CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
New York, New York

ECHO AVENUE STATE SUPERFUND SITE
SUMMARY REPORT

June 2007

HDR | LMS
One Blue Hill Plaza
Pearl River, New York 10965

Project No. 115-190

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NEW YORK STATE SUPERFUND PROGRAM SUMMARY REPORT FOR THE ECHO AVENUE SITE IN NEW ROCHELLE, NEW YORK

1.0 EXECUTIVE SUMMARY

In response to a request by the New York State Department of Environmental Conservation ("NYSDEC") and New York State Department of Health ("NYSDOH"), Consolidated Edison of New York, Inc. ("Con Edison") has prepared this Report to provide a summary of the various phases of NYSDEC-approved investigation and interim remedial measures ("IRM") that have been completed since 1992 for the Echo Avenue State Superfund Site (Site #3-60-016) pursuant to NYSDEC Administrative Order on Consent Index No. W3-05131-91-02 ("Consent Order"). As specified by the NYSDEC and NYSDOH, this Report includes a compilation of the following information for the Echo Avenue Superfund Site ("Site") intended to facilitate their evaluation of whether the Site should remain listed in the New York State Registry of Inactive Hazardous Waste Disposal Sites ("Registry") as a Class 2a site:

- Scope of the NYSDEC-approved IRMs that have been completed for the Site;
- Remedial objectives of the completed NYSDEC-approved IRMs and the rationale for those objectives;
- Site areas for which remediation has not been conducted; and
- A summary of current Site conditions, including the concentration and distribution of contaminants remaining on and adjacent to the Site.

The Site is located at 78 Echo Avenue in New Rochelle, Westchester County, New York (Figure 1-1). It is bordered to the north by Echo Bay, an estuary of the Long Island Sound. It is bordered to the east and south by residential properties, to the southwest by Echo Avenue, and to the west by a former commercial fuel oil terminal (Sentinel Fuel Oil Company) that is now operated as a storage yard for landscaping equipment and supplies (Figure 1-2).

The Site was originally owned by several Con Edison predecessor companies, including the Westchester Lighting Company, which operated a power plant on the Site and an outdoor transformer yard used for the distribution of the electricity generated by the plant. Con Edison acquired the Site in 1951, when the Westchester Lighting Company was merged with and into Con Edison. Con Edison operated an electrical distribution substation at the Site until 1981,

Map source:
USGS 7.5-minute quadrangle map,
Mt. Vernon, NY, 1966, photorevised 1979.

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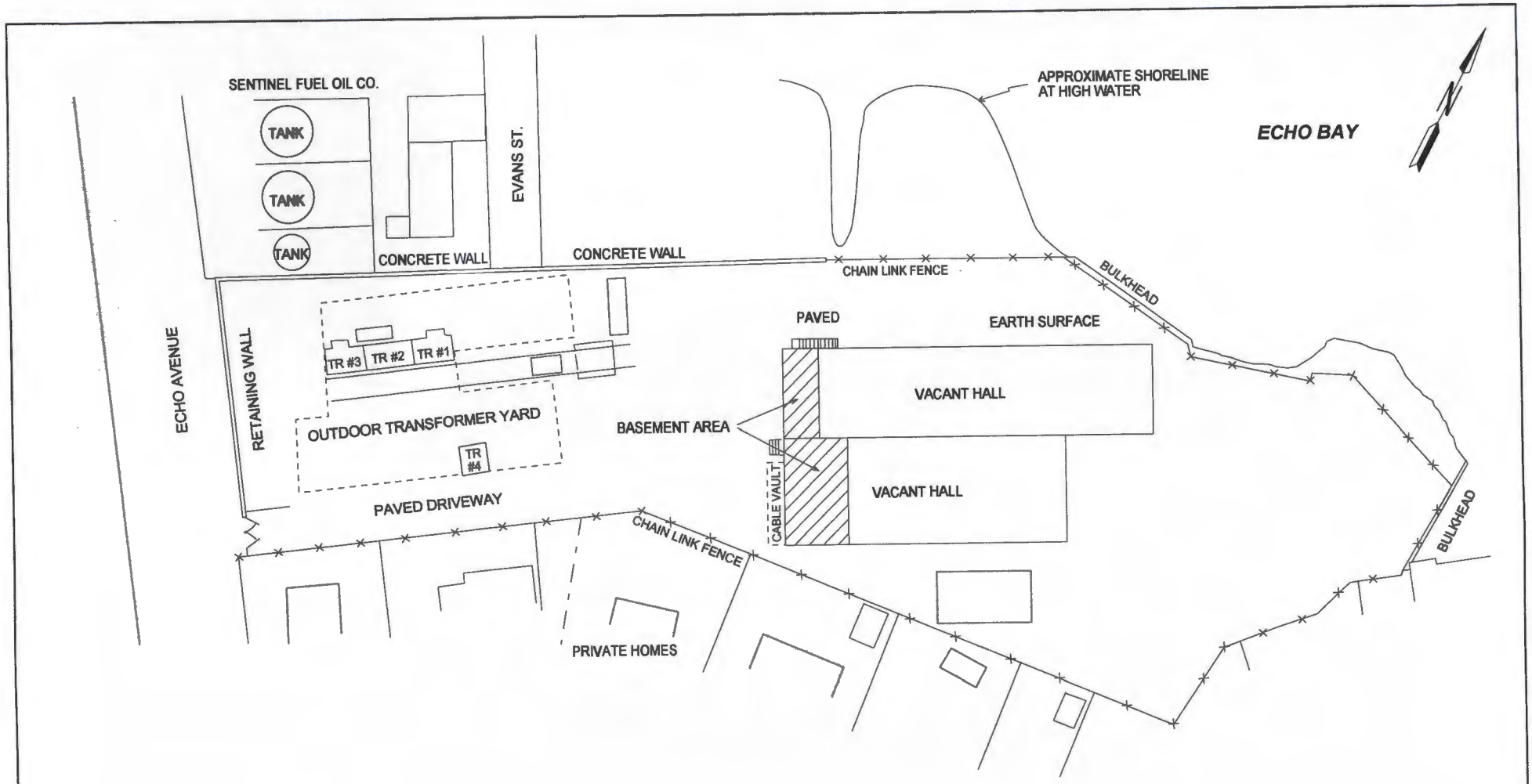
Figure 1-1

Site Location

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York



0 80 160 ft

SCALE
1 in. = 80 ft

Figure 1-2*

Site Sketch

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

*Figure 1-2 from June 2001 Remediation Report

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when the substation was retired. The Site has not been used for utility or other operations since then.[1]

In January 1988, after receiving reports from Con Edison that it had been investigating and cleaning up polychlorinated biphenyl ("PCB") contamination at the Site, the NYSDEC included the Site on the Registry as a Class 2a site - a temporary classification assigned to sites with confirmed hazardous waste contamination, but with inadequate information regarding associated environmental and/or human health impacts to be assigned to another Registry classification. On June 15, 1992, the NYSDEC and Con Edison entered into the Order on Consent which obligated Con Edison to conduct a Phase II investigation for the Site pursuant to an NYSDEC-approved work plan. The Consent Order also allowed Con Edison to implement NYSDEC-approved IRMs for the Site under NYSDEC oversight.

The Phase II investigation required under the Consent Order was completed by HDR|LMS [formerly Lawler, Matusky & Skelly Engineers] in 1993. Additional samples were collected on the Site at the request of the NYSDEC in 1995. The results of the Phase II investigation and additional sampling indicated the presence of PCBs in soil above cleanup objectives on the Site. In 1996, Con Edison elected to remediate portions of the Site as an IRM pursuant to work plans approved by the NYSDEC, as permitted by the Consent Order.

The IRMs were conducted in several phases from 1996 until 2004 on various areas of the Site, in the adjacent mudflat area of Echo Bay, and in the backyards of adjoining residential properties. As indicated in the following table, during the 12-year period in which the NYSDEC-approved investigation activities and IRMs for the Site were conducted the remedial objectives for the Site changed.

[1] In 1986, Con Edison and the City of New Rochelle entered into a contract under which Con Edison agreed to sell and the City of New Rochelle agreed to buy the Site after Con Edison had completed sufficient remediation for the Site for it to be used for residential purposes. Title to the Site has not yet been conveyed to the City of New Rochelle. Con Edison and the City of New Rochelle are presently discussing modifications that may be made to the contract before ownership of the Site is transferred to the City of New Rochelle.

MEDIA	DATES	PARAMETER	REMEDIAL OBJECTIVE
On-Site Soil & Sediment	February 1992 to February 1993	PCBs	≤10 mg/kg
		TCL organics	None
		TAL inorganics	Background concentrations from J. Dragun, The Soil Chemistry of Hazardous Materials
	October 1993 to present	PCBs	≤1 mg/kg for soils ≤2 ft deep; ≤10 mg/kg for soils >2 ft deep
		2,3,7,8-Dioxin	<1.0 µg/kg
	January 1994 to present	TCL organics	NYSDEC TAGM 4046
		TAL inorganics	NYSDEC TAGM 4046
Concrete and Other Solid Surfaces	February 1992 to February 1993	PCBs	≤10 µg/100 cm^2 in wipe samples
	October 1993 to present	PCBs	≤1 µg/100 cm^2 in wipe samples
Mudflat Sediments	July 1996 to 2003	PCBs	≤5 mg/kg
	2003 to present	PCBs	≤1 mg/kg
Groundwater	February 1992 to present	PCBs	Class GA Groundwater Standards
		TCL organics	Class GA Groundwater Standards
		TAL inorganics	Class GA Groundwater Standards
Surface Water	February 1992 to present	PCBs	Class SB Surface Water Standards
		TCL organics	Class SB Surface Water Standards
		TAL inorganics	Class SB Surface Water Standards

Two reports were prepared by HDR|LMS that documented the cleanup of the site, the June 2001 Remediation Report and the July 2003 Remediation Report Addendum. In 2003, Con Edison retained TRC Environmental Corporation ("TRC") to conduct the remediation of the mudflat area of Echo Bay; this work was completed in 2004 and reported on by TRC in the February 2005 Remedial Action Report. During all remediation work, NYSDEC provided regulatory oversight of the cleanup activities and directed Con Edison as to on whether additional cleanup or excavation work was required.

Based on the results of post-remedial confirmatory sampling that was conducted as part of the NYSDEC-approved IRMs and the results of the NYSDEC-approved investigation for Site areas for which IRMs were not implemented, there are no PCBs on Site, in the Echo Bay mudflat areas, or

adjoining off-Site residential properties that exceed the cleanup objectives specified by the NYSDEC for the Site. These cleanup objectives are ≤ 1 mg/kg PCBs for soils ≤ two ft deep, ≤ 10 mg/kg PCBs for soils deeper than two feet, and ≤ 1 mg/kg PCBs for sediment. The cleanup objectives for PCBs in soil are consistent with the recommended soil cleanup objectives ("RSCOs") specified in NYSDEC ***Technical and Administrative Guidance Memorandum 4046: Determination of Soil Cleanup Objectives and Cleanup Levels*** ("TAGM 4046") published on January 24, 1994.

Based on the same data, there are no known on-Site lead concentrations that exceed the TAGM 4046 RSCO of <500 mg/kg of lead in soils in urban areas. However, there were sporadic exceedances of the TAGM RSCOs for antimony, arsenic, beryllium, cadmium, copper, chromium, nickel, thallium, and zinc throughout the Site.

Several semi-volatile organic compounds ("SVOCs"), primarily polycyclic aromatic hydrocarbons ("PAHs"), are also present above the TAGM 4046 RSCOs on the Site. Where contaminants other than PCBs or lead were found above the TAGM 4046 guidelines, NYSDEC did not request additional remediation during the IRMs and allowed the areas excavated as part of the IRMs to be backfilled with clean fill. Several metals, including arsenic, cadmium, chromium, iron, manganese, magnesium, and sodium, are present in the Site's groundwater at concentrations that exceed NYSDEC Class GA groundwater standards. However, the groundwater regime at the Site is tidally influenced and some of the elevated concentrations of metals appear to be attributable to saltwater intrusion from the Echo Bay. All monitoring wells on the Site were either destroyed during the implementation of the NYSDEC-approved IRMs or abandoned with the NYSDEC's consent.

After the electric distribution substation on the Site was retired in 1981, Con Edison subsequently decommissioned that facility and razed various aboveground structures on the Site. A number of subsurface structures remain on the Site as summarized below:

- Substation building basement and basement storage room. In 1995 these rooms were backfilled with construction debris and rubble from the floors above them.
- Substation building sub-slab structures. These include a tunnel in the former North Hall of the building and other structures in the building's former North and South Halls. Cindery fill material present in the North Hall tunnel was removed from the tunnel and the tunnel was backfilled in 2000.
- Tunnel between substation and office building. The tunnel was cleaned and backfilled in 1998.
- Office building foundation wall. The office building's foundation slab was removed in 1995, but the foundation walls were left in place. Reports for prior work conducted at the Site by Con Edison indicate that there was an extension on the western end of the office building. Consequently, the foundation walls may extend out further than shown on Con Edison's available drawings for the office building.

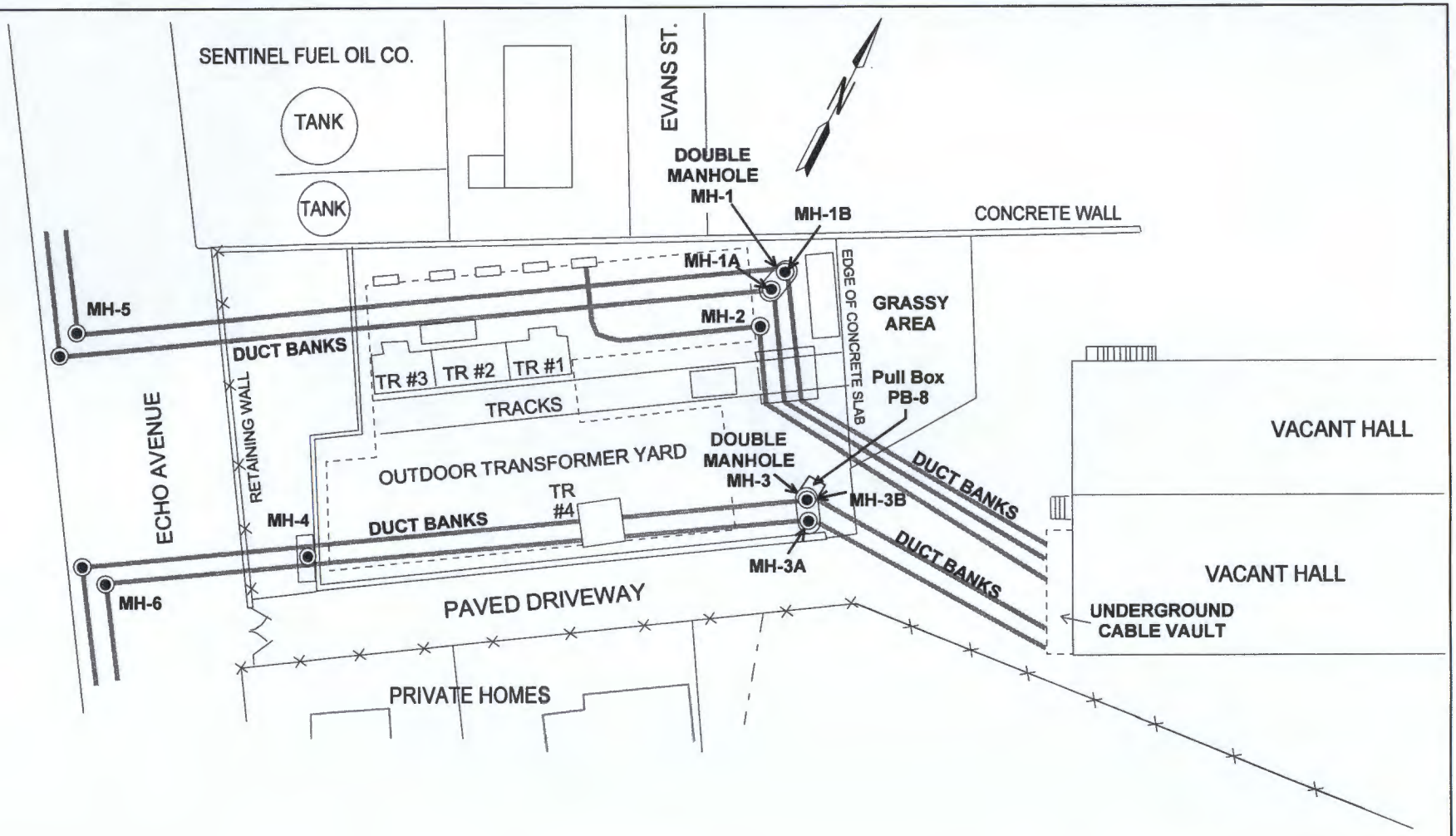
- EASP-06. This sump was sampled and backfilled in 1998.
- CB-04 and CB-06. Catch basin CB-04 is located in the center of the former South Hall. Catch basin CB-06 is located along the north side of the former North Hall slab in the northeast corner area. A concrete meter vault is located along the outside of the foundation wall in the northwest corner area of the North Hall. These structures were not removed during the building slab removal conducted in 1999.
- Concrete drainpipe from the former CB-13 location and the tile drainpipe along Echo Bay.
- Four concrete pedestals in the area immediately adjacent to the backyard of the neighboring V. Lockwood residential property. An old insurance map from 1931 that shows the site when it was a coal-fired generating plant indicates that a 50,000 gal water tank was at this location. This map also shows a number of other areas where there could still be some structures below grade that were not encountered during the environmental investigations and remediation activities conducted at the site. There is a possibility that some of these structures and possibly other structures still remain below grade on site.
- The duct banks between the manholes on Echo Avenue and the concrete retaining wall on the western end of the site were not removed. The duct banks were cleaned and plugged on both ends and manhole MH-4 was completely filled with concrete (see Figure 1-3).

The remainder of this Report is organized as follows: Section 2.0 provides additional background and Site history; Section 3.0 identifies the remedial objectives for the Site and their evolution over time; Section 4.0 summarizes the remedial activities conducted for the Site; Section 5.0 documents the known distribution of residual contaminants on the Site; and Section 6.0 provides the summary and conclusions of the Report.

2.0 BACKGROUND

Con Edison voluntarily collected samples and cleaned up portions of the Site from 1984 to 1987. All samples were analyzed for PCBs and the results reported to the NYSDEC. In January 1988, the NYSDEC listed the Site on the Registry as a Class 2A site (Site #3-60-016). This classification is normally assigned to sites that have known contamination, but that have inadequate and/or insufficient data regarding associated human health and/or environmental impacts for inclusion in any other Registry classification. NYSDEC requested that Con Edison collect additional samples on the Site, and between 1988 and 1989 a scope of work for the additional investigation was prepared by Con Edison and submitted to the NYSDEC.

In 1990, Con Edison retained HDR|LMS to perform a Phase II investigation of the Site. HDR|LMS modified Con Edison's initial draft work plan to ensure that it conformed to NYSDEC guidelines for Phase II investigations. The revised draft work plan was submitted to the NYSDEC in 1992, and included the collection of wipe samples from the Site's substation slab and walls, concrete core samples from the Site's transformer yard moats, and sediment and soil samples from throughout the



0 80 160 ft

SCALE IN FEET

Figure 1-3*

Location of Electrical Manholes and Deep Pull Box in Transformer Yard

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

*Figure 6-22 from June 2001 Remediation Report

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Site. All such samples were to be analyzed for PCBs. In addition, selected soil samples, groundwater samples from the on-Site monitoring wells, and surface water samples from Echo Bay were to be analyzed for target compound list ("TCL") organics and target analyte list ("TAL") inorganics.

On June 15, 1992, Con Edison and the NYSDEC entered into Administrative Order on Consent Index # W3-05131-91-02 ("Consent Order") which required Con Edison to implement a NYSDEC-approved Phase II investigation for the Site (Ref. 1, Appendix A of this Report). The Consent Order approved the HDR/LMS work plan as the work plan for the Phase II investigation (Ref. 2, Appendix A of this Report). The Consent Order also allowed Con Edison to implement NYSDEC-approved IRMs for the Site under NYSDEC oversight.

The Phase II investigation for the Site was conducted during 1992, and a report entitled ***Phase II Investigation at Echo Avenue Site*** ("Phase II Report") was prepared in February 1993 (Ref. 3, Appendix A of this document). The report included the results of the sampling and remediation that Con Edison had conducted at the Site between 1984 to 1987, and the sampling results of the 1992 Phase II investigation.

The following summarizes the relevant findings and conclusions of the Site's Phase II Investigation:

- On-Site soils were found to contain low levels of PAHs, naphthalene and like substances, chlorinated pesticides, lead, mercury, antimony, arsenic, copper, cadmium, and zinc. HDR|LMS concluded that the PAH contamination was most likely associated with coal tars, asphalt, and fuel products, the naphthalene and lead contamination was probably associated with diesel fuel or other fuels, and the pesticides found were most likely a result of their use for termite and other insect control. The metals appeared to be surficial contamination and possibly attributable to fill materials used at the Site or other Site activities.

- PCBs were found in soil at low levels throughout the Site. With one exception, PCB concentrations in soil generally ranged from less than 1 mg/kg to less than 10 mg/kg. PCBs at a concentration of greater than 10 mg/kg were found in soil samples collected from a compost pile. With this one exception, all soil samples were found to contain PCB concentrations less than the United States Environmental Protection Agency's ("EPA") PCB Spill Clean-up Level of 10 mg/kg for restricted access facilities.

- PCBs were not detected in groundwater. However, arsenic, cadmium, chromium, iron, manganese, magnesium, and sodium were present in groundwater samples from the Site at concentrations that exceeded NYSDEC Class GA groundwater standards. Beryllium was present at concentrations that exceeded its NYSDEC guidance value. The arsenic, beryllium, cadmium, chromium, iron, and manganese exceedances were believed to be attributable to particulate matter suspended in the groundwater samples. The elevated

magnesium and sodium levels were believed to be attributable to salt water intrusion from the adjacent Echo Bay.

- No PCBs were found in the Echo Bay surface water samples. Metals were detected above NYSDEC Class SB surface water standards, but at fairly low levels.
- Sediment in the drainage pipes on the Site and in Echo Bay contained levels of PCBs of less than 1 mg/kg.
- Sediment in manhole MH-3 (see Figure 1-3) on the Site contained PCBs at concentrations over 10 mg/kg of PCBs in the north side of the manhole.
- Stained concrete areas in the Site's outdoor transformer yard had low concentrations of PCBs, with most of the results at less than 1 mg/kg. Two samples were above 1 mg/kg but were less than 10 mg/kg.
- Except for scattered small areas on the floor in the two vacant halls of the former substation building, for which wipe sample results confirmed PCB concentrations that exceeded the EPA Spill Clean-up Guidance Level of 10 $\mu g/100\ cm^2$, on-Site structures were clean as evidenced by wipe samples.

