.66**	0.500 U	**3.59**	0.500 U	0.500 U	**211**	**19.4**
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-NORTH-SO-2B		178-NORTH-SO-2C			178-NORTH-SO-3A		178-NORTH-SO-3B		178-NORTH-SO-3C	
		Sample Location/ Distance from Building:	North/3'	North/3'	North/8'	North/8'	North/8'	North/0.5'	North/0.5'	North/3'	North/3'	North/8'	North/8'
		Sample Depth (in.):	0-2	2-4	0-2	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010 Field Dup	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	**0.675**	0.500 U	0.500 U	0.500 U	**12.5**	**7.66**	**4.74**	**7.00**	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	**0.675**	0.500 U	0.500 U	0.500 U	**12.5**	**7.66**	**4.74**	**7.00**	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-NORTH-SO-4A		178-NORTH-SO-4B		178-NORTH-SO-4C		178-NORTH-SO-5A		178-NORTH-SO-5B	
		Sample Location/ Distance from Building:	North/0.5'	North/0.5'	North/3'	North/3'	North/8'	North/8'	North/0.5'	North/0.5'	North/3'	North/3'
		Sample Depth (in.):	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		**2.04**	**3.14**	0.500 U	**1.48**	0.500 U	0.500 U	**2.68**	**7.60**	0.500 U	**0.894**
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		**2.04**	**3.14**	0.500 U	**1.48**	0.500 U	0.500 U	**2.68**	**7.60**	0.500 U	**0.894**
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-NORTH-SO-5C			178-NORTH-SO-6A		178-NORTH-SO-6B		178-NORTH-SO-6C		178-SOUTH-SO-1C	
		Sample Location/ Distance from Building:	North/8'	North/8'	North/8'	North/0.5'	North/0.5'	North/3'	North/3'	North/8'	North/8'	South/8'	South/8'
		Sample Depth (in.):	0-2	2-4	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010 Field Dup	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U	**1.20**	0.500 U	**1.44**	0.500 U	0.500 U	**1.39**	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U	**1.20**	0.500 U	**1.44**	0.500 U	0.500 U	**1.39**	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-SOUTH-SO-1E			178-SOUTH-SO-1F		178-SOUTH-SO-2C		178-SOUTH-SO-3C		
		Sample Location/ Distance from Building:	South Side	South Side	South Side	South Side	South Side	South/8'	South/8'	South/8'	South/8'	South/8'
		Sample Depth (in.):	0-2	0-2	2-4	0-2	2-4	0-2	2-4	0-2	0-2	2-4
		Sample Date:	8/23/2010	8/23/2010 Field Dup (Note 1)	8/23/2010	8/23/2010	8/23/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010 Field Dup	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**0.572**	**0.503**	0.500 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**0.572**	**0.503**	0.500 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Note 1: This sample, identified as 178-S-1D(0-2) on the chain of custody, is a duplicate of 178-SOUTH-SO-1E(0-2).

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-WEST-SO-1A		178-WEST-SO-1B		178-WEST-SO-1C		178-WEST-SO-2A		178-WEST-SO-2B	
		Sample Location/ Distance from Building:	West/0.5'	West/0.5'	West/3'	West/3'	West/8'	West/8'	West/0.5'	West/0.5'	West/3'	West/3'
		Sample Depth (in.):	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Note 1: This sample, identified as 178-S-1D(0-2) on the chain of custody, is a duplicate of 178-SOUTH-SO-1E(0-2).

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-WEST-SO-2C			178-WEST-SO-3C		178-WEST-SO-4C		178-WEST-SO-5C		178-WEST-SO-6C	
		Sample Location/ Distance from Building:	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'	West/8'
		Sample Depth (in.):	0-2	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010 Field Dup	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Note 1: This sample, identified as 178-S-1D(0-2) on the chain of custody, is a duplicate of 178-SOUTH-SO-1E(0-2).

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-WEST-SO-7A		178-WEST-SO-7B		178-WEST-SO-7C		178-WEST-SO-8A	
		Sample Location/ Distance from Building:	West/0.5'	West/0.5'	West/3'	West/3'	West/8'	West/8'	West/0.5'	West/0.5'
		Sample Depth (in.):	0-2	2-4	0-2	2-4	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.556 U	0.500 U	0.500 U	0.500 U	0.559 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1	1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Note 1: This sample, identified as 178-S-1D(0-2) on the chain of custody, is a duplicate of 178-SOUTH-SO-1E(0-2).

Table 1
Summary of Analytical Results for Soil Samples -- July 2010
School 178X
Bronx, New York

Analysis	Analyte	Sample ID:	178-WEST-SO-8B		178-WEST-SO-8C	
		Sample Location/ Distance from Building:	West/3'	West/3'	West/8'	West/8'
		Sample Depth (in.):	0-2	2-4	0-2	2-4
		Sample Date:	7/16/2010	7/16/2010	7/16/2010	7/16/2010
PCBs (mg/kg)	Aroclor 1016		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1221		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1232		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1242		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1248		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1254		0.500 U	0.500 U	0.500 U	0.500 U
	Aroclor 1260		0.500 U	0.500 U	0.500 U	0.500 U
	Total PCBs		0.500 U	0.500 U	0.500 U	0.500 U
	Guidance Value (Total PCBs)		1	1	1	1