3.0 REMEDIAL OBJECTIVES

The NYSDEC-approved investigation and IRMs for the Site were conducted in phases at various times between 1992 and 2004. Over the course of this period, the remedial objectives and cleanup guidelines for the Site changed. This section of the report covers the evolution of these objectives and how they affected the various stages of the investigations and remedial work. Section 4.0 presents a chronological history of the actual remediation work conducted on the Site.

The Phase II investigation report covered the initial sampling and investigation work conducted by HDR|LMS in 1992. The Phase II Report referenced the EPA PCB Spill Cleanup Policy of 10 mg/kg for soils and 10 $\mu g/100\ cm^2$ for wipe samples of solid surfaces as the clean up levels for PCBs. At the time, there were no definitive cleanup objectives for sediments, or concrete cores. The cleanup levels for groundwater samples were the NYSDEC Class GA groundwater standards. The NYSDEC surface water Class SB standards (saline surface waters) were used as the clean up objective for surface water samples from Echo Bay.

On October 19, 1993, the NYSDEC commented on the Phase II investigation, indicating that the appropriate PCB cleanup levels for Site soils were $\leq$1 mg/kg for soils $\leq$2 ft deep and $\leq$10 mg/kg for soils over 2 ft deep. For solid surfaces, the NYSDEC indicated that the appropriate cleanup criterion was $\leq$1 $\mu g/100\ cm^2$, as evidenced by wipe sampling. These cleanup levels were developed by the NYSDOH for PCB spills near residential areas (Ref. 4, Appendix A of this Report). The PCB cleanup levels for soils and cleanup levels for the other TCL and TAL

compounds in soils were later published as RSCOs in the NYSDEC's TAGM 4046 guidance document which was issued on January 24, 1994 (Ref. 5, Appendix A).

In its October 19, 1993 comment letter, NYSDEC also requested that Con Edison collect and analyze samples for polychlorinated dibenzo-p-dioxins ("PCDDs") and polychlorinated dibenzofurans ("PCDFs"). These samples were to be collected on the Site in the vicinity of the area where a fire occurred in the transformer yard in 1981. The specified detection limits for these constituents were to be below the NYSDEC cleanup criteria of 1.0 µg/kg for 2,3,7,8-TCDD equivalents (Ref. 4, Appendix A of this Report). A meeting was held on February 15, 1994, among Con Edison, NYSDOH, and NYSDEC at which the need for the sampling for these compounds was eliminated based on information that Con Edison provided on the PCB concentration of the transformer that burnt (Ref. 6, Appendix A of this Report). Con Edison provided the requisite documentation to the NYSDEC in a letter dated March 17, 2007. In the letter, Con Edison confirmed that the concentration of PCBs in the transformer that had burned (12000 KVA transformer Serial No. 3195692 located in Bank No. 2) was 69 mg/kg. This level of PCBs was believed to be too low to cause concern for the formation of PCDDs and PCDFs as combustion by-products (Ref. 7, Appendix A of this Report).

Subsequently, NYSDEC requested Con Edison to conduct additional sampling to delineate further the extent of the on-Site PCB contamination. HDR|LMS prepared three additional work plans to conduct the requested additional sampling. These plans were prepared and approved by the NYSDEC in 1995, the field work was conducted in 1995, and the results were reported to the NYSDEC in April 1996 (Refs.. 8, 9, 10, and 11, Appendix A of this Report).

The additional sampling included the collection of samples from the soil and sediment in the mudflat area of the adjacent Echo Bay, delineation soil sampling in four on-Site areas, collection of three additional sediment samples from Echo Bay, collection of water samples from on-Site drain pipes, collection of sediment and water samples from an on-Site sump pit, collection of concrete chip samples from the basement of the Site's former substation building, resampling in areas where sediment core samples were collected during 1992, sampling of the sediment in Echo Bay just below the discharge structure of a Site drain pipe that emptied into Echo Bay, and the collection of sediment from several locations on Site. Consistent with NYSDEC's request and the NYSDEC-approved work plans, these samples were analyzed for PCBs, but not other TAL and TCL constituents.

In addition to the investigation field work undertaken at the Site, in July and August 1995 Con Edison demolished the Site's substation building down to the building's floor slab, backfilled the basement in the western portion of the substation building with the building demolition rubble

(after collection and analysis of the concrete chip samples), demolished the office building on the Site, and removed the above ground structures of the Site's transformer yard.

In 1996, NYSDEC advised Con Edison that the PCB clean-up level to be achieved in the Echo Bay mudflat area was ≤5 mg/kg (Ref. 12, Appendix A of this Report). Because the results of the additional sampling conducted during 1996 indicated that the sediment in one area of Echo Bay did not meet the ≤5 mg/kg PCB cleanup criterion level and selected areas on the Site did not meet the PCB soil and solid surface cleanup levels specified by the NYSDEC and NYSDOH in October 1993, Con Edison elected to remediate these areas as an IRM. HDR|LMS prepared a detailed remediation work plan (***Additional Sampling and Remediation Work Plan***) in July 1996 [the "July 1996 Work Plan" (Ref. 13, Appendix A of this Report)] that was approved by the NYSDEC in August 1996. The July 1996 Work Plan included remediation of the PCB contamination in on-Site soils, off-Site residential soils, sediments, and on concrete surfaces, as well as mudflat sediment. The approved work plan specified that samples would be collected for analyses for TCL organics, TAL inorganics, resource conservation and recovery act ("RCRA") parameters, and total petroleum hydrocarbons ("TPH") in the event that a potential underground tank located near the concrete wall separating the Site from Echo Bay was confirmed. HDR|LMS did not find an underground tank at the reported location. No other contaminants found on the Site during the previous investigations required remediation. Remedial objectives for PCBs were set by the NYSDEC as follows:

- For soils and on-site sediment: ≤1 mg/kg PCBs for soils ≤2 ft deep and ≤10 mg/kg for soils greater than 2 ft deep.
- For mudflat sediment in Echo Bay: all sediment ≤5 mg/kg.

The remediation work contained in the July 1996 Work Plan was initiated in November 1997, and essentially completed in June 1998. In May 1998, NYSDEC requested that Con Edison collect soil samples beneath the substation slab and transformer yard slab. In response to this request, Con Edison decided to remove the slabs and the associated structures in their entirety and then sample and, if necessary, remediate the underlying soils (the original approved remediation plan called for the slabs to be cleaned and then left in place). In May 1998, Con Edison submitted to the NYSDEC a ***Sampling/Remedial Work Plan for Transformer Yard Slab and Substation Building Slab*** [the "May 1998 Work Plan" (Ref. 14, Appendix A of this Report)]. The May 1998 Work Plan included remediation for PCBs only. Subsequently, the NYSDEC requested that if visually contaminated soils were observed beneath the transformer yard slab, samples would be collected and analyzed for TCL organics and TAL inorganics and compared to the RSCOs in TAGM 4046. The NYSDEC approved the revised May 1998 Work Plan in May 1999.

The work specified in the revised May 1998 Work plan was initiated in August 1999. The substation slab removal and sampling of soils was completed in January 2000 and removal of the transformer slab and excavation of PCB-contaminated soils above cleanup objectives were completed in November 2000.

One of the samples collected from the transformer yard moat drain during the original remediation (January 1998) work was analyzed for the full TCL and TAL compounds at the NYSDEC's request and showed elevated levels of cadmium, chromium, lead, and zinc when compared to either typical site background concentrations or the RSCOs in TAGM 4046. Site background concentrations for the eastern USA or New York State are provided in TAGM 4046 for various metals. Therefore, the NYSDEC requested that the area be excavated until the metals levels were reduced to acceptable levels. Con Edison submitted a letter to NYSDEC in August 1999 that described the proposed sampling plan for metals in this area (Ref. 15, Appendix A of this Report). Sampling and excavation were conducted in October 1999. An X-ray Fluorescence ("XRF") analyzer was used for the metals analysis on Site with selected samples sent to an off-site laboratory for confirmation. The results indicated elevated levels of the metals of concern. Con Edison conducted an additional investigation that led to the conclusion that the metals found were associated with the cindery fill material present immediately below the transformer yard slab.

The results of the metals investigation were transmitted to NYSDEC. The NYSDOH responded with a letter stating that the high levels of lead were of concern and that, if Con Edison did not remediate the hot spots to levels of less than 500 mg/kg., Con Edison would either have to pave over the area of the transformer yard or cover it with two feet of clean fill and execute and record a deed restriction for the Site property (Ref. 16, Appendix A of this Report). NYSDEC agreed with NYSDOH's comments. Con Edison elected to remove the cindery fill material, so that all remaining lead concentrations would be less than 500 mg/kg. Therefore, the Site cleanup objective for lead was established as 500 mg/kg.

The cinder layer removal was initiated in February 2000, and halted in March 2000, when oily water and soils were encountered. A series of test pits were completed in the area in order to investigate the potential source(s) of the oil. Based on the results of the test pit investigation, Con Edison elected to halt all remediation work until a new work plan could be developed.

An additional work plan entitled ***Additional Remediation Work Plan for Transformer Yard of Con Edison's Echo Avenue Site, New Rochelle, New York*** [the "June 2001 Work Plan" (Ref. 17, Appendix A of this Report)] was prepared in June 2001. The work included the removal of the remaining cinder layer and the removal of the duct banks in the transformer yard. The cleanup objective for the cinder layer removal was 500 mg/kg for lead and $\leq$1 mg/kg for soils $\leq$2 ft deep and $\leq$10 mg/kg for soil >2 ft deep for PCBs.

The results of the remediation conducted from 1996 to 2000 were summarized in a report entitled ***Echo Avenue Site Remediation Report*** dated June 2001 ["the June 2001 Remediation Report" (Ref. 18, Appendix A of this document)].

In October 2001, Con Edison submitted a separate proposed IRM work plan entitled ***Remediation Proposal for Fuel-Oil Contaminated Soil in Con Edison's Echo Avenue Site Transformer Yard*** (the "October 2001 Work Plan") for the fuel oil-contaminated area that was found during the test pit investigation in the northwestern corner of the transformer yard (Ref. 19, Appendix A of this Report). The work included in that plan called for the excavation of the visually contaminated soil that had been detected in that portion of the Site and the collection and analysis of five post-excavation confirmatory samples from the excavation for TCL volatile organic compounds ("VOCs") and TCL semi-volatile organic compounds ("SVOCs"). The work was completed in May 2002 after receipt of approval of the work plan by NYSDEC.

The field work specified in the June 2001 Work Plan was initiated in April 2002 and completed in August 2002. In August 2002, Con Edison elected to conduct additional IRM work on the Site. The scope of this additional work was summarized in a work plan entitled ***Additional On-Site Work*** (the "October 2002 Work Plan") that was submitted to NYSDEC in October 2002 (Ref. 20, Appendix A of this Report). The proposed additional work included:

- the removal of the concrete pedestals in the Site's transformer yard;
- removal of all additional structures, including the electrical manholes and a pullbox in the Site's transformer yard;
- excavation of all soil down to a depth of six feet in the Site's transformer yard;
- removal of all paper-insulated lead cable ("PILC") between the Site's transformer yard and cable vault;
- removal of additional duct runs between the electrical manholes and cable vault and between the cable vault and the tunnel on the Site;
- excavation and removal of the cable vault;
- collection of groundwater samples from the remaining on-site monitoring wells and analysis for TCL organics and TAL inorganics; and
- abandonment of the wells after NYSDEC reviewed the groundwater data.

Con Edison elected to start the work in August 2002, because the remediation contractor was already on site. NYSDEC subsequently approved the work plan in November 2002. The work was completed in May 2003.

With the exception of the groundwater samples taken from monitoring wells, PCBs were the only parameter analyzed for as part of the post-remedial confirmation sampling conducted under the October 2002 work plan.

There were only two monitoring wells remaining that could still be sampled on the Site after the IRM work was completed. These wells were sampled on August 7, 2002 and analyzed for TCL organics and TAL inorganics plus cyanide. The NYSDEC Class GA standards were used as the remedial objectives for groundwater.

The IRM work conducted on the Site from 2002 to 2003 was summarized in a report dated July 2003 entitled ***Echo Avenue Site Remediation Report Addendum*** [the "July 2003 Remediation Report Addendum" (Ref. 21, Appendix A of this Report)].

As stated previously, all PCBs in the mudflat area of Echo Bay with a concentration greater than 5 mg/kg were removed in 1998 and the results reported in the June 2001 Remediation Report. Subsequently, at a meeting held in August 2001, NYSDEC requested that Con Edison remove the PCB-contaminated sediments in the mudflat area of Echo Bay that contained more than 1 mg/kg PCBs. Con Edison retained TRC in 2003 to conduct the mudflat remediation project.

TRC prepared a ***Remedial Action Work Plan for the Echo Avenue Project New Rochelle, New York*** ("RAWP") in May 2003 (Ref. 22, Appendix A of this Report) that described the proposed remediation plan and included a pre-design sampling program for the mudflat area. The RAWP identified four areas of concern ("AOC") that required excavation to meet the 1.0 mg/kg PCB cleanup objective. The RAWP was approved by the NYSDEC in June 2003.

The mudflat remediation work was conducted in November and December 2003 and March and April 2004 and reported on in a document prepared by TRC entitled ***Remedial Action Report for the Echo Avenue Project, New Rochelle, New York*** ("RAR") dated February 2005 (Ref. 23, Appendix A of this Report)

In summary the remedial objectives for the Site developed over time as the investigation/IRM project proceeded. The table on the following page summarizes the objectives for the different time periods:

MEDIA	DATES	PARAMETER	VALUE
On-Site Soil & Sediment	February 1992 to February 1993	PCBs	≤10 mg/kg
		TCL organics	None
		TAL inorganics	Background concentrations from J. Dragun, The Soil Chemistry of Hazardous Materials
	October 1993 to present	PCBs	≤1 mg/kg for soils ≤2 ft deep; ≤10 mg/kg for soils >2 ft deep
		2,3,7,8-Dioxin	<1.0 µg/kg
	January 1994 to present	TCL organics	NYSDEC TAGM 4046
		TAL inorganics	NYSDEC TAGM 4046
Concrete and Other Solid Surfaces	February 1992 to February 1993	PCBs	≤10 µg/100 cm^2 in wipe samples
	Octobr 1993 to present	PCBs	≤1 µg/100 cm^2 in wipe samples
Mudflat Sediments	July 1996 to 2003	PCBs	≤5 mg/kg
	2003 to present	PCBs	≤1 mg/kg
Groundwater	February 1992 to present	PCBs	Class GA Groundwater Standards
		TCL organics	Class GA Groundwater Standards
		TAL inorganics	Class GA Groundwater Standards
Surface Water	February 1992 to present	PCBs	Class SB Surface Water Standards
		TCL organics	Class SB Surface Water Standards
		TAL inorganics	Class SB Surface Water Standards

4.0 SUMMARY OF REMEDIAL ACTIVITIES

This section summarizes the chronological history of the IRM activities conducted for the Echo Avenue Site.

4.1 1984 to 1987

From 1984 to 1987, Con Edison conducted voluntary cleanup activities at the Site without NYSDEC oversight. These activities consisted of the: removal of shallow soil from several on-Site locations; cleaning cable ducts ; pressure washing of the Site substation building's basement

floor, transformer yard moat drains, concrete slab of transformer yard, manholes and cable vault; and removal of oil or oily material from structures around the Site. Details of the entire sampling and cleanup efforts voluntarily conducted by Con Edison during this time period are provided in the Phase II Report (Ref. 3, Appendix A of this Report).

4.2 **1996 to 1998**

A pre-remediation investigation was conducted in October and November 1996 to delineate the extent of contamination at selected areas on the Site. Con Edison retained OHM Remediation Services Corporation ("OHM") to complete the IRM activities specified in the July 1996 Work Plan. The actual remediation work was initiated in November 1997. These activities included the excavation and disposal of soil from four areas on the Site and four adjacent residential properties, the excavation and disposal of sediment from the mudflat area, cleaning and plugging of the duct banks, sampling and either backfilling or removing the manholes in the transformer yard, removing the cable vault, backfilling of the underground tunnel, and removing or backfilling of sumps on the Site. Prior to the implementation of IRM activities on adjacent residential properties, additional samples were collected to further delineate the extent of contamination. HDR|LMS provided environmental oversight, collected all samples, reviewed the data and recommended if additional clean-up was required, and documented the remediation undertaken in detail. All samples were analyzed for PCBs with the following cleanup objectives:

- $\leq$1 mg/kg for soils $\leq$ 2 ft deep; $\leq$10 mg/kg for soils >2 ft deep
- $\leq$5 mg/kg for mudflat sediments

To accelerate the determination of whether or not cleanup objectives were met, a mobile laboratory was used to quickly analyze the samples for PCBs. HDR|LMS retained Severn Trent Laboratories ("STL") to conduct these on-site analyses. HDR|LMS also retained H2M Labs to analyze split samples to confirm both the mobile laboratory data and confirm that clean-up levels had been achieved. The IRM activities specified in the July 1996 Work Plan were completed in 1998.

At five locations (see Figure 6-3 in Section 6.0) during the course of the on-Site excavation work, oily soil or soil with a fuel-oil like odor were noted. For these locations NYSDEC requested that a sample be collected and analyzed for TCL organics and TAL inorganics. The RSCOs in TAGM 4046 were used to compare the results from these samples. With the exception of metals, for all other compounds, only compounds that were detected in the samples are provided on the tables.

Descriptions of the five locations, sampling results, and remediation performed, if any, is summarized below:

- **WTD-01**. This sample was collected as part of the soil removal conducted in the backyard of 34 Sutton Manor Road along the fence line adjacent to the Site. The sample was collected near a valve from a pipe that formerly connected to a 50,000 gal service water tank that no longer existed on the Con Edison property. Attached Table 4-1, originally Table 6-3 from the June 2001 Remediation Report, shows two SVOCs, benzo(a)anthracene and benzo(a)pyrene ("BaP"), and three metals, mercury, nickel, and zinc, above the RSCOs in TAGM 4046. A fingerprint analysis determined that the oil was similar to dielectric fluid. Since additional pits dug around the area showed no evidence of oily soil, no additional soil was excavated. After the results were reviewed by NYSDEC on-site personnel, the contractor was instructed in the field by NYSDEC to backfill the area with certified clean backfill and topsoil.

- **E-A-25.** This sample was collected as part of the EADEC-E on-Site soil remediation. The sample was collected along the concrete wall. The results, provided in attached Table 4-2, originally Table 6-4 from the June 2001 Remediation Report, showed two VOCs in the sample, acetone and methylene chloride, one SVOC, BaP, and two metals, mercury and zinc, above the RSCOs. Acetone and methylene chloride are not considered representative of Site conditions as they were also found in the field blank indicative of a laboratory contamination problem. A fingerprint analysis determined that the oil was similar to dielectric fluid. After the results were reviewed by NYSDEC on-site personnel, the contractor was instructed in the field by NYSDEC to backfill the area with certified clean backfill and topsoil.

- **TYSS-05.** This sample was collected near a concrete pedestal from an area in the transformer yard where the concrete slab did not cover the soil. The sample results as contained in attached Table 4-3, formerly Table 6-5 of the June 2001 Remediation Report, indicated one VOC, methylene chloride and one metal, zinc, above the RSCOs in TAGM 4046. Methylene chloride is not considered a Site contaminant; it was detected in the field blank, indicative of a laboratory problem. A fingerprint analysis determined that the oil was similar to dielectric fluid. All structures and soil down to six ft in the transformer yard were subsequently removed as part of the 2002 remediation.

- **TYMD-01.** This sample was collected in the area of the transformer yard moat drain. The sample results on Table 4-4, originally Table 6-8 of the June 2001 Remediation Report, showed one VOC, methylene chloride, and five metals, arsenic, cadmium, copper, lead, and zinc, above the RSCOs in TAGM 4046. Methylene chloride is not considered a site contaminant as it was also detected in the field blank, indicative of a laboratory problem. The area was subsequently remediated as part of the transformer yard remediation conducted from 1999 to 2002.

- **CVDP-02, CVDP-04, CVDP-05, and CVDP-06.** These samples were collected as part of the cable vault drainpipe excavation. CVDP-02 was the original sample collected from the soil beneath the drainpipe after its removal. It had nine SVOCs, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, BaP, and indeno(1,2,3-c,d)pyrene, and one metal, zinc, above the RSCOs in TAGM 4046. A fingerprint analysis determined that the oil was similar to dielectric fluid. The SVOC contamination at this location and other locations on the site may have been associated with the fill material on the site; however, the levels of SVOCs

TABLE 4-1 (1 of 1)

Originally Table 6-3 (June 2001 Remediation Report)

WTD-01 SOIL DATA SUMMARY

ADJACENT RESIDENTIAL PROPERTY

V. Lockwood (March 1998)

PARAMETER	WTD-01[a]	WTD-01[c]	EAFB-04 (µg/l)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)					
Methylene chloride	ND	♦	4 b j	0.1	NA
Acetone	ND	♦	5 b j	0.2	NA
2-Butanone	ND	♦	1 j	0.3	NA
SEMIVOLATILE ORGANICS (mg/kg)					
Fluoranthene	1.32	♦	ND	50.0 ***	NA
Pyrene	0.50	♦	ND	50.0 ***	NA
Benzo(a)anthracene	**0.29**	♦	ND	0.224 or MDL	NA
Chrysene	0.27	♦	ND	0.4	NA
bis(2-Ethylhexyl)phthalate	0.15	♦	1 b j	50.0 ***	NA
Benzo(b)fluoranthene	0.36	♦	ND	1.1	NA
Benzo(a)pyrene	**0.31**	♦	ND	0.061 or MDL	NA
Indeno(1,2,3-c,d)pyrene	0.20	♦	ND	3.2	NA
Benzo(g,h,i)perylene	0.21	♦	ND	50.0 ***	NA
PESTICIDES/PCBs (mg/kg)					
Aroclor 1254	ND	ND	ND	1.0/10*	NA
Aroclor 1260	ND	ND	ND	1.0/10*	NA
METALS (mg/kg)					
Aluminum	9,510	♦	53 B	SB	33,000
Antimony	ND	♦	ND	SB	0.6 - 10 (n)
Arsenic	7.4	♦	ND	7.5 or SB	3.0 - 12.0 æ
Barium	53	♦	2.6 B	300 or SB	15 - 600
Beryllium	0.48	♦	0.10 B	0.16 or SB	0 - 1.75
Cadmium	0.85	♦	ND	1 or SB	0.1 - 1.0
Calcium	1,720	♦	109 B	SB	130 - 35,000 æ
Chromium	20	♦	ND	10 or SB	1.5 - 40.0 æ
Cobalt	6.7	♦	ND	30 or SB	2.5 - 60.0 æ
Copper	30	♦	ND	25 or SB	1.0 - 50.0
Iron	9,190	♦	85 B	2,000 or SB	2,000 - 550,000
Lead	60	♦	3.5	SB**	4.0 - 61 or 200 - 500**
Magnesium	2,480	♦	16 B	SB	100 - 5,000
Manganese	102	♦	1.5 B	SB	50 - 5,000
Mercury	**0.34**	♦	ND	0.1	0.001 - 0.2
Nickel	**31**	♦	ND	13 or SB	0.5 - 25
Potassium	495	♦	15 B	SB	8,500 - 43,000 æ
Selenium	3.5	♦	ND	2 or SB	0.1 - 3.9
Silver	ND	♦	ND	SB	0.1 - 5.0 (n)
Sodium	ND	♦	ND	SB	6,000 - 8,000
Thallium	ND	♦	ND	SB	0.1 - 0.8 (q)
Vanadium	23	♦	ND	150 or SB	1.0 - 300
Zinc	**88**	♦	7.6 B	20 or SB	9.0 - 50
Cyanide	ND	♦	ND	****	N/A

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
*** - As per TAGM #4046, Total VOCs < 10 ppm., total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
a - Sample analyzed by Environmental Testing Laboratories, Inc.
c - Sample analyzed by Severn Trent Laboratories, Inc.
b - Found in associated blanks.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowan, H.J., Environmental Chemistry of the Elements.
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
ND - Not detected at analytical detection limit.
SB - Site background.
FB - Field blank

TABLE 4-2 (1 of 1)

Originally Table 6-4 (June 2001 Remediation Report)

E-A-25 SOIL DATA SUMMARY
EADEC-E AREA
(January 1998)

PARAMETER	E-A-25	RE E-A-25	DL E-A-25	E-A-25[c]	EAFB-04 (µg/l)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)							
Methylene chloride	**1.1 b e**	♦	0.049 b j	♦	4 b j	0.1	NA
Acetone	**0.22 b**	♦	**0.39 b**	♦	5 b j	0.2	NA
2-Butanone	0.062	♦	0.17	♦	1 j	0.3	NA
4-Methyl-2-pentanone	0.25 b	♦	ND	♦	ND	1.0	NA
SEMIVOLATILE ORGANICS (mg/kg)							
Naphthalene	0.95	0.71	♦	♦	ND	13	NA
2-Methylnaphthalene	2.9	2.6	♦	♦	ND	36.4	NA
Acenaphthene	0.50	0.51	♦	♦	ND	41	NA
Dibenzofuran	0.45 j	0.41 j	♦	♦	ND	6.2	NA
Fluorene	1.0	0.89	♦	♦	ND	50.0***	NA
Phenanthrene	2.0	1.7	♦	♦	ND	50.0***	NA
Anthracene	0.36 j	0.33 j	♦	♦	ND	50.0***	NA
Fluoranthene	0.32 j	0.26 j	♦	♦	ND	50.0 ***	NA
Pyrene	0.36 j	0.35 j	♦	♦	ND	50.0 ***	NA
Benzo(a)anthracene	0.12 j	0.10 j	♦	♦	ND	0.224 or MDL	NA
Chrysene	0.15 j	0.13 j	♦	♦	ND	0.4	NA
Benzo(b)fluoranthene	0.086 j	0.070 j	♦	♦	ND	1.1	NA
Benzo(k)fluoranthene	0.071 j	0.060 j	♦	♦	ND	1.1	NA
Benzo(a)pyrene	**0.11 j**	**0.096 j**	♦	♦	ND	0.061 or MDL	NA
PESTICIDES/PCBs (mg/kg)							
alpha-BHC	0.0025 b	♦	♦	♦	ND	0.11	NA
Endrin	0.0047 j p	♦	♦	♦	ND	0.1	NA
Aroclor 1254	ND	♦	♦	ND	ND	1.0/10*	NA
Aroclor 1260	ND	♦	♦	ND	ND	1.0/10*	NA
METALS (mg/kg)							
Aluminum	6,900 R	♦	♦	♦	53 B	SB	33,000
Antimony	0.77 B N	♦	♦	♦	ND	SB	0.6 - 10 (n)
Arsenic	12 E	♦	♦	♦	ND	7.5 or SB	3.0 - 12.0 æ
Barium	59	♦	♦	♦	2.6 B	300 or SB	15 - 600
Beryllium	0.44 B	♦	♦	♦	0.10 B	0.16 or SB	0 - 1.75
Cadmium	ND	♦	♦	♦	ND	1 or SB	0.1 - 1.0
Calcium	874	♦	♦	♦	109 B	SB	130 - 35,000 æ
Chromium	17	♦	♦	♦	ND	10 or SB	1.5 - 40.0 æ
Cobalt	7.1 B	♦	♦	♦	ND	30 or SB	2.5 - 60.0 æ
Copper	29	♦	♦	♦	ND	25 or SB	1.0 - 50.0
Iron	18,100 R	♦	♦	♦	85 B	2,000 or SB	2,000 - 550,000
Lead	61	♦	♦	♦	3.5	SB**	4.0 - 61 or 200 - 500**
Magnesium	1,890	♦	♦	♦	16 B	SB	100 - 5,000
Manganese	89 R	♦	♦	♦	1.5 B	SB	50 - 5,000
Mercury	**0.13**	♦	♦	♦	ND	0.1	0.001 - 0.2
Nickel	14 E	♦	♦	♦	ND	13 or SB	0.5 - 25
Potassium	1,130	♦	♦	♦	15 B	SB	8,500 - 43,000 æ
Selenium	2.4	♦	♦	♦	ND	2 or SB	0.1 - 3.9
Silver	ND	♦	♦	♦	ND	SB	0.1 - 5.0 (n)
Sodium	97 B E	♦	♦	♦	ND	SB	6,000 - 8,000
Thallium	0.72 B	♦	♦	♦	ND	SB	0.1 - 0.8 (q)
Vanadium	25	♦	♦	♦	ND	150 or SB	1.0 - 300
Zinc	**131**	♦	♦	♦	7.6 B	20 or SB	9.0 - 50
Cyanide	ND	♦	♦		ND	****	N/A

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
*** - As per TAGM #4046, Total VOCs < 10 ppm., total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
c - Sample analyzed by Severn Trent Laboratories, Inc. in December 1997.
b - Found in associated blanks.
e - Estimated concentration; exceeds GC/MS calibration range.
j - Estimated concentration; compound present below quantitation limit.
DL - Diluted sample analysis.
ND - Not detected at analytical detection limit.
RE - Reanalysis.
MDL - Method detection limit.
p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowen, H.J., Environmental Chemistry of the Elements.
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
R - Duplicate analysis not within control limits.
SB - Site background.

TABLE 4-3 (1 of 1)

Originally Table 6-5 (June 2001 Remediation Report)

TYSS-05 SOIL DATA SUMMARY
TRANSFORMER YARD
(January 1998)

PARAMETER	TYSS-05	DL TYSS-05	EAFB-04 (µg/l)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)					
Methylene chloride	**0.20 b**	♦	4 b j	0.1	NA
Acetone	0.017 b	♦	5 b j	0.2	NA
2-Butanone	0.005 j	♦	1 j	0.3	NA
SEMIVOLATILE ORGANICS (mg/kg)		[DL: 10:1]			
bis(2-Ethylhexyl)phthalate	ND	ND	1 b j	50.0 ***	NA
PESTICIDES/PCBs (mg/kg)					
Endrin aldehyde	0.0025 j p	♦	ND	NS	NA
Aroclor 1254	ND	♦	ND	1.0/10*	NA
Aroclor 1260	0.096	♦	ND	1.0/10*	NA
METALS (mg/kg)					
Aluminum	9,890 R	♦	53 B	SB	33,000
Antimony	0.73 B N	♦	ND	SB	0.6 - 10 (n)
Arsenic	8.6 E	♦	ND	7.5 or SB	3.0 - 12.0 æ
Barium	90	♦	2.6 B	300 or SB	15 - 600
Beryllium	0.43 B	♦	0.10 B	0.16 or SB	0 - 1.75
Cadmium	0.38 B	♦	ND	1 or SB	0.1 - 1.0
Calcium	2,290	♦	109 B	SB	130 - 35,000 æ
Chromium	23	♦	ND	10 or SB	1.5 - 40.0 æ
Cobalt	10	♦	ND	30 or SB	2.5 - 60.0 æ
Copper	38	♦	ND	25 or SB	1.0 - 50.0
Iron	17,600 R	♦	85 B	2,000 or SB	2,000 - 550,000
Lead	45	♦	3.5	SB**	4.0 - 61 or 200 - 500**
Magnesium	4,040	♦	16 B	SB	100 - 5,000
Manganese	188 R	♦	1.5 B	SB	50 - 5,000
Mercury	ND	♦	ND	0.1	0.001 - 0.2
Nickel	20 E	♦	ND	13 or SB	0.5 - 25
Potassium	3,360	♦	15 B	SB	8,500 - 43,000 æ
Selenium	0.34 B	♦	ND	2 or SB	0.1 - 3.9
Silver	ND	♦	ND	SB	0.1 - 5.0 (n)
Sodium	74 B E	♦	ND	SB	6,000 - 8,000
Thallium	0.24 B	♦	ND	SB	0.1 - 0.8 (q)
Vanadium	29	♦	ND	150 or SB	1.0 - 300
Zinc	**406**	♦	7.6 B	20 or SB	9.0 - 50
Cyanide	ND	♦	ND	****	N/A

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
*** - As per TAGM #4046, Total VOCs < 10 ppm., total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
b - Found in associated blanks.
e - Estimated concentration; exceeds GC/MS calibration range.
j - Estimated concentration; compound present below quantitation limit.
DL - Diluted sample analysis.
ND - Not detected at analytical detection limit.
RE - Reanalysis.
MDL - Method detection limit.
p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columsn.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowan, H.J., Environmental Chemistry of the Elements.
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
R - Duplicate analysis not within control limits.
SB - Site background.

TABLE 4-4 (1 of 2)

Originally Table 6-8 (June 2001 Remediation Report)

TYMD SOIL DATA SUMMARY
TRANSFORMER YARD MOAT DRAIN
(January 1998)

PARAMETER	TYMD-01 H2M	TYMD-01 H2M	TYMD-01[c] STL	TYMD-02 H2M	TYMD-02[c] STL	EAFB-04 (µg/l) H2M	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)								
Methylene chloride	0.16 b	♦	♦	♦	♦	4 b j	0.1	NA
Acetone	0.035 b	♦	♦	♦	♦	5 b j	0.2	NA
2-Butanone	0.003 j	♦	♦	♦	♦	1 j	0.3	NA
Toluene	0.005 j	♦	♦	♦		ND	1.5	NA
SEMIVOLATILE ORGANICS (mg/kg)								
2-Methylnaphthalene	0.062 j	♦	♦	♦	♦	ND	36.4	NA
bis(2-Ethylhexyl)phthalate	ND	♦	♦	♦	♦	1 b j	50.0 ***	NA
PESTICIDES/PCBs (mg/kg)								
alpha-BHC	0.0022 b j p	♦	♦	♦	♦	ND	0.11	NA
Endosulfan I	0.0017 j p	♦	♦	♦	♦	ND	0.9	NA
4,4'-DDE	0.0041 j p	♦	♦	♦	♦	ND	2.1	NA
Endrin aldehyde	0.0025 j p	♦	♦	♦	♦	ND	NS	NA
Aroclor 1254	0.14 p	0.28	0.48	0.34	0.53	ND	1.0/10*	NA
Aroclor 1260	0.21	0.31p	ND	0.16	ND	ND	1.0/10*	NA

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
*** - As per TAGM #4046, Total VOCs < 10 ppm., total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
c - Sample analyzed by Severn Trent Laboratories, Inc.
b - Found in associated blanks.
ND - Not detected at analytical detection limit.
p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columsn.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.
FB - Field blank

TABLE 4-4 (2 of 2)

Originally Table 6-8 (June 2001 Remediation Report)

TYMD SOIL DATA SUMMARY
TRANSFORMER YARD MOAT DRAIN
(January 1998)

PARAMETER	TYMD-01 H2M	TYMD-01 H2M	TYMD-01[c] STL	TYMD-02 H2M	TYMD-02[c] STL	EAFB-04 (µg/l) H2M	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
METALS (mg/kg)								
Aluminum	5,250 R	♦	♦	♦	♦	53 B	SB	33,000
Antimony	0.43 B N	♦	♦	♦	♦	ND	SB	0.6 - 10 (n)
Arsenic	**17 E**	♦	♦	♦	♦	ND	7.5 or SB	3.0 - 12.0 æ
Barium	297	♦	♦	♦	♦	2.6 B	300 or SB	15 - 600
Beryllium	0.50 B	♦	♦	♦	♦	0.10 B	0.16 or SB	0 - 1.75
Cadmium	8.8	♦	♦	♦	♦	ND	1 or SB	0.1 - 1.0
Calcium	18,500	♦	♦	♦	♦	109 B	SB	130 - 35,000 æ
Chromium	15	♦	♦	♦	♦	ND	10 or SB	1.5 - 40.0 æ
Cobalt	5.5 B	♦	♦	♦	♦	ND	30 or SB	2.5 - 60.0 æ
Copper	**264**	♦	♦	♦	♦	ND	25 or SB	1.0 - 50.0
Iron	22,100 R	♦	♦	♦	♦	85 B	2,000 or SB	2,000 - 550,000
Lead	**2,390**	♦	♦	♦	♦	3.5	SB**	4.0 - 61 or 200 - 500**
Magnesium	1,700	♦	♦	♦	♦	16 B	SB	100 - 5,000
Manganese	144 R	♦	♦	♦	♦	1.5 B	SB	50 - 5,000
Mercury	0.10 B	♦	♦	♦	♦	ND	0.1	0.001 - 0.2
Nickel	17 E	♦	♦	♦	♦	ND	13 or SB	0.5 - 25
Potassium	787	♦	♦	♦	♦	15 B	SB	8,500 - 43,000 æ
Selenium	1.3	♦	♦	♦	♦	ND	2 or SB	0.1 - 3.9
Silver	ND	♦	♦	♦	♦	ND	SB	0.1 - 5.0 (n)
Sodium	134 B E	♦	♦	♦	♦	ND	SB	6,000 - 8,000
Thallium	0.60 B	♦	♦	♦	♦	ND	SB	0.1 - 0.8 (q)
Vanadium	14	♦	♦	♦	♦	ND	150 or SB	1.0 - 300
Zinc	**2,590**	♦	♦	♦	♦	7.6 B	20 or SB	9.0 - 50

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
c - Sample analyzed by Severn Trent Laboratories, Inc.
ND - Not detected at analytical detection limit.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowan, H.J., Environmental Chemistry of the Elements.
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
R - Duplicate analysis not within control limits.
SB - Site background.
FB - Field blank

at this location were higher than at other locations on site. The NYSDEC requested that the area around CVDP-02 be widened and deepened to remove the SVOCs down to acceptable levels. Subsequent to soil removal, three additional samples (CVDP-04, CVDP-05, and CVDP-06) were collected after the area was excavated and analyzed for SVOCs only; one or more of these samples showed low levels of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and BaP that were slightly above the RSCOs in TAGM 4046. Table 4-5, formerly Table 7-17 from the June 2001 Remediation Report, contains the data from the cable vault drainpipe excavation. NYSDEC reviewed the data, indicated that no further work was required in the area, and granted approval for backfilling the area with clean, certified fill.

In addition, during the excavation to locate the entrance to the intake and discharge tunnels at the substation, a rusty cindery fill material was encountered. Con Edison requested that a sample be taken and analyzed for the full toxicity characteristic leaching procedure ("TCLP") parameters; NYSDEC agreed with this decision. The results were compared to the hazardous waste threshold for each compound. Only barium, chromium, and lead were detected and at levels significantly below their hazardous waste threshold; all other compounds were not detected. Table 4-6, formerly Table 6-16 from the June 2001 Remediation Report, provides these results.

Because the Site was originally owned and operated by other utility companies, the previous use and history of the Site were not always well documented. In addition, the available maps and plans of the Site were not always accurate or complete. These factors resulted in many changes during the investigation and also during the course of remediation, when previously unknown structures including drainpipes, catch basins, electrical boxes, and sumps were encountered. Some of these structures were contaminated with PCBs. As these structures were encountered they were sampled, analyzed, and, if contaminated, removed and then the underlying soil was sampled and analyzed beneath them. Many of these structures were located beneath the transformer yard slab and the substation building slab. In 1998, NYSDEC requested that additional soil samples be collected beneath the slabs. Con Edison elected to remove the slabs and submitted a Work Plan to NYSDEC in May 1998. OHM demobilized from the site in July 1998.

4.3 **1999 to 2000**

The May 1998 Work Plan was approved by NYSDEC in May 1999. Con Edison retained Sarnelli Brothers ("Sarnelli") to conduct this additional remediation work, which was initiated in August 1999. HDR|LMS provided the identical services as was provided during the 1997 to 1998 remediation. STL was again retained as the mobile laboratory to analyze the PCB samples. Mitkem Corporation ("Mitkem") was retained as the off-site laboratory to confirm the mobile laboratory samples.

TABLE 4-5 (1 of 2)

Originally Table 7-17 (June 2001 Remediation Report)

POST REMEDIATION DATA SUMMARY

CABLE VAULT SUMP DRAINPIPE EXCAVATION

(May 1998 - June 1998)

PARAMETER	AFTER DRAINPIPE REMOVAL			AFTER FINAL EXCAVATION				RECOMMENDED SOIL CLEANUP OBJECTIVE (b)
	CVDP-02 ETL	DL CVDP-02 ETL	DL CVDP-02 ETL	CVDP-04 ETL	CVDP-05 ETL	CVDP-06 ETL	DL CVDP-06 ETL	
SAMPLE DEPTH (FT)	8'	8'	8'	11 - 12'	6 - 9'	6 - 9'	6 - 9'	
VOLATILE ORGANICS (mg/kg)	ND	◆	◆	◆	◆	◆	◆	
SEMIVOLATILE ORGANICS (mg/kg)		[DL:10:1]	[DL:20:1]				[DL: 10:1]	
Naphthalene	2.48	ND	ND	ND	ND	0.185	ND	13.0
2-Methylnaphthalene	2.1	ND	ND	ND	ND	ND	ND	36.4
Acenaphthylene	2.52	ND	ND	ND	ND	0.385	ND	
Acenaphthene	1	8.47	ND	ND	ND	0.802	ND	41.0
Dibenzofuran	3.48	ND	ND	ND	ND	0.448	ND	6.2
Fluorene	1	9.95	ND	ND	ND	0.817	ND	50.0 ***
Phenanthrene	1	1	**62.0**	ND	ND	1	9.75	50.0 ***
Anthracene	1	16.9	ND	ND	ND	1.84	ND	50.0 ***
Fluoranthene	1	1	**53.1**	ND	0.335	1	10.2	50.0 ***
Pyrene	1	1	**52.9**	ND	0.459	1	11.1	50.0 ***
Benzo(a)anthracene	1	**22.6**	ND	ND	**0.232**	1	**5.89**	0.224 or MDL
Chrysene	1	**19.3**	ND	ND	0.212	1	**4.81**	0.4
bis(2-Ethylhexyl)phthalate	1	ND	ND	ND	0.859	0.538	ND	50.0 ***
Benzo(b)fluoranthene	1	**22**	ND	ND	0.281	1	**5.32**	1.1
Benzo(k)fluoranthene	1	**8.71**	ND	ND	ND	**1.66**	ND	1.1
Benzo(a)pyrene	1	**19.3**	ND	ND	**0.257**	**4.26**	ND	0.061 or MDL
Indeno(1,2,3-c,d)pyrene	1	**9.85**	ND	ND	0.147	2.04	ND	3.2
Benzo(g,h,i)perylene	1	11.9	ND	ND	0.183	2.45	ND	50.0 ***

Note : Numbers in bold exceed objectives.
1 - Value exceeded calibration range and needed further dilution to obtain an accurate value.
◆ - Not analyzed.
*** - As per TAGM #4046, Total VOCs < 10 ppm., total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
e - Estimated concentration; exceeds GC/MS calibration range.
DL - Diluted sample analysis.
ND - Not detected at analytical detection limit.
MDL - Method detection limit.

TABLE 4-5 (2 of 2)

Originally Table 7-17 (June 2001 Remediation Report)

POST REMEDIATION DATA SUMMARY
CABLE VAULT SUMP DRAINPIPE EXCAVATION
(May 1998 - June 1998)

PARAMETER SAMPLE DEPTH (FT)	AFTER DRAINPIPE REMOVAL CVDP-02 ETL 8'	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
METALS (mg/kg)			
Aluminum	8220	SB	33,000
Antimony	ND	SB	0.6 - 10 (n)
Arsenic	2.69	7.5 or SB	3.0 - 12.0 æ
Barium	55.6	300 or SB	15 - 600
Beryllium	0.415	0.16 or SB	0 - 1.75
Cadmium	ND	1 or SB	0.1 - 1.0
Calcium	4820	SB	130 - 35,000 æ
Chromium	16.7	10 or SB	1.5 - 40.0 æ
Cobalt	6.63	30 or SB	2.5 - 60.0 æ
Copper	30.1	25 or SB	1.0 - 50.0
Iron	11800	2,000 or SB	2,000 - 550,000
Lead	173	SB*	4.0 - 61 or 200 - 500*
Magnesium	2,810	SB	100 - 5,000
Manganese	186	SB	50 - 5,000
Mercury	**0.081**	0.1	0.001 - 0.2
Nickel	12.6	13 or SB	0.5 - 25
Potassium	1,690	SB	8,500 - 43,000 æ
Selenium	ND	2 or SB	0.1 - 3.9
Silver	ND	SB	0.1 - 5.0 (n)
Sodium	336	SB	6,000 - 8,000
Thallium	ND	SB	0.1 - 0.8 (q)
Vanadium	24	150 or SB	1.0 - 300
Zinc	**64.5**	20 or SB	9.0 - 50
Cyanide	ND	**	N/A

Note : Numbers in bold exceed objectives.
* - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowan, H.J., Environmental Chemistry of the Elements.