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

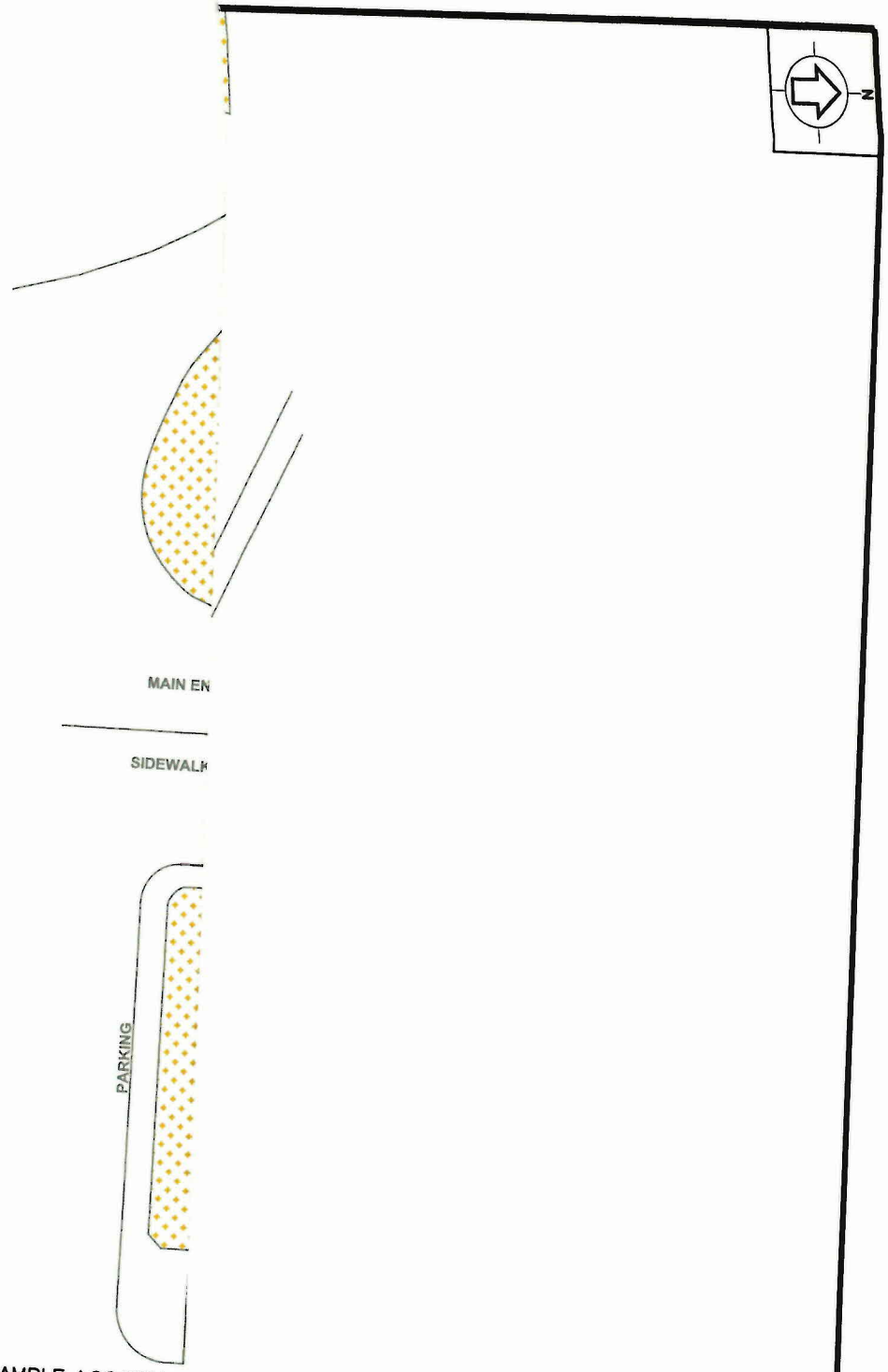
Values shown in Bold and shaded type exceed the listed Guidance Value.

PCBs - Polychlorinated Biphenyls.

* - EPA's clean backfill standard and New York State Department of Environment Conservation (NYSDEC) PCB Soil Cleanup Level of 1 ppm based on NYSDEC CP-51 (Soil Cleanup Guidance) Policy dated October 21, 2010.

Note 1: This sample, identified as 178-S-1D(0-2) on the chain of custody, is a duplicate of 178-SOUTH-SO-1E(0-2).

FIGURE 1



LEGEND

- SURFACE SOIL INVESTIGATION SAMPLE LOCATION
- SURFACE SOIL INVESTIGATION SAMPLE LOCATION
- SURFACE SOIL INVESTIGATION SAMPLE LOCATION
- 01A REPRESENTS SURFACE SOIL INVESTIGATION SAMP
- ND NON–DETECTION FOR PCB'S
- (0.35) PCB CONCENTRATION (PPM) < 1PPM
- (1.4) PCB CONCENTRATION (PPM) ≥ 1PPM BUT <50PI
- (211) PCB CONCENTRATION (PPM) ≥ 50PPM
- CHAIN–LINK FENCE (TO REMAIN)
- SOIL AREA
- SOIL AREA TO BE EXCAVATED AS PER REMEDIATI WASTE – TOTAL AREA APPROXIMATELY 900 SQ.
- SOIL AREA TO BE EXCAVATED AS PER REMEDIATI TOTAL AREA APPROXIMATELY 450 SQ. FT.

Louis Berger & Assoc., P.C.

PCB SURFACE SOIL INVESTIGATION SAMPLE ANALYTICAL RESULTS, LOCATION, AND PROPOSED EXCAVATION PLAN

NYCSCA – PS178X/176X
850 BAYCHESTER AVENUE
BRONX, NY 10475

0' 8' 16' 24' 32' 40'
SCALE 1" = 40'

Date: 01/14/11 | FIGURE 1

M:\NYCCAD\CADDTEMP–2011\NYCSCA – 2011\178X_176\FIG. 1 .dwg Jan 13, 2011

LABORATORY ANALYTICAL REPORTS