TABLE 4-6 (1 of 2)

Originally Table 6-16 (June 2001 Remediation Report)

TRENCH INVESTIGATION SOIL DATA SUMMARY
(December 1997)

PARAMETER	TI-02 H2M	REGULATORY LEVEL (ug/l)
TCLP VOLATILE ORGANICS (ug/l)		
Vinyl Chloride	ND	200
1,1 Dichloroethene	ND	700
Chloroform	ND	6,000
1,2 Dichloroethane	ND	500
Carbon Tetrachloride	ND	500
Trichloroethene	ND	500
Chlorobenzene	ND	100,000
2-Butanone (MEK)	ND	200,000
TCLP SEMIVOLATILE ORGANICS (ug/l)		
1,4 Dichlorobenzene	ND	7,500
Hexachloroethane	ND	3,000
Nitrobenzene	ND	2,000
Hexachlorobutadiene	ND	500
2,4 Dinitrotoluene	ND	130
Hexachlorobenzene	ND	130
2,4,6 Trichlorophenol	ND	2,000
Pentachlorophenol	ND	100,000
2-Methylphenol (o-Cresol)	ND	200,000
2,4,5 Trichlorophenol	ND	400,000
3-Methylphenol (m-Cresol)	ND	200,000
4-Methylphenol (p-Cresol)	ND	200,000
Pyridine	ND	5,000
TCLP PESTICIDES (ug/l)		
Lindane	ND	400
Heptachlor	ND	8
Heptachlor Epoxide	ND	8
Endrin	ND	20
Methoxychlor	ND	10,000
Toxaphene	ND	500
Chlordane	ND	30
TCLP HERBICIDES (ug/l)		
2,4, D	ND	10,000
2,4,5-TP (Silvex)	ND	1,000
TCLP METALS (ug/l)		
Silver	ND	5,000
Arsenic	ND	5,000
Barium	0.58	100,000
Cadmium	ND	1,000
Chromium	0.01	5,000
Mercury	ND	200
Lead	0.09	5,000
Selenium	ND	1,000

ND - Not detected at analytical detection limit.

TABLE 4-6 (2 of 2)

Originally Table 6-16 (June 2001 Remediation Report)

TRENCH INVESTIGATION SOIL DATA SUMMARY
(December 1997)

PARAMETER	TI-01 STL	TI-02 H2M	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
Total METALS (mg/kg)				
Silver	♦	ND	SB	0.1 - 5.0 (n)
Arsenic	♦	6.4	7.5 or SB	3.0 - 12.0 æ
Barium	♦	87.8	300 or SB	15 - 600
Cadmium	♦	ND	1 or SB	0.1 - 1.0
Chromium	♦	9.1	10 or SB	1.5 - 40.0 æ
Mercury	♦	ND	0.1	0.001 - 0.2
Lead	♦	282	SB**	4.0 - 61 or 200 - 500**
Selenium	♦	0.9	2 or SB	0.1 - 3.9
Total Solids	♦	85.30%		
Flash Point	♦	ND	> 60° C	
pH (Corros.)	♦	9.7 Units	<2 / >12.5	
PCBs (mg/kg)				
Aroclor 1254	ND	♦		NA
Aroclor 1260	2.6	♦		NA
Total PCBs	2.6		10*	NA
Sample Depth	3-4 ft			
NYSDEC Clean-up Criteria (mg/kg)	≤ 10			

♦ - Not analyzed.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations. Sample collected from3-4 ft below grade.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
ND - Not detected at analytical detection limit.
SB - Site background.

By the end of January 2000, the remedial efforts in the substation building slab were completed. This included the removal of the slab and associated structures, sampling of underlying soils for PCBs, and removal of soils exceeding the cleanup criteria. Upon completion of the remedial activities and with the NYSDEC's approval, the area was backfilled with clean fill. The removal of the transformer yard slab and associated structures as well as sampling, and, if necessary, remediation of the underlying soils was completed by November 2000. All final post-excavation samples met the cleanup objectives for PCBs (see Section 5.0 for data).

As stated previously, NYSDEC requested that Con Edison delineate the extent of the metals contamination found near the transformer yard moat drain in January 1998. As a result of the delineation and sampling that determined that the metals were associated with the cinder layer, Con Edison elected to remove the entire cinder layer. This cindery layer, 0.5 to 1 ft thick, was most likely used as base material for the transformer yard when it was constructed.

The cinder removal activities were initiated in February 2000. After a portion of the cinder layer was removed, oily water and oily soils were encountered in several areas of the transformer yard, which halted cinder removal activities in March 2000. A series of test pits was completed in the area in order to investigate the potential source(s) of the oil.

Visual inspection of the test pits conducted near the underground duct banks indicated that some of these structures contained residual oil or oily water. Fingerprint analyses of the soil and oil/oily water samples collected from the test pits indicated that most of them contained dielectric fluid or transformer oil.

Visual inspection of the test pits conducted in the northwest corner of the transformer yard indicated the presence of fuel oil contamination. The fingerprint results for the soil samples collected from the test pits confirmed the presence of a fuel oil in the soil. The impacted soil appeared to be confined to an area approximately 50 feet long, 15 feet wide and 5 feet deep. A search of the New York Spills Database revealed a record of a fuel oil spill that occurred in May 1994 on the property located just north of the site behind the retaining wall. Jonel Development Corporation now owns this property, formerly the Shoreline Oil Company Terminal.

After completion of the test pit investigation, Sarnelli demobilized from the site in July 2000.

4.4 **2001 to 2002**

The remediation work completed on the site from 1996 to 2000 was summarized in the Remediation Report submitted to the NYSDEC in June 2001. At the same time, the June 2001

Work Plan that included the removal of the remaining cinder layer and the duct banks in the transformer yard was prepared and submitted to NYSDEC. The field work contained in this work plan was initiated in April 2002 and completed in August 2002 by Sarnelli and overseen by HDR|LMS.

In October 2001, Con Edison submitted a Work Plan for the fuel oil-contaminated area that was found during the test pit investigation in the northwestern corner of the transformer yard. After submittal and approval of this work plan, the soil was excavated to a depth of five ft and five post-excavation samples were collected by HDR|LMS for VOC and SVOC analysis in May 2002. Both the NYSDEC 1994 TAGM soil cleanup objectives and the NYSDEC Recommended Soil Cleanup Objectives for Fuel Oil Contaminated Soil (Ref. 24, Appendix A of this Report) were used as the remedial objectives (see Section 5.0 for results). None of the samples exceeded any cleanup objectives. HDR|LMS prepared a report, dated August 2002, entitled ***Echo Avenue Site Fuel Oil Spill Report*** (the "Fuel Oil Spill Report") that documented the cleanup conducted in the northwestern corner of the transformer yard (Ref. 25, Appendix A of this Report). The report was submitted to NYSDEC, which officially closed the Con Edison Echo Avenue spill (NYSDEC Spill No. 99-12989) on September 30, 2002 (Refs. 26 and 27, Appendix A of this Report).

4.5 2002 to 2003

In August 2002, Con Edison elected to conduct additional remediation work on the Site. A Work Plan was prepared and submitted to NYSDEC in October 2002. However, since the contractor, Sarnelli, was already on the Site, Con Edison elected to have Sarnelli initiate the work prior to submission and approval of the work plan. This work was conducted from August 2002 to May 2003 and included removal of all additional subsurface structures in the transformer yard (pedestals, manholes, and pullbox), removal of the cable vault and duct runs between the cable vault and transformer yard and tunnel, removal of all PILC between the cable vault and tunnel, sampling of the remaining monitoring wells, and abandonment of the wells after review of the sampling data. In addition, selected catch basins and drainpipes in the remainder of the Site were removed. Manhole No. 4 had been sampled and filled in with concrete as part of the 1996 to 1998 remediation. In addition, the cables from the street manholes (MH-5 and MH-6) to the concrete retaining wall in the transformer yard were removed and the duct banks cleaned and plugged on both ends as part of the 1996 to 1998 remediation (see Figure 1-3). These structures (the portion of the concrete duct banks from Echo Avenue to the west wall of the former transformer yard and MH-4) remain in place.

Because three of the six monitoring wells were destroyed during the previous remediation work and one well was bent so severely that it could not be sampled, only two wells could be sampled

on the Site during the final groundwater sampling event. These wells, EAMW-1 and EAMW-4 (see Figure 5-45 in the following section for location), were sampled in August 2002 and analyzed for TCL organics and TAL inorganics and compared to the Class GA Groundwater Standards. The results showed several metals that were above the standards or guidance values, some of which were attributed to saltwater intrusion from Echo Bay (Section 5.0 provides the results and shows the locations). After review of the data by the NYSDEC, Con Edison received permission to abandon the wells (Ref. 28, Appendix of this Report). These two wells plus one additional well that could not be sampled (EAMW-5), were abandoned in accordance with NYSDEC document, ***Decommissioning Procedures NPL Site Monitoring Well Decommissioning*** [Decommissioning Procedures (Ref. 29, Appendix A of this Report)] in January 2003.

The results of the remediation conducted from 2002 to 2003 were summarized in the July 2003 Remediation Report Addendum.

4.6 2003 to 2004

The RAWP prepared by TRC for the mudflat area was approved by NYSDEC in June 2003 and included a pre-design sampling program which occurred in July 2003. A total of sixty sediment samples were collected from fifteen locations with the locations surveyed using global positioning system ("GPS") equipment. As a result of the pre-design sampling, six 'hot spots' in addition to the four original AOCs were identified that required remediation. The results in the hot spots ranged from 1.1 to 3.5 mg/kg of PCBs.

The remediation of the mudflat area took place in three phases:

- Phase 1 - October 27 to November 5, 2003
- Phase 2 - December 15 to 23, 2003
- Phase 3 - March 8 to April 22, 2004.

The remediation was done in stages due to poor weather conditions and a lack of a receding low tide during the first two stages that prevented access to the outer reaches of the excavation. Samples were collected to confirm that the remedial objective of 1.0 mg/kg for PCBs was met.

On December 19, 2003, NYSDEC requested that a sample be collected from area AOC-1 where a fuel oil odor was detected and a sheen was observed on the sediment. The sample was analyzed for TCL VOCs and SVOCs (the results are discussed in Section 5.0)

After the remediation was complete, the excavated area was backfilled with a combination of clean certified top soil and sand. The results of the mudflat remediation were reported by TRC in the RAR prepared in February 2005.

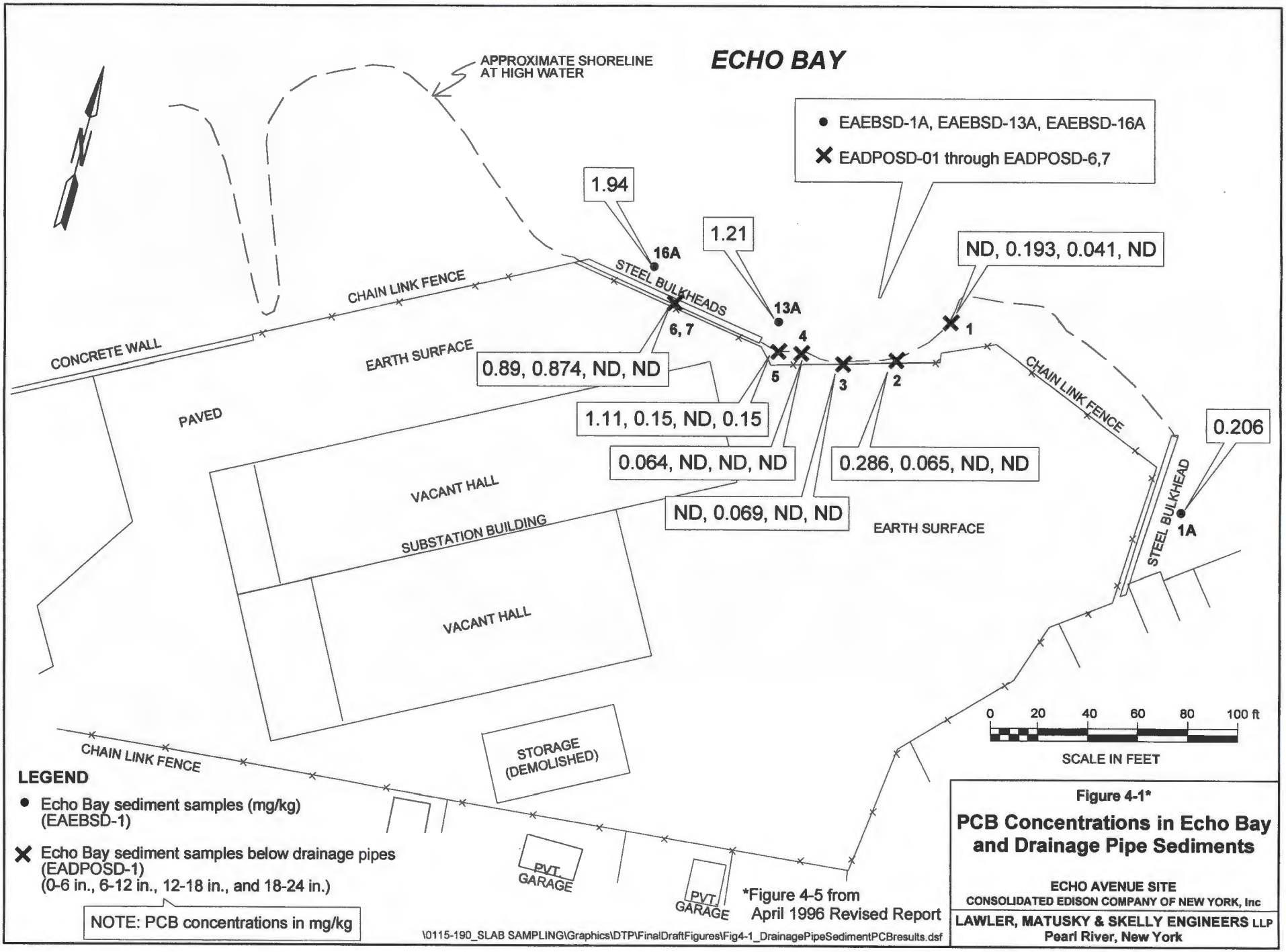
4.7 2007

Based on a review of TRC's RAR (Ref. 22, Appendix A of this Report) for the sediment remediation activities conducted in 2003 and 2004 and a review of the sediment sample results collected by HDR|LMS, there appeared to be three locations where samples collected by HDR|LMS contained concentrations of PCBs above 1 mg/kg and additional sediment was not removed during the remediation activities by TRC. HDR|LMS contacted Con Edison to discuss this information after review of the various reports was completed. A Site visit was conducted by Con Edison, TRC, and HDR|LMS on January 12, 2007 to have personnel involved with the sampling activities from TRC and HDR|LMS look at the locations in question. Apparently, TRC was not provided with HDR|LMS' report which contained the data from these three locations [***Report on Sampling Required in Revised Addendum No. 2 Final Work Plan*** (the "April 1996 Revised Report") dated April 1996 (Ref. 8, Appendix A of this Report)] when they were preparing their proposal and the RAWP for the sediment remediation activities. The following paragraphs describe the three locations in question (see Figure 4-1, formerly Figure 4-5 from the April 1996 Revised Report for the location of these samples).

One location, EAEBSD-16A, is under the overhead pipes leading from the abandoned fuel oil barge dock to the west towards Echo Avenue where the former oil terminal was located. During the remediation activities, TRC was concerned about the condition of this deteriorated structure and the safety of its workers and the possibility of the release of oil from the pipes if they broke. They conducted remediation excavation work in this area by hand and received permission from NYSDEC to excavate to within 2 ft of the pipes further to the west so they would not be undermined. The sediment at location, EAEBSD-16A, was not removed by TRC as part of the 2003 to 2004 TRC remediation activities.

Based on the discussions and a review of photos taken during TRC's remedial activities during the site visit on January 12, 2007, TRC confirmed that they had excavated sediment just north of EAEBSD-13A when working in the VS-04 area. However, it does not appear that sediment was removed this close to the steel bulkhead in this area (EAEBSD-13A was collected 8 ft from the bulkhead).

When TRC was removing sediment from the VS-03/AOC-3 area, it temporarily placed clean material down on top of the EADPOSD-5 area to position the excavator to be able to reach the VS-03/AOC-3 location. When the excavation activities were completed in this area, the clean


ECHO BAY
APPROXIMATE SHORELINE AT HIGH WATER
EAEBSD-1A, EAEBSD-13A, EAEBSD-16A
EADPOSD-01 through EADPOSD-6,7
1.94
1.21
ND, 0.193, 0.041, ND
16A
13A
1
6, 7
4
5
3
2
CHAIN LINK FENCE
STEEL BULKHEADS
CONCRETE WALL
EARTH SURFACE
0.89, 0.874, ND, ND
1.11, 0.15, ND, 0.15
0.064, ND, ND, ND
0.286, 0.065, ND, ND
ND, 0.069, ND, ND
0.206
PAVED
VACANT HALL
SUBSTATION BUILDING
VACANT HALL
EARTH SURFACE
STEEL BULKHEAD
1A
STORAGE (DEMOLISHED)
CHAIN LINK FENCE
PVT. GARAGE
PVT. GARAGE
0 20 40 60 80 100 ft
SCALE IN FEET
LEGEND
Echo Bay sediment samples (mg/kg) (EAEBSD-1)
Echo Bay sediment samples below drainage pipes (EADPOSD-1) (0-6 in., 6-12 in., 12-18 in., and 18-24 in.)
NOTE: PCB concentrations in mg/kg
*Figure 4-5 from April 1996 Revised Report
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig4-1_DrainagePipeSedimentPCBresults.dsf
Figure 4-1*
PCB Concentrations in Echo Bay and Drainage Pipe Sediments
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

fill material previously placed was removed and that which was in contact with the sediment was disposed. It is possible that the surface of this area was excavated during this process. However, the deteriorated wooden crib that EADP-5 drained into was still visible suggesting that TRC did not remove the fill material much below the top of the sediment in this area. Therefore, it appeared that the sediment at location EADPOSD-5 had not been removed by TRC. As mentioned previously in this Section, the results from these three sediment samples collected in 1995 ranged from 1.11 to 1.94 mg/kg PCBs (see Figure 4-1).

Subsequent to the site visit, Con Edison elected to resample the three locations in question from the mudflat area (EAEBSD-13A, -16A, and EADPOSD-5) to determine the current concentration of PCBs at these locations. Con Edison retained HDR|LMS to collect the three samples; the sampling event was conducted on February 12, 2007.

Sediment samples were collected from the 0-2 ft interval at these three locations. A hole was dug to a depth of 2 ft with a clean shovel in the original sample locations (based on photographs and measurements from nearby landmarks). A laboratory-cleaned, stainless steel spoon was then used to scrape sediment from the sides of the hole from 0-2 ft. The sediment was placed in a laboratory-cleaned, stainless steel bowl, homogenized, and placed in laboratory-supplied sample containers. The samples were labeled (EAEBSD-13A-R, -16A-R, and EADPOSD-5-R), placed in an iced cooler, and shipped to the analytical laboratory (Mitkem Corp.) under chain-of custody protocol. A blind duplicate sample, a field rinseate blank sample, and matrix spike and matrix spike duplicate samples were collected and submitted to the analytical laboratory with the three sediment samples to provide the applicable QA/QC samples. All samples were analyzed for all PCB aroclors.

The results of the resampling showed that these three locations do not contain PCB concentrations above 1 mg/kg in the sediment from the 0-2 ft depth interval. EADPOSD-5-R and a blind duplicate sample collected at this location (EADPOSD-5-R-D) contained no detectible concentrations of PCBs, and the samples from EAEBSD-13A-R and EAEBSD-16A-R contained PCB concentrations of 0.88 and 0.54 mg/kg, respectively. The results are presented in Table 4-7; only aroclors that were detected are provided on the table.

5.0 SUMMARY OF CONTAMINANT LEVELS REMAINING ON SITE

This Section summarizes the levels of contaminants remaining at various locations on the site. The discussion has been subdivided into soil contaminant levels both on adjacent residences and on site, on site groundwater contaminant levels, and contaminant levels in the mudflat sediment of Echo Bay. Where appropriate, figures showing the final confirmatory contaminant levels have been provided.

Table 4-7

SEDIMENT DATA SUMMARY
MUDFLAT SEDIMENTS
(February 2007)

Sample ID Date Analytical Laboratory	EAEBSD-13A-R 2/12/2007 MITKEM	EAEBSD-16A-R 2/12/2007 MITKEM	EADPOSD-5-R 2/12/2007 MITKEM	EADPOSD-5-R-D 2/12/2007 MITKEM (Blind Duplicate of EADPOSD-5-R)	FB-01 2/12/2007 MITKEM (Field Blank)
PCBs (mg/kg)					(µg/l)
Aroclor 1254	0.88	0.54	ND	ND	ND
Aroclor 1260	ND	ND	ND	ND	ND
Total PCBs	0.88	0.54	ND	ND	ND
Sample Depth	0-2 ft	0-2 ft	0-2 ft	0-2 ft	1-2'
NYSDEC Clean-up Criteria (mg/kg)	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1

-- - MITKEM data not validated.
j - Estimated concentration; compound present below quantitation limit.
p - Estimated concentration; Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
s - Estimated concentration; solids below 50%.
DL - Diluted sample analysis.
ND - Not detected at analytical detection limit.
MITKEM - Off-site laboratory.

5.1 SOIL

The following sections describe the contaminant levels remaining in soil on- and off-Site. Figures are provided that show the confirmatory sample analyses after remediation was completed or where investigations determined that no contamination existed. In Section 6.0 overall figures are presented that show the contaminant levels that remain throughout the Site.

5.1.1 Adjacent Residences

As part of the Site investigations, soil samples, i.e., ≤2 ft deep, were collected from ten residential properties located adjacent to the former Con Edison Echo Avenue substation in 1996 (see Figure 5-1, formerly Figure 3-1, from the June 2001 Remediation Report). At six of these residences: Ranftel, Rothchild, Domoto, G. Lockwood, Schlupp, and Benjamin, no PCBs above the cleanup level of ≤1 mg/kg at a depth of ≤2 ft were found. Figures 5-2, 5-3, 5-4, 5-5, 5-6, and 5-7, formerly Figures 5-1, 5-2, 5-7, 5-8, 5-9, and 5-10, from the June 2001 Remediation Report, respectively, document the PCB levels remaining at these six residences. Four of the residences: Dupin de St. Cyr, Copuano, Treffeissen, and V. Lockwood had PCBs above the cleanup objective for surface soils (≤ 1 mg/kg for soils ≤2 ft deep) and therefore, required remediation. Figures 5-8, 5-9, 5-10, and 5-11, formerly Figures 7-1, 7-2, 7-3, and 7-4a to 7-4m, from the June 2001 Remediation Report, show the final confirmatory PCB concentrations after the remediation was completed at the Dupin de St. Cyr, Copuano, Treffeissen, and V. Lockwood residences, respectively. Figure 5-11 is a composite of Figures 7-4a – 7-4m. The excavation at the V. Lockwood property extended onto the Con Edison property and ranged from between 0.5 ft deep to 8 ft deep. The excavation had continued until all confirmatory PCB sample results met the RSCOs in TAGM 4046. This is the reason that the results provided on Figure 5-11 are for different sections.

As stated in Section 4.2, one sample was collected from the V. Lockwood excavation on the Con Edison property and analyzed for TCL organics and TAL inorganics. After the results (provided in Table 4-1) were received from this sample, WTD-01, NYSDEC authorized Con Edison to backfill the area.

After the remediation for each residence was completed, the area was backfilled with clean top soil and restored as nearly as possible to the pre-remediation condition. The V. Lockwood residential remediation extended onto the Con Edison property (see Figure 5-11). On the Con Edison property, the excavated area was partially filled with clean stone and backfilled with clean certified fill. The remediation was completed in March 1998. In 2002, NYSDEC requested that additional soil be re-excavated in the area of one sample from the V. Lockwood excavation. The sample, LWE-156, had 1.4 mg/kg of PCBs in soil less than 2 ft deep. The

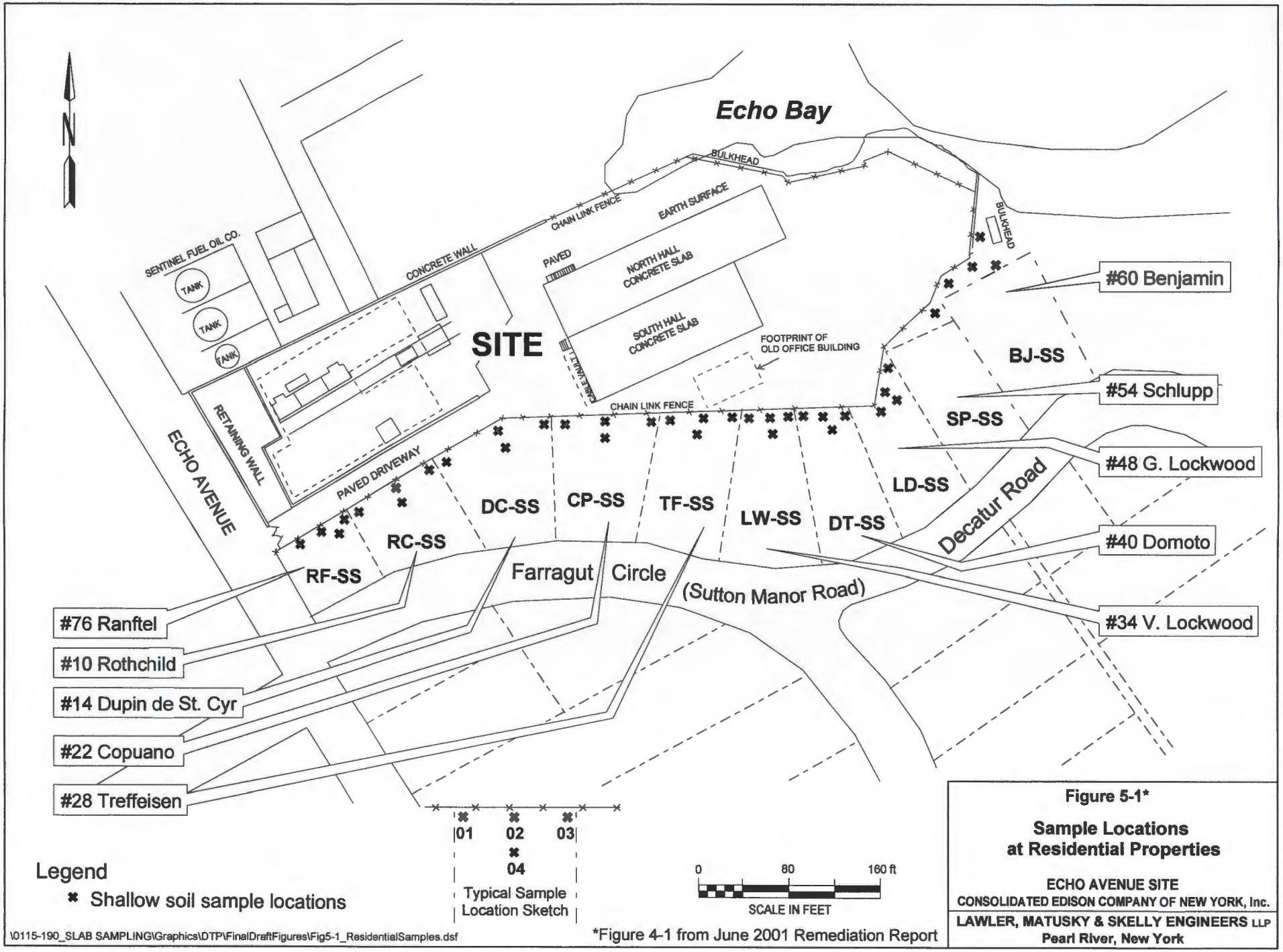


Figure 5-1*

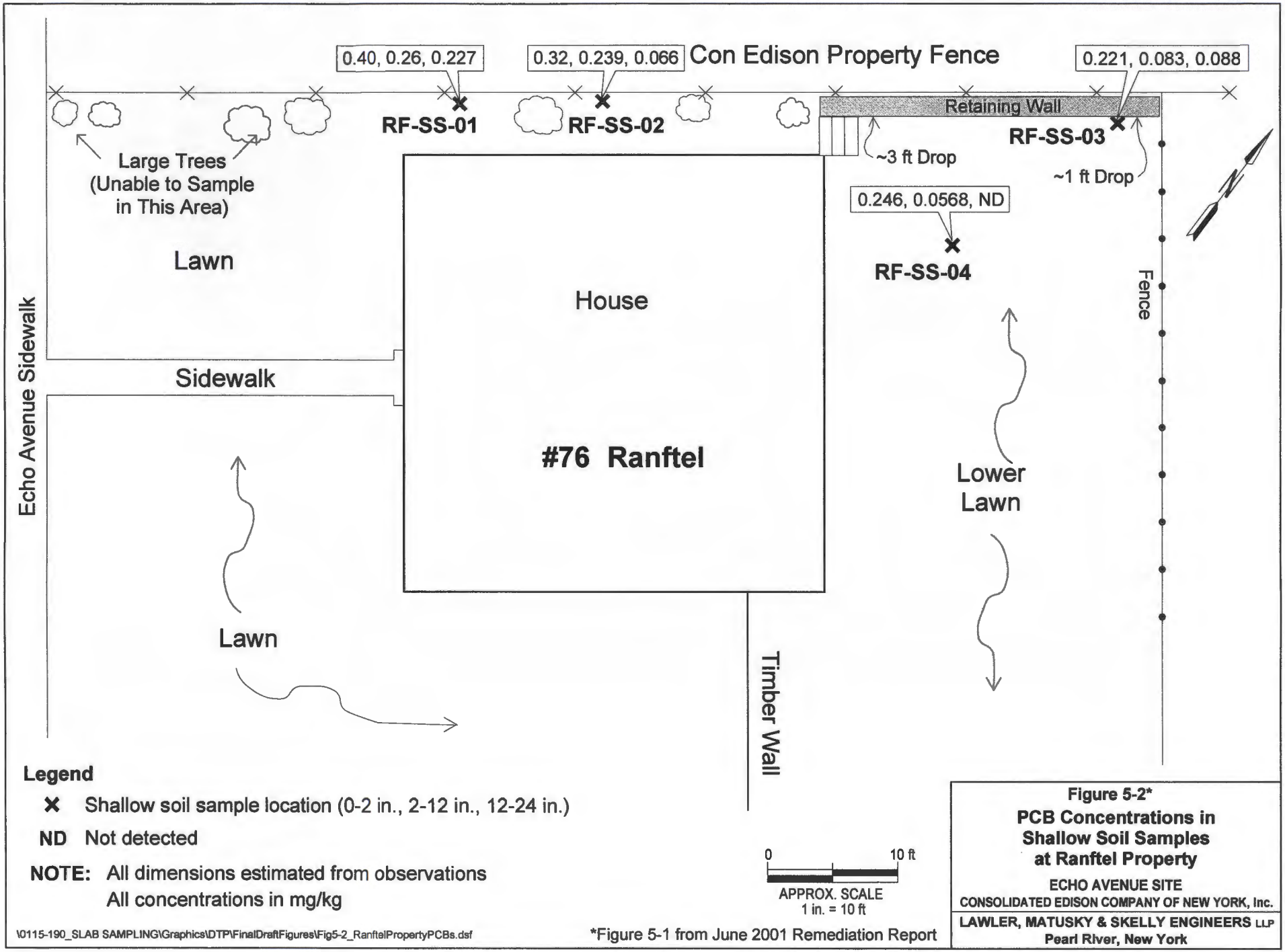
Sample Locations at Residential Properties

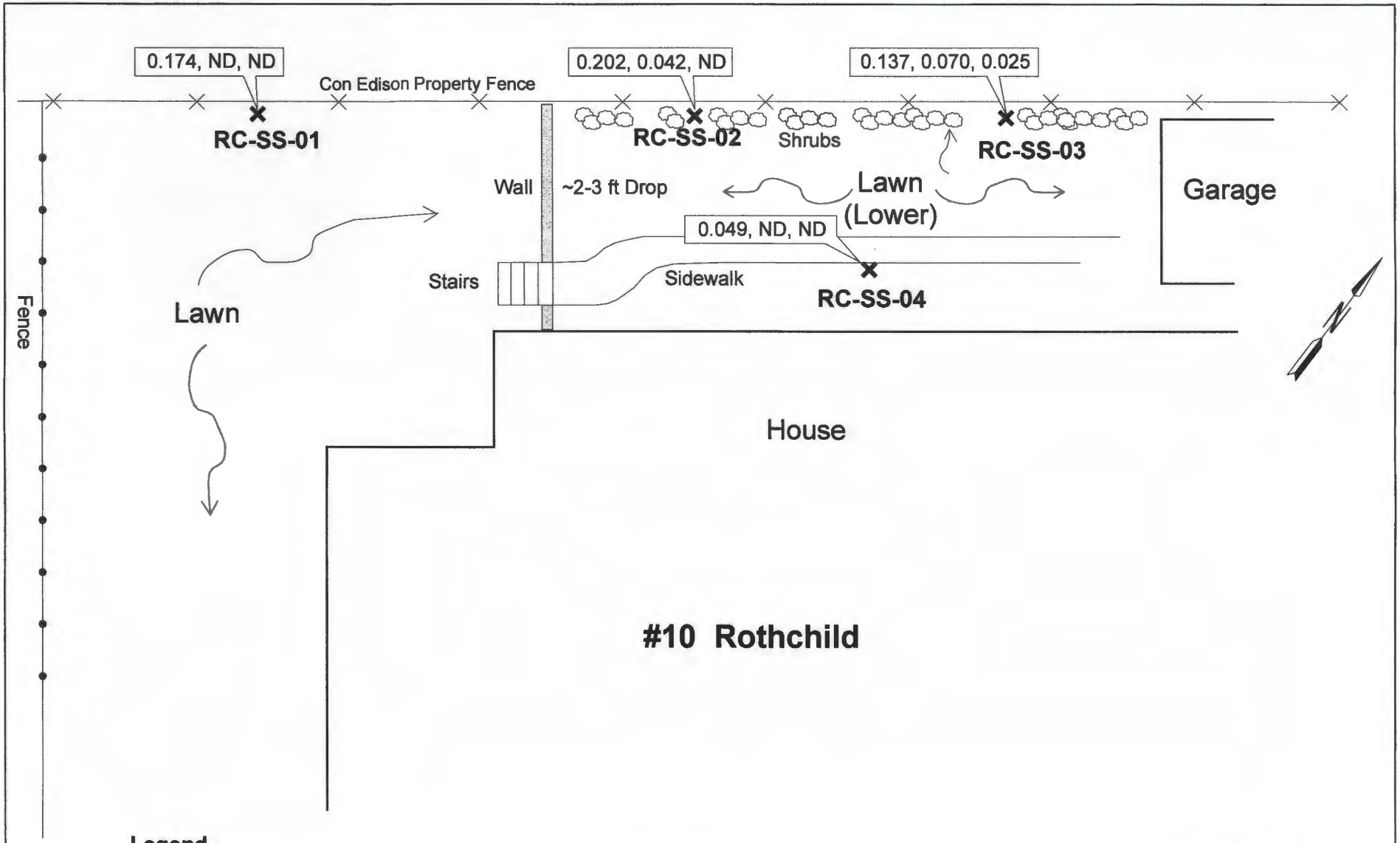
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-1_ResidentialSamples.dsf

*Figure 4-1 from June 2001 Remediation Report


0.40, 0.26, 0.227
0.32, 0.239, 0.066
Con Edison Property Fence
0.221, 0.083, 0.088
RF-SS-01
RF-SS-02
Retaining Wall
RF-SS-03
~3 ft Drop
~1 ft Drop
Large Trees
(Unable to Sample
in This Area)
0.246, 0.0568, ND
RF-SS-04
Lawn
House
Fence
Echo Avenue Sidewalk
Sidewalk
#76 Ranftel
Lower
Lawn
Lawn
Timber Wall
Legend
Shallow soil sample location (0-2 in., 2-12 in., 12-24 in.)
ND Not detected
NOTE: All dimensions estimated from observations
All concentrations in mg/kg
0
10 ft
APPROX. SCALE
1 in. = 10 ft
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-2_RanftelPropertyPCBs.dsf
*Figure 5-1 from June 2001 Remediation Report
Figure 5-2*
PCB Concentrations in
Shallow Soil Samples
at Ranftel Property
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York



Legend

✕ Shallow soil sample location (0-2 in., 2-12 in., 12-24 in.)

ND Not detected

NOTE: All dimensions estimated from observations
All concentrations in mg/kg

0 10 ft
APPROX. SCALE
1 in. = 10 ft

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-3_RothchildPropertyPCBs.dsf

*Figure 5-2 from June 2001 Remediation Report

Figure 5-3*
PCB Concentrations in Shallow Soil Samples at Rothchild Property
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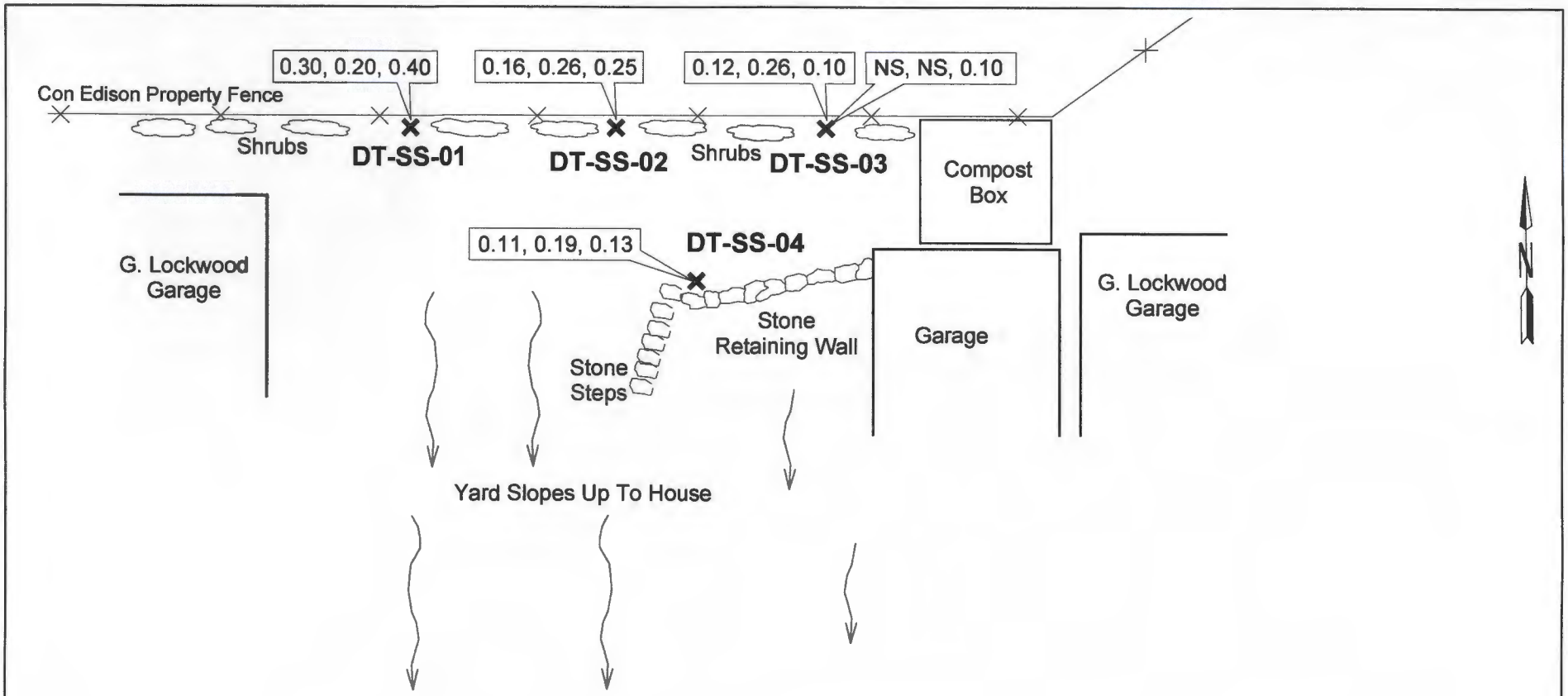
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York



Legend

- ✕ Shallow soil sample location (0-2 in., 2-12 in., 12-24 in.)
- **ND** Not detected
- **NS** Not resampled
- ***** Resample data (February 1997)

NOTE: All dimensions estimated from observations
All concentrations in mg/kg

0 10 ft
APPROX. SCALE
1 in. = 10 ft

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-4_DomotoPropertyPCBs.dsf

*Figure 5-7 from June 2001 Remediation Report

Figure 5-4*

PCB Concentrations in Shallow Soil Samples at Domoto Property

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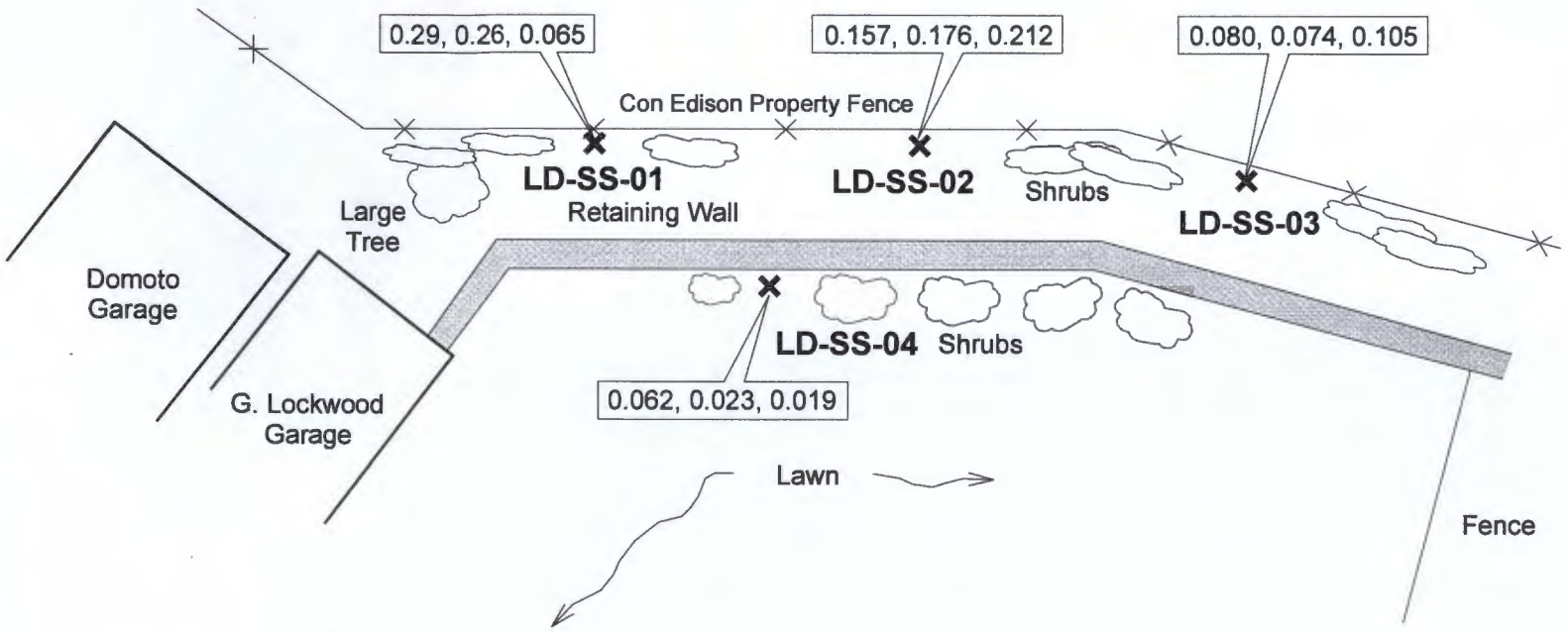

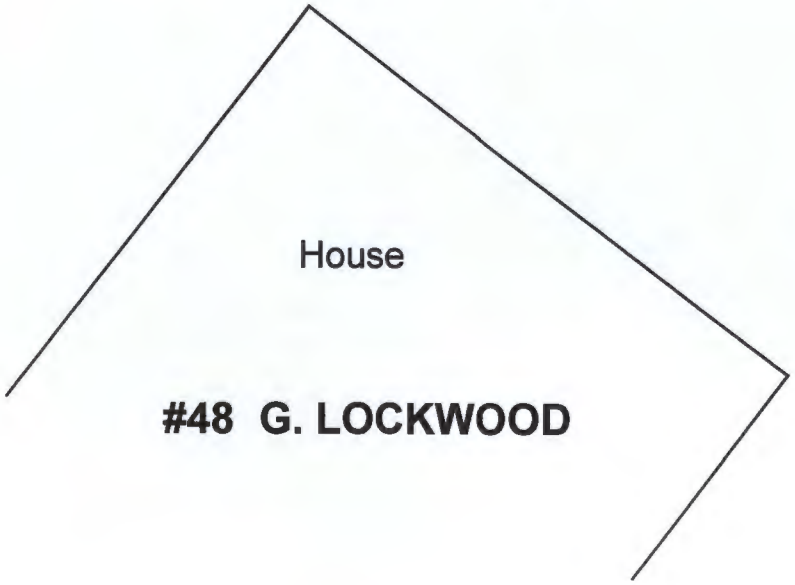

NOTE:
There is a 2 ft drop at retaining wall. It appears that they compost leaves in areas between wall and fence.

Legend

- ✕ Shallow soil sample location (0-2 in., 2-12 in., 12-24 in.)
- **ND** Not detected

NOTE: All dimensions estimated from observations
All concentrations in mg/kg

0 10 ft
APPROX. SCALE
1 in. = 10 ft

Figure 5-5*
PCB Concentrations in Shallow Soil Samples at G. Lockwood Property
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-5_GLockwoodPropertyPCBs.dsf

*Figure 5-8 from June 2001 Remediation Report

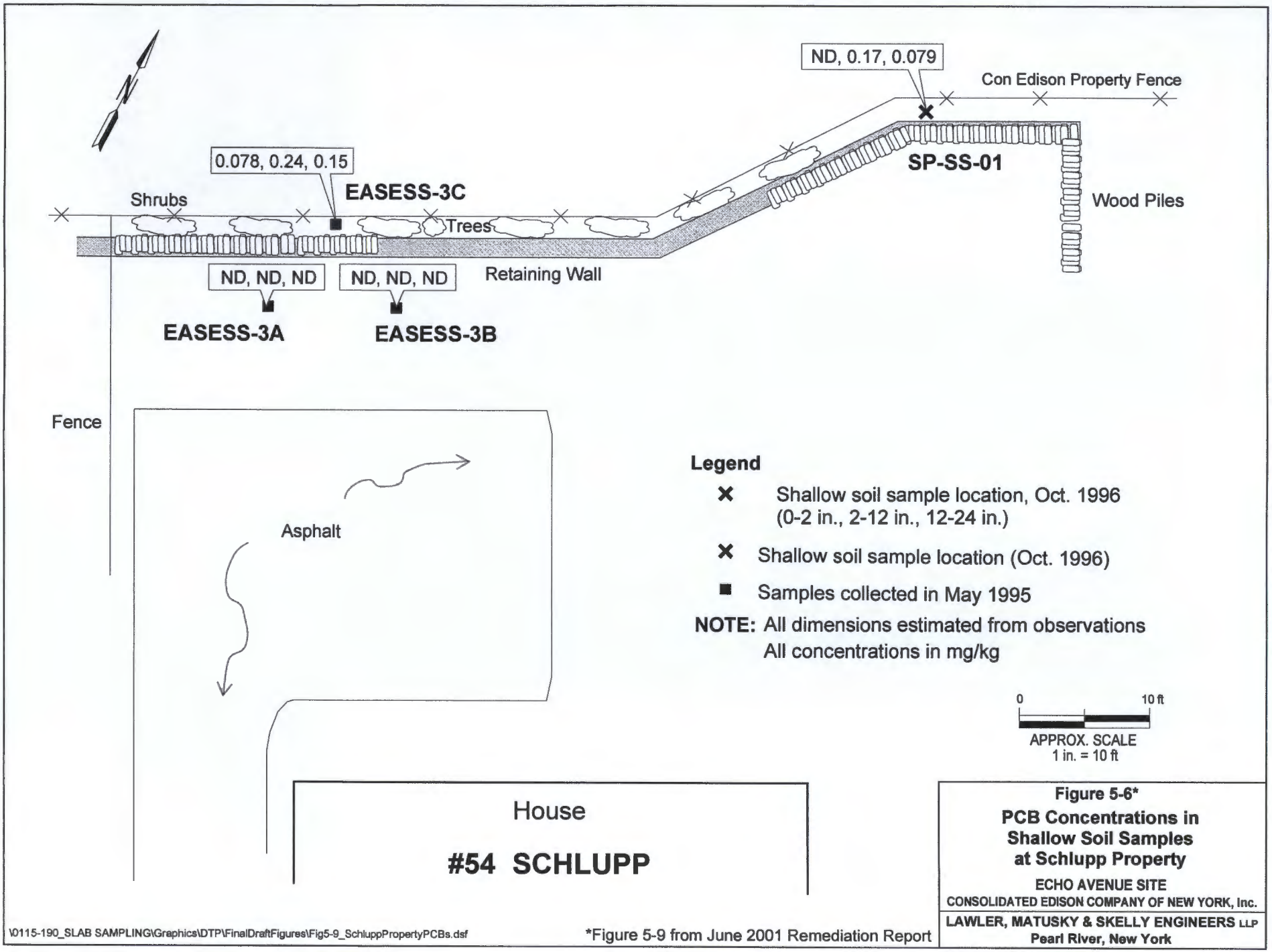

Figure 5-6*

PCB Concentrations in Shallow Soil Samples at Schlupp Property

ECHO AVENUE SITE

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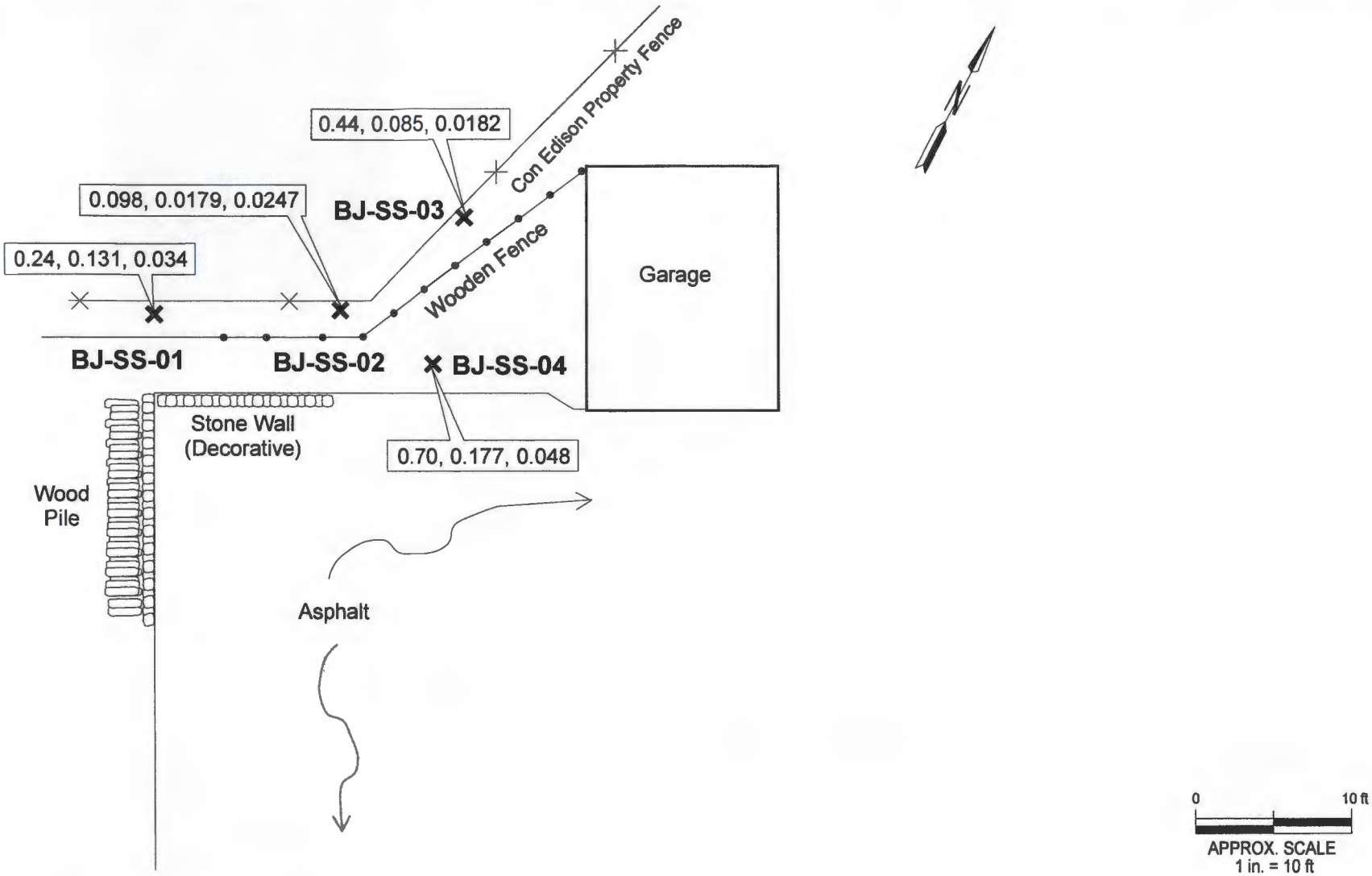
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-9_SchluppPropertyPCBs.dsf

*Figure 5-9 from June 2001 Remediation Report



Legend

✕ Shallow soil sample location
(0-2 in., 2-12 in., 12-24 in.)

NOTE: All dimensions estimated from observations
All concentrations in mg/kg

House

#60 BENJAMIN

Figure 5-7*

PCB Concentrations in Shallow Soil Samples at Benjamin Property

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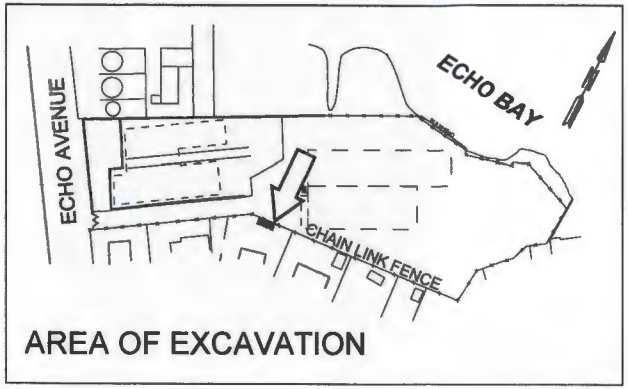
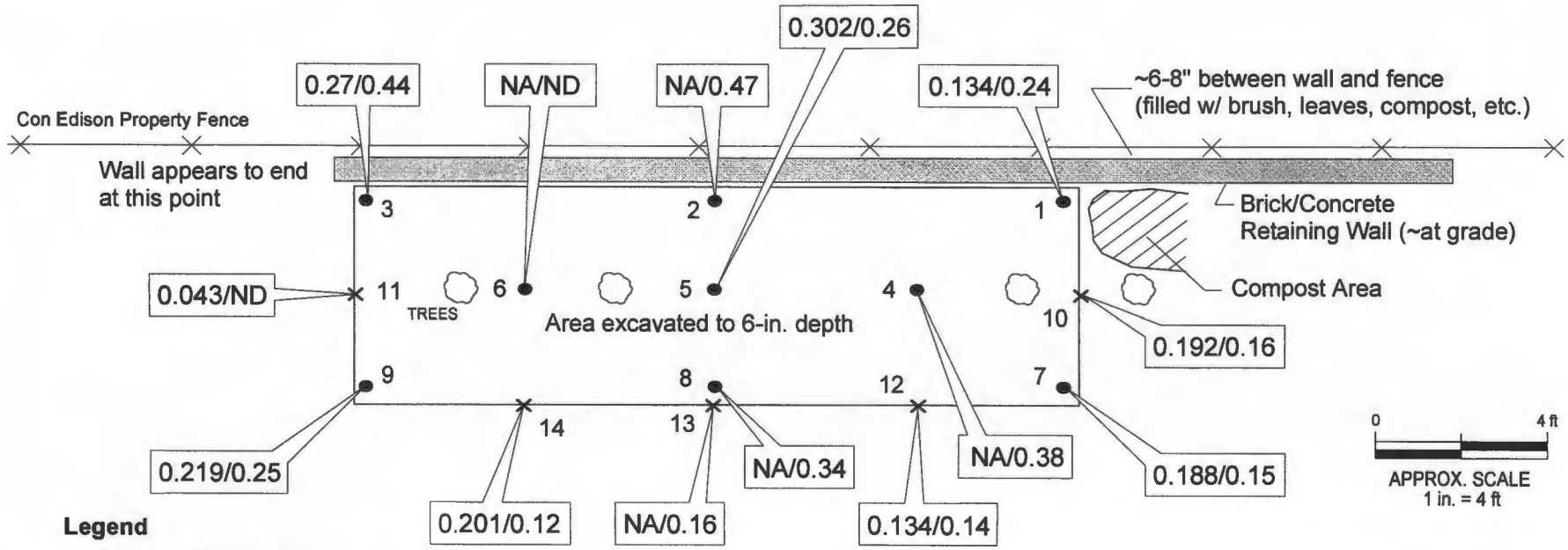
*Figure 5-10 from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-7_BenjaminPropertyPCBs.dsf





Legend

- ● Floor sample
- × Wall sample
- 0.27/0.44 Outside lab results (H2M)/Mobile lab results (STL) PCB concentration (mg/kg)
- NA Not analyzed
- ND Not detected at analytical detection limit

NOTE:
All sample numbers are prefixed with DCE-, e.g., DCE-01

*Figure 7-1 from June 2001 Remediation Report

Figure 5-8*
Dupin de St. Cyr Property
Final Post-Remediation
Sample Locations
and PCB Results
ECHO AVENUE SITE
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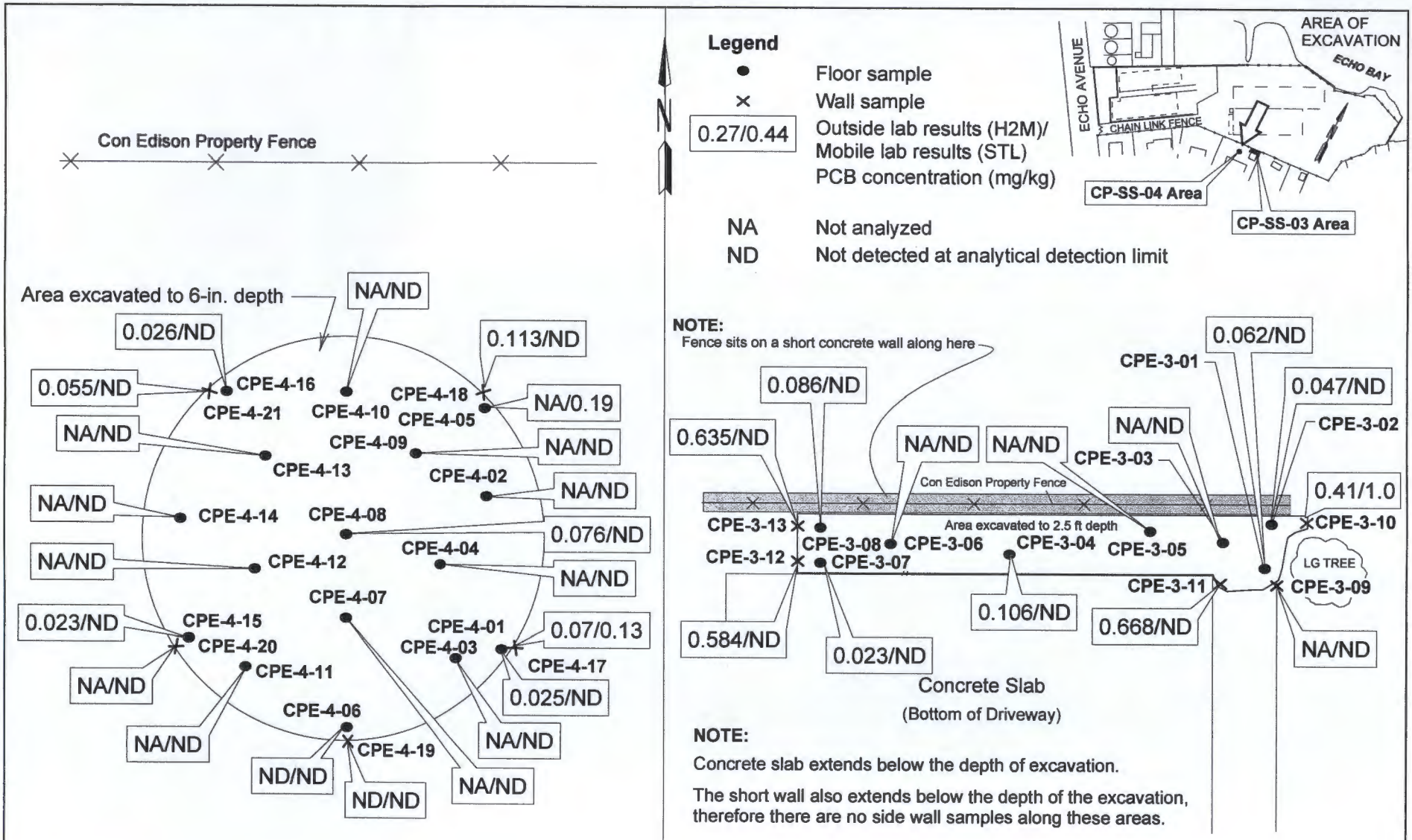
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-8_DupinPropertyPCBs.dsf



\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-9_CopuanoPropertyPCBs.dsf

*Figure 7-2 from June 2001 Remediation Report

Figure 5-9*

Copuano Property
Final Post-Remediation
Sample Locations
and PCB Results

ECHO AVENUE SITE
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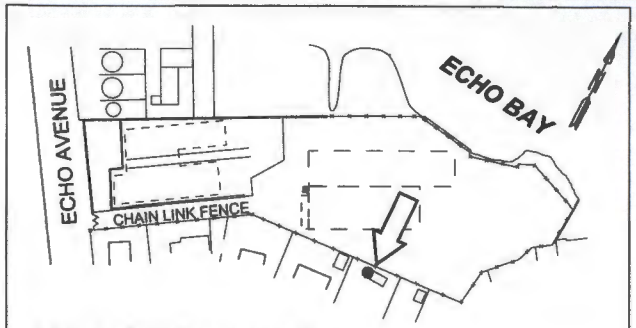
Pearl River, New York



ND/ND NA/ND 0.49/ND
0.33/0.74
TFE-17
TFE-20 TFE-13 TFE-06 TFE-22
NA/ND
NA/ND
TFE-21
NA/ND
NA/ND
0.041/ND
0.92/ND
TFE-15
TFE-09
TFE-05
TFE-03
NA/ND
TFE-12
AREA EXCAVATED T0 6-in. DEPTH
TFE-02
TFE-23
NA/ND
7'
FOOTING FOR SWING SET
ND/ND
NA/ND
TFE-24
NA/ND
NA/ND
ND/ND
TFE-14
TFE-01
NA/ND
0.028/ND
TFE-19
TFE-11
NA/ND
TFE-04
TFE-25
0.397/ND
TFE-08
NA/ND
TFE-10
NA/ND
TFE-07
TFE-18
TFE-16
0.032/ND
NA/ND
0.233/ND

Concrete Ramp

Playground Area

(Old Garage Slab/Foundation)

CREVICE BETWEEN RAMP AND SLAB (~4" WIDE)

Legend

- ● Floor sample
- × Wall sample
- 0.27/0.44 Outside lab results (H2M)/ Mobile lab (STL) results PCB concentration (mg/kg)
- NA Not analyzed
- ND Not detected at analytical detection limit

NOT TO SCALE

Figure 5-10*
Treffeisen Property
Final Post-Remediation Sample Locations and PCB Results
ECHO AVENUE SITE
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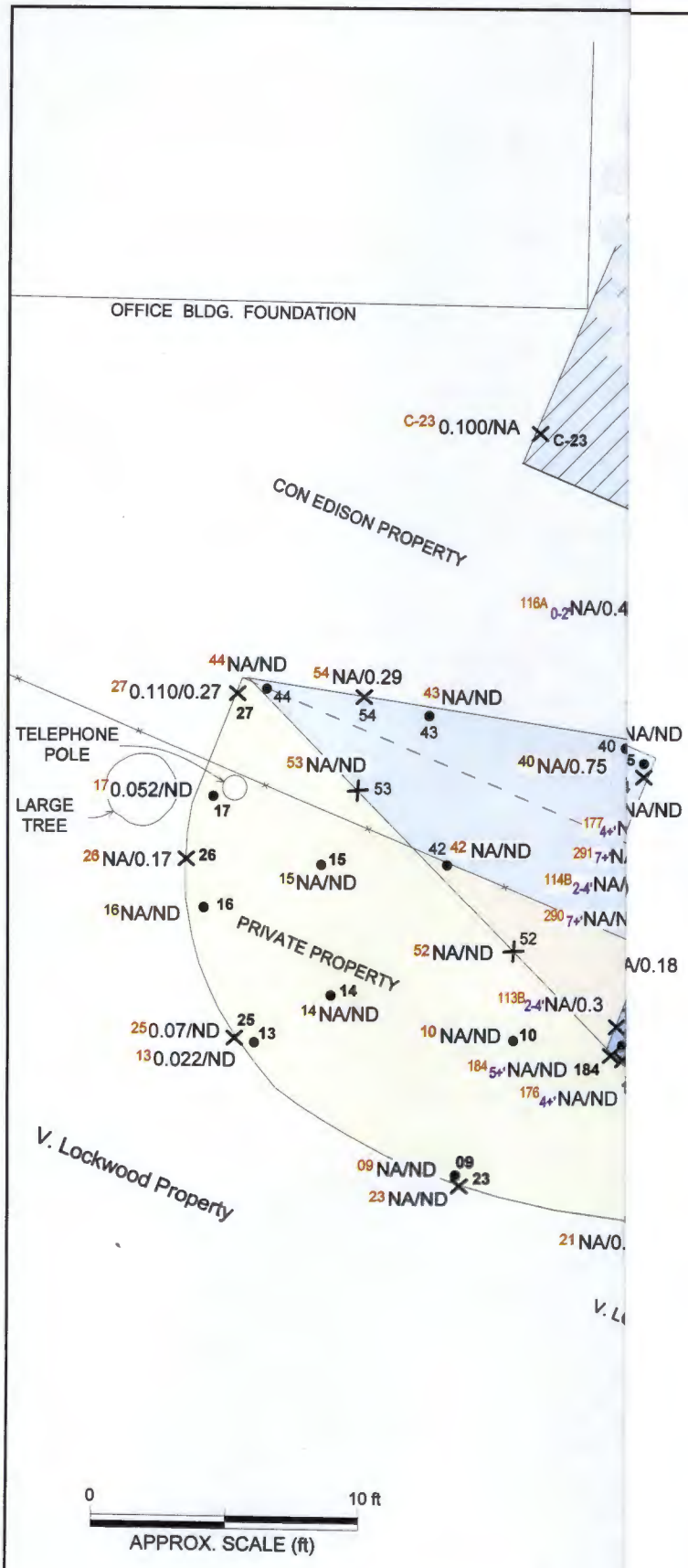
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-10TreffeisenPropertyPCBs.dsf

*Figure 7-3 from June 2001 Remediation Report



Legend

- 0.5 ft below grade
- 1+ ft below grade
- 2+ ft below grade
- 2+ ft below grade, Additional excavation, 2002
- 6+ ft below grade
- 7+ ft below grade
- 8+ ft below grade
- Concrete pier, not excavated
- Construction and demolition debris

12 × Wall sample

34 • Floor sample

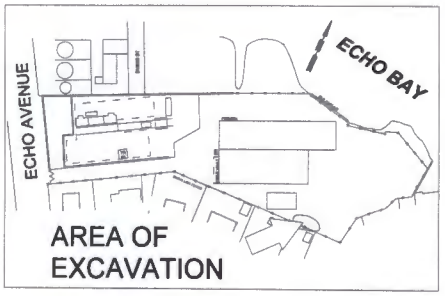
NA Not analyzed

ND No detection

Note: All PCB results in mg/kg

Sample reference no.
Outside lab (H2M) results
123 5+' NA/0.11
Mobile lab (STL) results
Sample depth if different than indicated color

Note: For sample ID all sample numbers are prefixed with LWE-, e.g., LWE-123 (not shown on map to conserve space)



\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-11_VLockwoodPropertyE

diation Report, and
Report Addendum

Figure 5-11*

Lockwood Property Final 2002 Post-Remediation Excavation Soil Sample Locations and PCB Results

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
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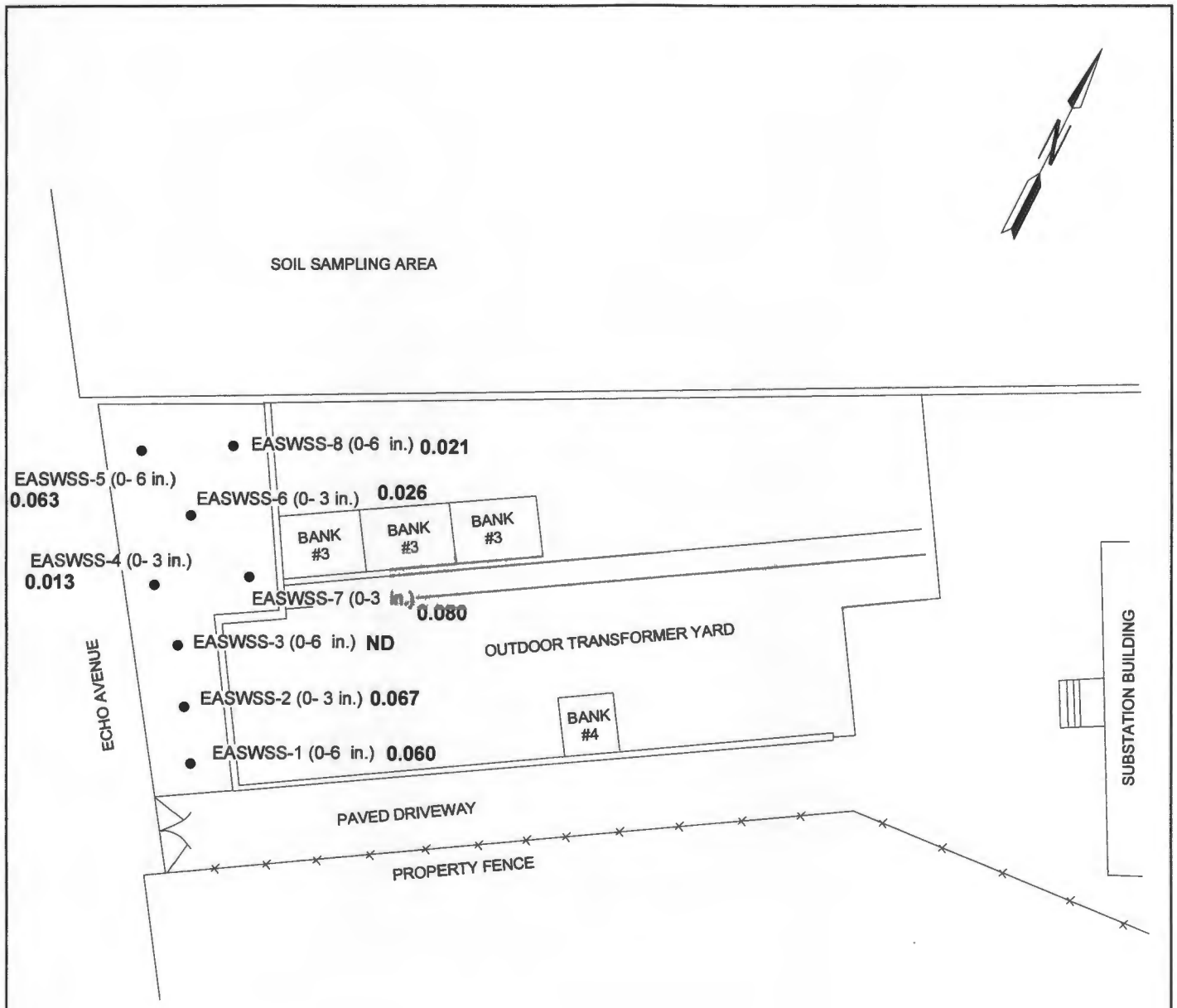
initial results of this wall sample from the mobile laboratory indicated it was below 1 mg/kg; however, the mobile laboratory data were reviewed in a QC process by the analytical laboratory. The revised results (1.4 mg/kg) were received after the excavation area had already been backfilled. This location was on the Con Edison property portion of the excavation area. The results of the additional excavation that was required by the NYSDEC have been added to Figure 5-11. The area was backfilled with clean certified backfill after the confirmatory sample results were received.

5.1.2 On-Site Soils (Other than Soils Addressed in Sections 5.1.3-5.1.6)

As part of the Phase II investigation conducted on the site in 1992, shallow soil samples and deeper soil samples were collected on-site. At two areas, EASW and EASE, shallow soils were sampled in 1992 (see Figure 5-12 and 5-13, formerly Figures 4-20 and 4-18, respectively, from the February 1993 Phase II Investigation report). Figure 5-13 also shows the data collected from soil borings constructed on the site in 1992. With the exception of soils collected during the construction of monitoring well MW-6, all samples were analyzed only for PCBs. At six additional scattered locations throughout the Site, shallow soil samples were collected and labeled with the EADEC prefix. Three of the samples, EADEC-B, D, and E were analyzed for TCL organics and TAL inorganics; all of the remaining samples were analyzed for PCBs only (see Figure 5-14, formerly Figure 4-19 from the February 1993 Phase II Investigation report for location). None of the samples in the EASW area or in the deeper boring samples had PCBs above 1 mg/kg; therefore, no remediation was required. One of the six samples from the EADEC locations (EADEC-E with 12.0 mg/kg) and two of the EASE locations (EASESS-3 with 6.2 mg/kg and EASESS-7 with 1.09 mg/kg) had PCBs above the RSCO of 1 mg/kg. These areas were subsequently remediated as part of the 1997-1998 remediation as described later in this Section.

Table 5-1, formerly Table 4-18 from the 1993 Phase II Report, summarizes the TCL organic and TAL inorganic results from the three EADEC locations (EADEC-B, C, and E) where samples were collected for these locations. The 1994 TAGM 4046 RSCOs have been added Table 5-1 for comparison. The results showed no TCL organics above the cleanup levels in samples EADEC-B and D. Selected metals were above either the cleanup objective or the eastern USA background soil concentration range. The metals found in the shallow soil were attributed to the fill material used on the Site. NYSDEC did not request that either of these areas be remediated for the metals contamination. The sample from EADEC-E had two SVOCs, one pesticide, and several metals, including lead, above the cleanup level in addition to and exceedance for PCBs. The EADEC-E area was subsequently remediated as part of the 1997-1998 remediation, as described later in this Section.



0 50 100 ft

SCALE
1 in. = 50 ft

LEGEND

- • Soil sample point
- **ND** No detection
- **NOTE:** Concentration units = mg/kg

*Figure 4-20 from February 1993 Phase II Investigation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-12_PCBconcShallowSoilSWendOfPpty

Figure 5-12*

PCB Concentrations Shallow Soil Samples at Southwestern End of Property

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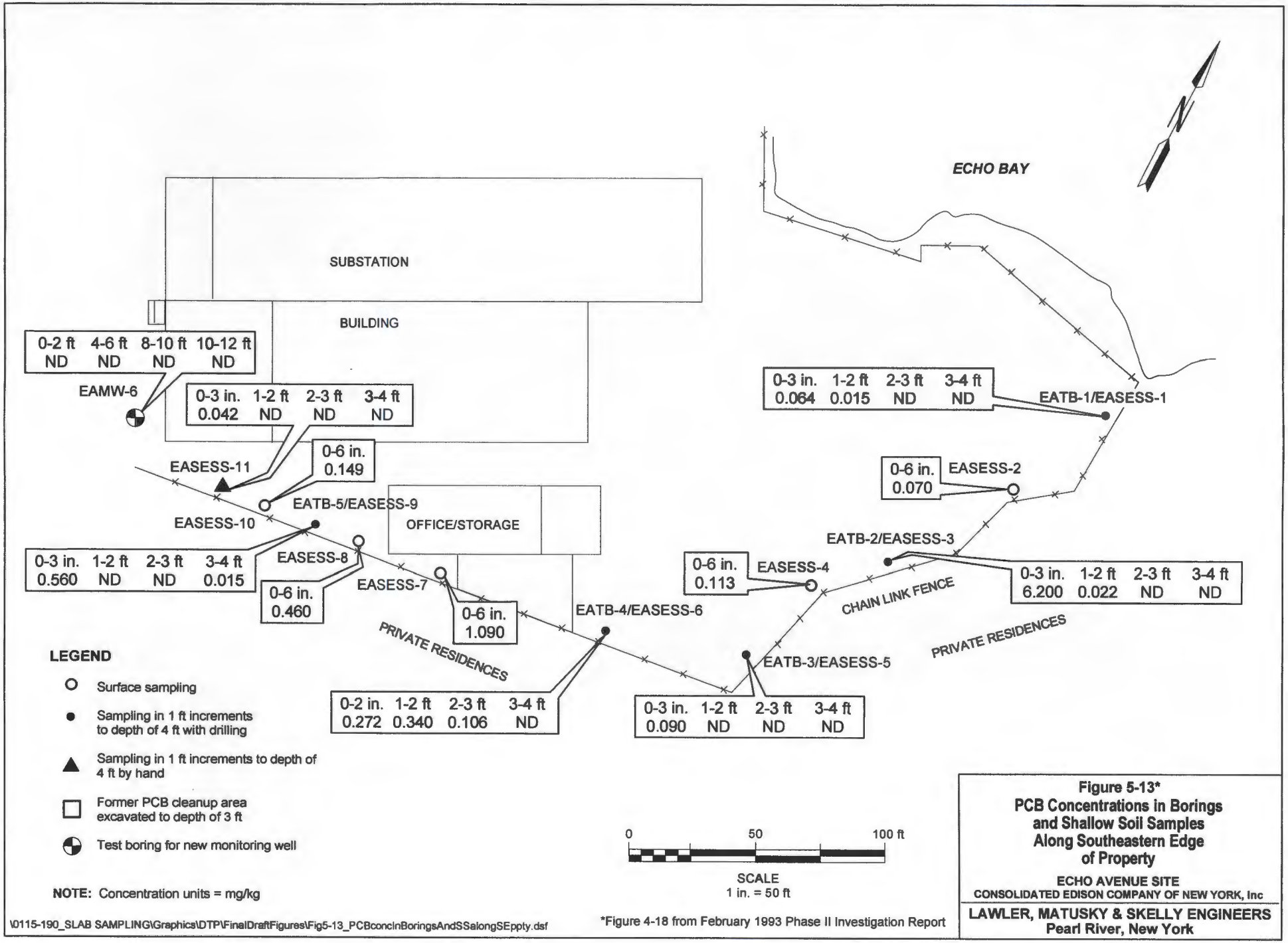

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-13_PCBconcInBoringsAndSSalongSEppty.dsf

*Figure 4-18 from February 1993 Phase II Investigation Report

Figure 5-13*
PCB Concentrations in Borings and Shallow Soil Samples Along Southeastern Edge of Property

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc

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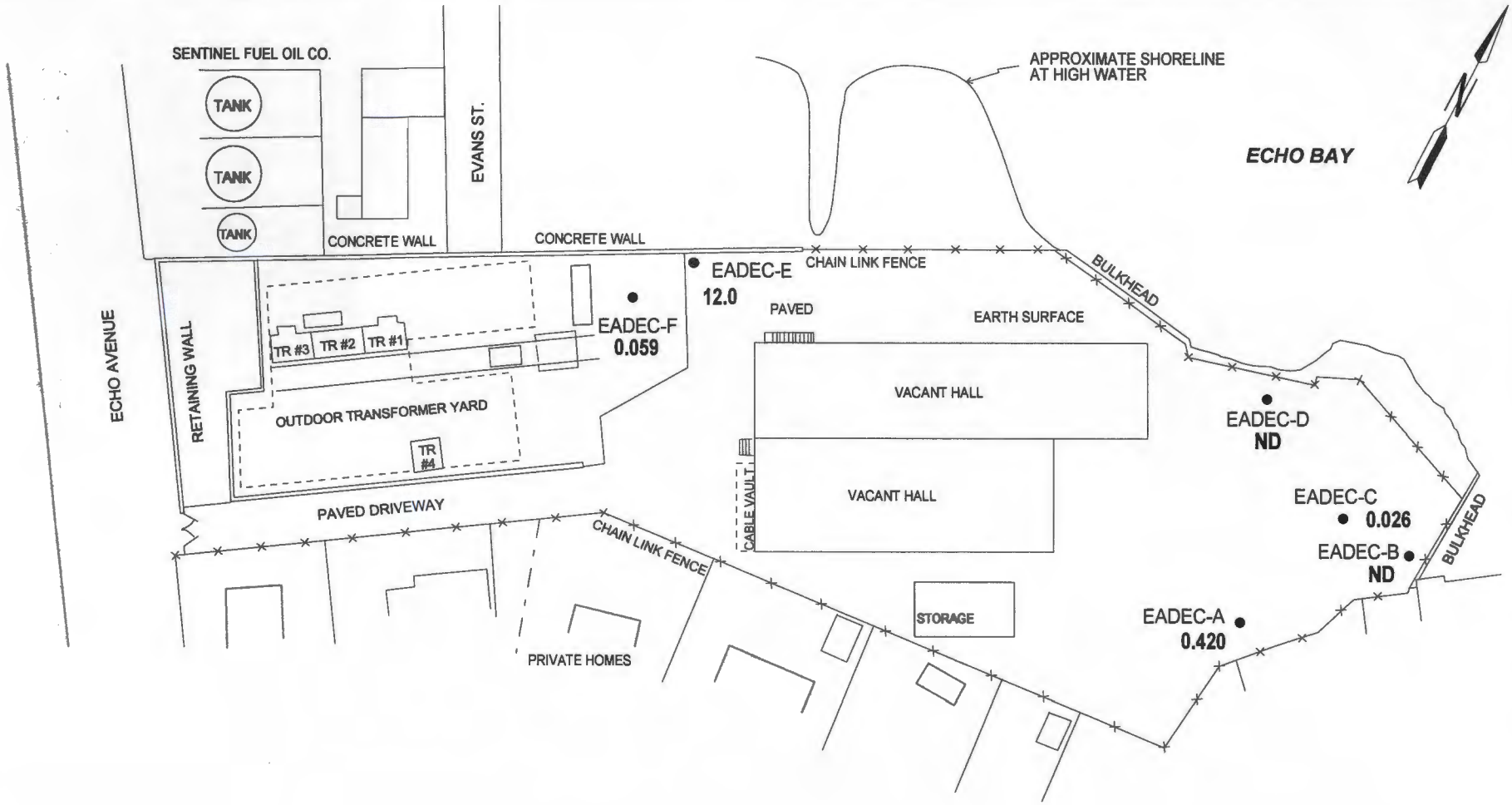

LEGEND

- ● Soil sample point
- **ND** No detection
- **NOTE:** concentration units = mg/kg

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 4-19 from February 1993 Phase II Investigation Report

Figure 5-14*

PCB Concentrations at NYSDEC Shallow Soil Sample Locations

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-14_PCBconcNYSDECsssLocations.dsf

Originally Table 4-18 (February 1993 Phase II Investigation Report)

SHALLOW SOIL SAMPLE DATA SUMMARY (JULY 1992)

CON EDISON - ECHO AVENUE

PARAMETER	EADEC-B (0-6 in.)	EADEC-D (0-6 in.)	EADEC-E (0-6 in.)	RE/DL EADEC-E (0-6 in.)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)	ND	ND	ND	ND		NA
SEMIVOLATILE ORGANICS (mg/kg)						
Naphthalene	ND	0.130j	ND	♦	13	NA
2-Methylnaphthalene	ND	ND	0.240j	♦	36.4	NA
Phenanthrene	ND	ND	0.66	♦	50.0 ***	NA
Anthracene	ND	ND	0.220j	♦	50.0 ***	NA
Fluoranthene	0.180j	0.120j	1.5	♦	50.0 ***	NA
Pyrene	0.160j	0.110j	1.6	♦	50.0 ***	NA
Benzo(a)anthracene	ND	ND	**1.0**	♦	0.224 or MDL	NA
Chrysene	ND	ND	**1.2**	♦	0.4	NA
bis(2-Ethylhexyl)phthalate	0.200j	0.250j	0.450j	♦	50.0 ***	NA
Benzo(b)fluoranthene	ND	ND	1.1	♦	1.1	NA
Benzo(k)fluoranthene	ND	ND	0.640	♦	1.1	NA
Benzo(a)pyrene	ND	ND	**1.0**	♦	0.061 or MDL	NA
Indeno(1,2,3-c,d)pyrene	ND	ND	ND	0.510j	3.2	NA
Benzo(g,h,i)perylene	ND	ND	ND	0.52	50.0 ***	NA
PESTICIDES/PCBs (mg/kg)						
Heptachlor epoxide	ND	ND	0.016px	ND	0.02	NA
Endosulfan I	ND	ND	0.036pxe	ND	0.9	NA
Dieldrin	ND	ND	**0.10xe**	ND	0.044	NA
4,4'-DDE	0.0018jp	ND	ND	ND	2.1	NA
Endrin	ND	ND	0.095px	ND	0.10	NA
Endosulfan II	ND	ND	0.098pxe	ND	0.9	NA
4,4'-DDD	ND	ND	0.021x	ND	2.9	NA

Originally Table 4-18 (February 1993 Phase II Investigation Report)

SHALLOW SOIL SAMPLE DATA SUMMARY (JULY 1992)

CON EDISON - ECHO AVENUE

PARAMETER	EADEC-B (0-6 in.)	EADEC-D (0-6 in.)	EADEC-E (0-6 in.)	RE/DL EADEC-E (0-6 in.)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
PESTICIDES/PCBs (mg/kg) (Continued)						
4,4'-DDT	ND	ND	0.049px	ND	2.1	NA
Methoxychlor	ND	ND	0.073pxe	ND	***	NA
Endrin ketone	ND	ND	0.017jpx	ND	NA	NA
Endrin aldehyde	ND	ND	0.025pxe	ND	NA	NA
Endosulfan sulfate	ND	ND	0.075pxe	ND	1.0	NA
α-Chlordane	0.0016j	ND	ND	ND	0.54	NA
β-Chlordane	0.0019p	ND	0.043px	ND	0.54	NA
Aroclor 1254	ND	ND	**8.2**	**12.0**	1.0/10*	NA
Aroclor 1260	0.42	ND	ND	ND	1.0/10*	NA
METALS (mg/kg)						
Aluminum	4,060	8,800	7,460	♦	SB	33,000
Antimony	4.0	**20.3**	8.0 B	♦	SB	0.6 - 10 (n)
Arsenic	6.8 SA	**91.5 SA**	4.9	♦	7.5 or SB	3.0 - 12.0 æ
Barium	161	216	124	♦	300 or SB	15 - 600
Beryllium	**2.4**	1.5	1.2 B	♦	0.16 or SB	0 - 1.75
Cadmium	**1.4**	**1.7**	**7.6**	♦	1 or SB	0.1 - 1.0
Calcium	**128,000**	**56,200**	36,700	♦	SB	130 - 35,000 æ
Chromium	9.8	25.6	**85.4**	♦	10 or SB	1.5 - 40.0 æ
Cobalt	4.2	6.9 B	6.7 B	♦	30 or SB	2.5 - 60.0 æ
Copper	16.7	**101**	**160**	♦	25 or SB	1.0 - 50.0
Iron	8,630	15,300	14,600	♦	2,000 or SB	2,000 - 550,000
Lead	105 N SA	279 N	**2030 N**	♦	SB**	4.0 - 61 or 200 - 500**
Magnesium	**61,700**	**28,100**	**7,780**	♦	SB	100 - 5,000
Manganese	152	375	332	♦	SB	50 - 5,000
Mercury****	**0.13 N**	**1.2 N**	**0.44 N**	♦	0.1	0.001 - 0.2

Originally Table 4-18 (February 1993 Phase II Investigation Report)

SHALLOW SOIL SAMPLE DATA SUMMARY (JULY 1992)

PARAMETER	CON EDISON - ECHO AVENUE EADEC-B (0-6 in.)	EADEC-D (0-6 in.)	EADEC-E (0-6 in.)	RE/DL EADEC-E (0-6 in.)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
METALS (mg/kg) (Continued)						
Nickel	8.5	14.7	**34.3**	♦	13 or SB	0.5 - 25
Potassium	1,670	1,940	887 B	♦	SB	8,500 - 43,000 æ
Selenium	ND W	ND	ND W	♦	2 or SB	0.1 - 3.9
Silver	ND	ND	ND	♦	SB	0.1 - 5.0 (n)
Sodium	98.0	190 B	200 B	♦	SB	6,000 - 8,000
Thallium	ND	ND	ND	♦	SB	0.1 - 0.8 (q)
Vanadium	13.2	29.0	35.9	♦	150 or SB	1.0 - 300
Zinc	**51.7**	**278**	**1,640**	♦	20 or SB	9.0 - 50
Cyanide	ND	ND	ND	♦	****	N/A

Note : Numbers in bold exceed objectives.

♦ - Not analyzed.

*** - As per TAGM #4046, total VOCs < 10 ppm., total SVOCs < 500 ppm, individual SVOCs < 50 ppm, and total Pesticides < 10 ppm.

(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

b - Found in associated blanks.

* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.

** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.

æ - New York State background concentration.

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.

(q) - Bowan, H.J., Environmental Chemistry of the Elements.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

ND - Not detected at analytical detection limit.

SB - Site background.

SA - Value determined by the method of standard addition.

W - Post-digestion spike out of control limits;sample absorbance is less than 50% of spike absorbance.

N - Spike sample recovery is not within control limits.

***** - Mercury results are likely biased low as the MS recovered 30.8%; actual concentration may be greater than those reported.

RE - Re-extracted

DL - Diluted sample

In 1995, additional shallow soil samples were collected around three of the sample points (EASESS-3, EASESS-7, and, EADEC-E) that had PCBs >1 mg/kg in the 1992 samples. These areas were subsequently remediated as part of the 1997-1998 remediation, as described later in this Section. Several borings were installed in 1994 by Con Edison; the sample from the 0-2 ft interval at one location (Boring B-3) showed PCBs of 2.2 mg/kg; additional samples were collected in 1995 to delineate the extent of the contamination at this location. This area, B-3, was also subsequently remediated as part of the 1997-1998 remediation, as described later in this Section

Figure 5-15, a composite figure of Figures 7-5a to g from the June 2001 Remediation Report, documents the PCB levels remaining at the EASESS-3 area after the remediation was completed in March 1998. The area was backfilled with certified clean backfill; the deeper areas were backfilled in lifts to ensure proper compaction. The area was backfilled to the original grade and covered with a layer of wood chips.

Figure 5-16, a composite of Figures 7-6a to e taken from the June 2001 Remediation Report, shows the remaining PCBs after the remediation was completed at the EASESS-7 area in February 1998. The excavated area on the east end met the limits of the V. Lockwood excavation and extended onto the Treffeisen property along the fence line to the south. At the request of NYSDEC, concrete samples were collected from the former office building foundation wall on the northwest side of the excavation; the concrete sample results as shown on Figure 5-17, formerly Figure 7-7 from the June 2001 Remediation Report, were all less than 1 mg/kg. Note that the office building had been demolished and the first floor slab removed by Con Edison in 1995. After the final results were received, and the results verified that the cleanup objectives were met, the area was backfilled with clean certified backfill to the original grade. The bottom of the deep excavation area (excavated to 5 ft deep) was backfilled with clean crushed stone to ensure proper compaction would be obtained. The Treffeisen side of the property line was replanted with shrubs and ground cover, and the Echo Avenue site was covered with wood chips.

The EADEC-E area was remediated from December 1997 to January 1998. Figure 5-18, a composite of Figures 7-8a and b taken from the June 2001 Remediation Report, document the remaining levels of PCBs from this area. Sump EASP-01, which was also located in the area, was removed. As described above in Section 4.2, sample EA-25 was also collected from this area in 1998 and analyzed for TCL organics and TAL inorganics. The results, provided in Table 4-2 of this document, showed TAGM 4046 SVOC and metals exceedances, most likely due to the presence of a substance similar to dielectric fluid, which was probably the source of the contamination found in 1992 at the same location. After the results were reviewed and found acceptable by the NYSDEC, the area was backfilled with certified clean fill and covered with wood chips. This area was further excavated down to a depth of six feet as part of the 2003

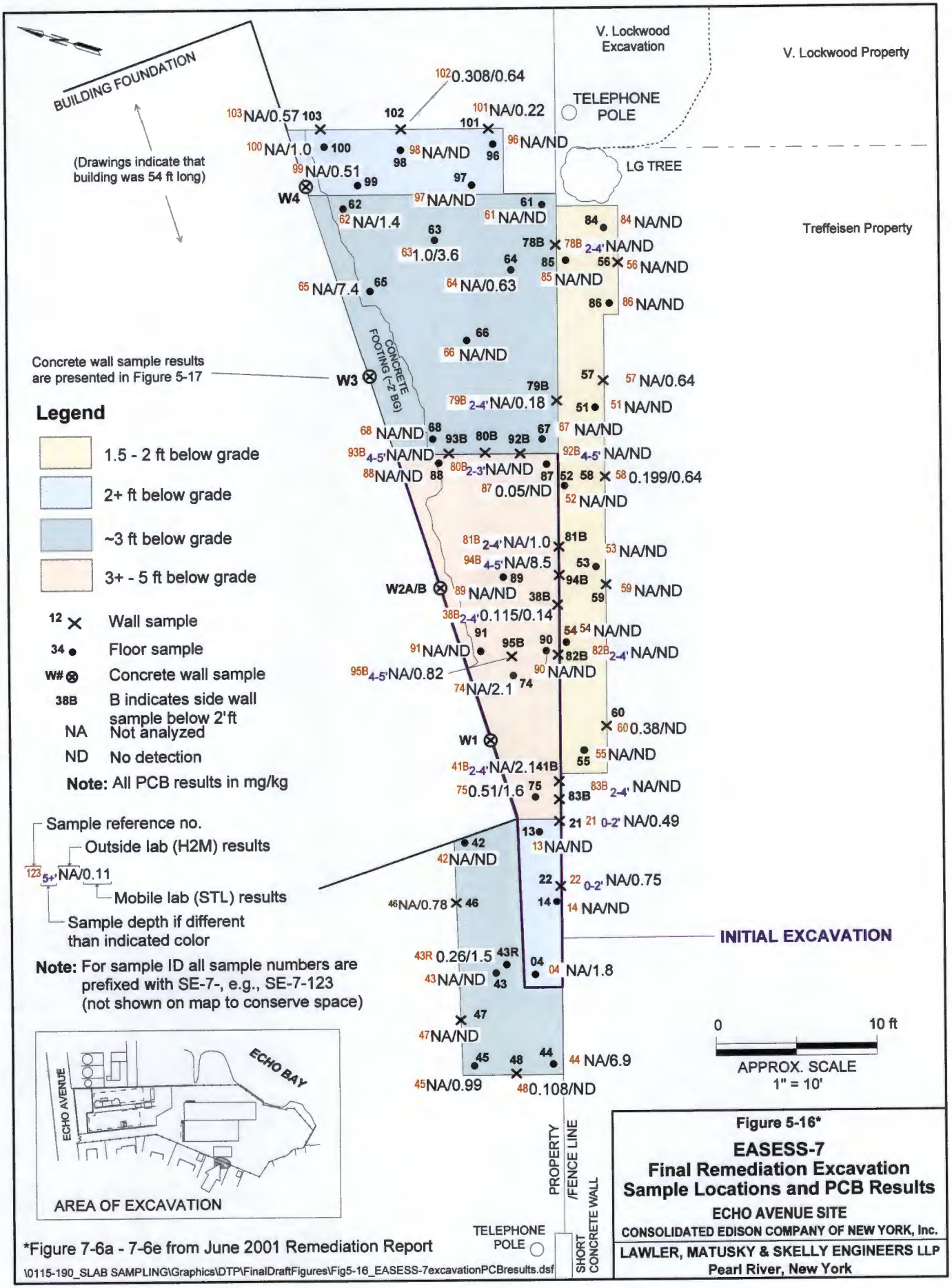

*Figure 7-6a - 7-6e from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-16_EASESS-7excavationPCBresults.dsf

Figure 5-16*

EASESS-7
Final Remediation Excavation Sample Locations and PCB Results

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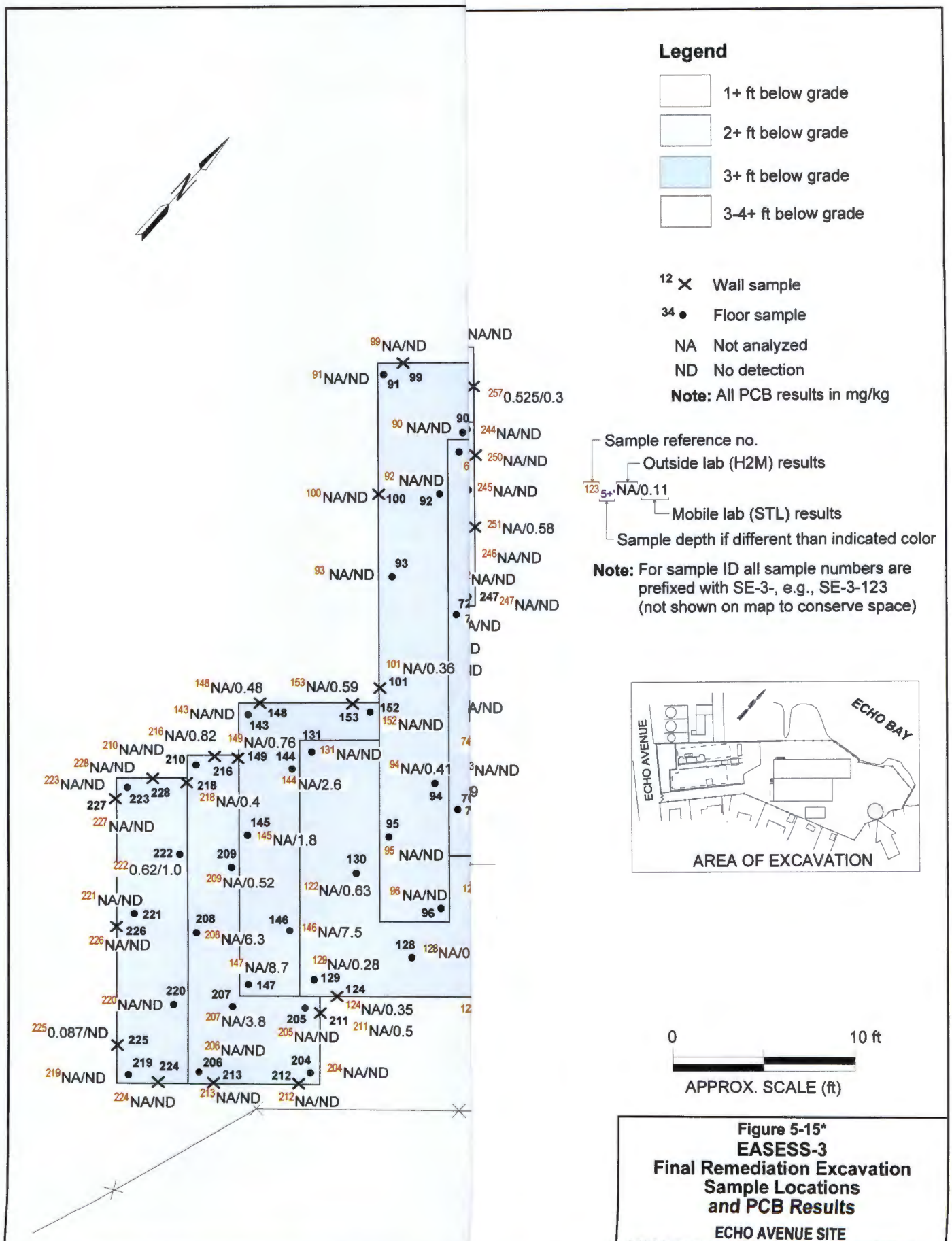
Pearl River, New York



\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-15_EASESS-3excavation

Figure 5-15*
EASESS-3
Final Remediation Excavation Sample Locations and PCB Results

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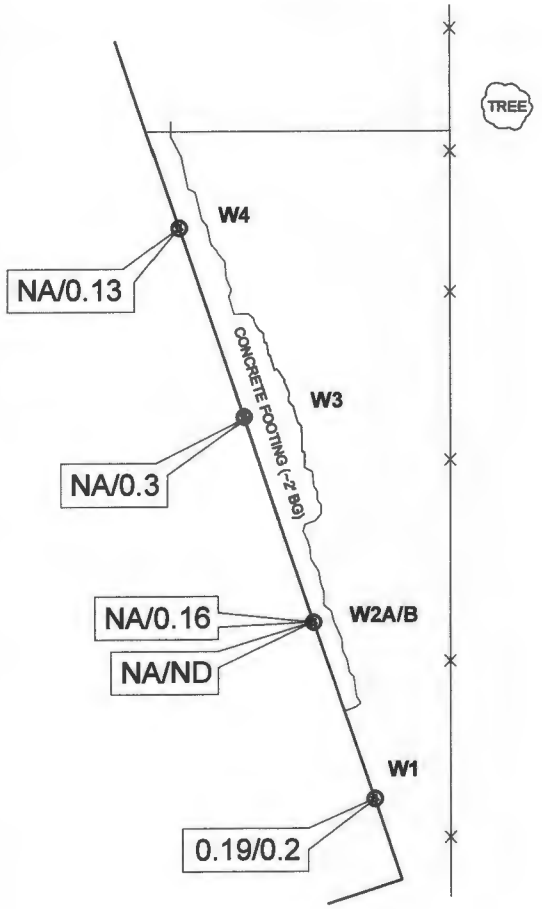
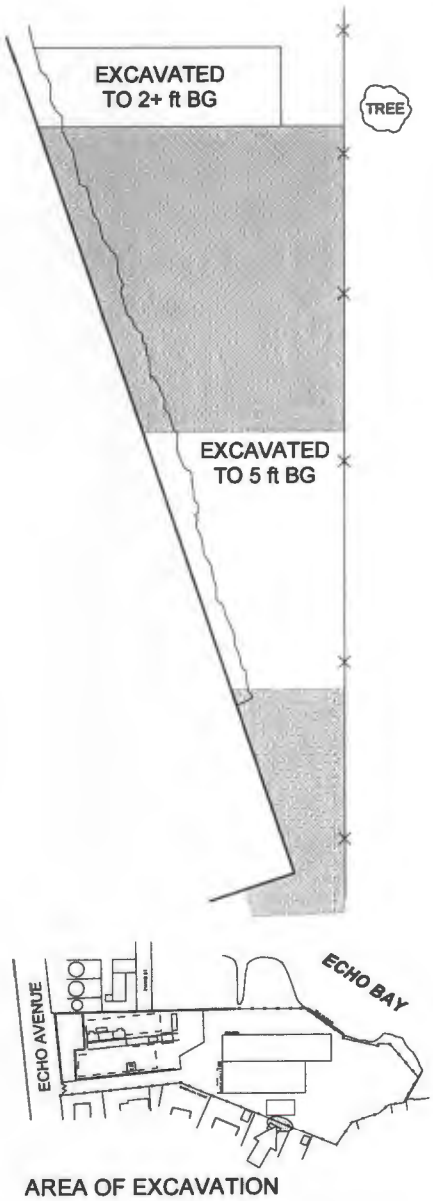
EASESS-7
(Concrete Samples From Building Foundation)



EASESS-7
(East End Extension and Deep Pipe Area)



AREA OF EXCAVATION

- • Floor sample
- × Wall sample
- ⊛ Concrete wall sample
- A Designates wall sample from above 2 ft
- B Designates wall sample from below 2 ft

0.27/0.44 Outside lab (H2M) results/ Mobile lab (STL) results PCB concentration (mg/kg)

NA Not analyzed

ND Not detected at analytical detection limit

NOTE: For sample ID all sample numbers are prefixed with SE-7- e.g. **SE-7-21**

0 10 ft

APPROX. SCALE
1" = 10'

*Figure 7-7 from June 2001 Remediation Report

Figure 5-17
EASESS-7
Final Remediation Excavation
Concrete Sample Locations
and PCB Results
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\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-17_EASESS-7ConcreteSamplePCBresults.dsf

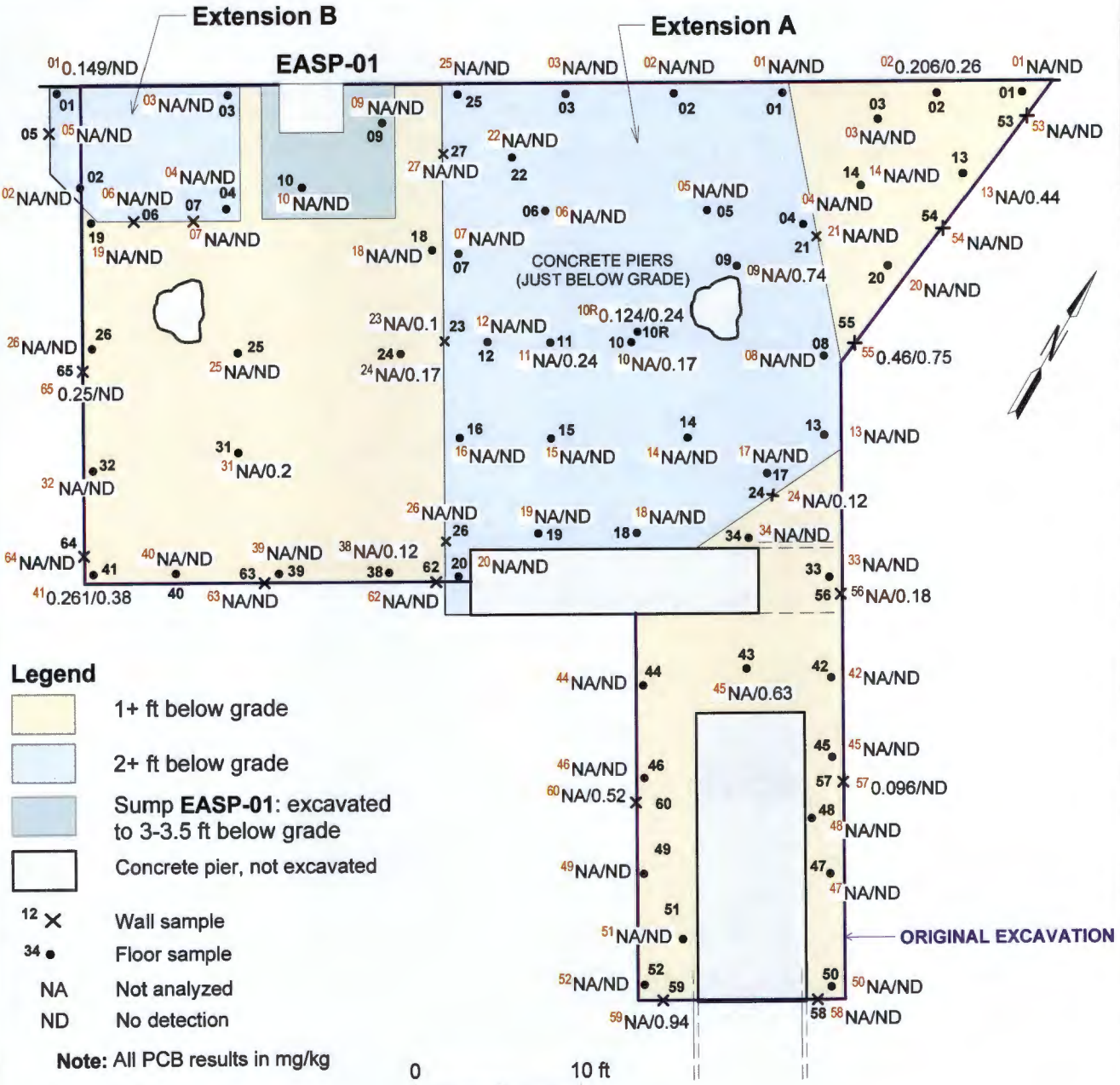

*Figure 7-8a and b from June 2001 Remediation Report

Figure 5-18*

EADEC-E/F
Final Remediation Excavation Sample Locations and PCB Results

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\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-18_EADEC-EFexcavationPCBresults.dsf

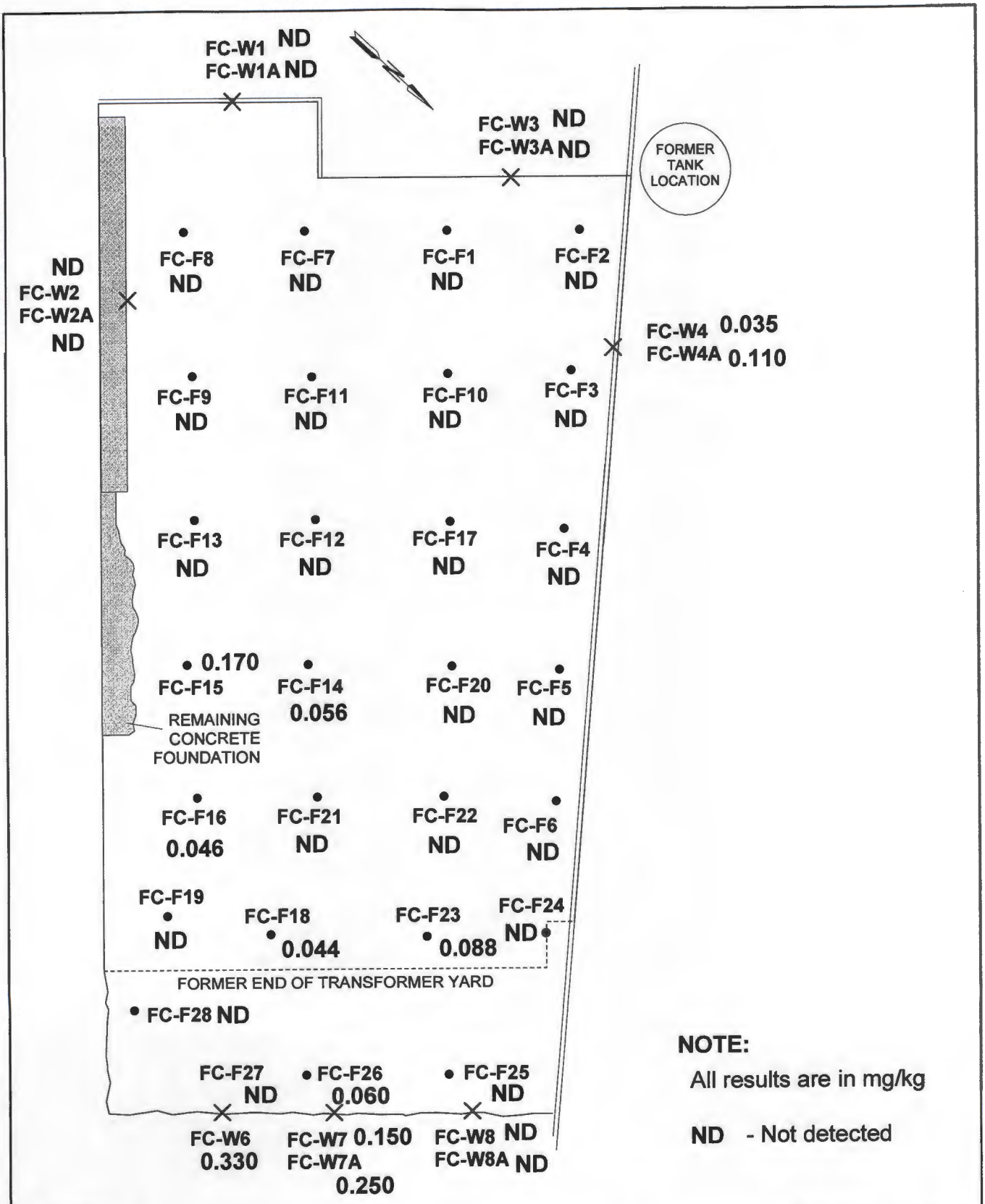
remediation of the transformer yard area. Figure 5-19, formerly Figure 5-5 from the July 2003 Remediation Report Addendum, shows the final PCB concentrations from the transformer yard excavation. Samples FC-F25, FC-W8 and FC-W8a were taken in the vicinity of the EADEC-E remediation, and all had no detectable PCBs.

Area B-3 was remediated as a result of a sample collected from a boring installed in April 1994 that contained 2.2 mg/kg of PCBs. Figure 5-20, formerly Figure 7-9 from the June 2001 Remediation Report, shows the PCB contamination remaining after the remediation of this area was completed in December 1997. The location of the original boring is also shown on the figure. The area was backfilled with certified clean fill to the original grade and covered with wood chips.

5.1.3 On-Site Soils beneath the Substation Building Slabs

The substation building was demolished down to the slab by Con Edison in 1995. Prior to demolition, the basement area, at the western end of the building (see Figure 1-2), was dewatered and concrete chip samples were collected from the basement and basement storage area. These results are provided on Figure 5-21, formerly Figure 4-1 from the ***Second Report on Sampling Required in Revised Addendum No. 2 Final Work Plan*** (the "April 1996 Second Report") dated April 1996 (Ref. 10, Appendix A). The concrete in the basement contained low levels of PCBs with two samples having PCBs of 3.37 and 3.61 mg/kg; all other samples were less than 1 mg/kg. The NYSDEC determined that the area did not require additional remediation and authorized Con Edison to proceed with backfilling the basement with debris from the building demolition.

The South Hall substation slab was removed as part of the 1999-2000 remediation. Catch basin CB-05, the tile drainpipes from catch basins CB-04 and CB-05, and the drainpipe that ran along the outside of the foundation wall on the south side were all removed as part of this remediation effort. Figure 5-22, formerly Figure 6-61 from the June 2001 Remediation Report, shows the locations of the catch basins and drainpipes in both the North and South Halls of the substation building. Confirmatory PCB soil samples were collected to verify that the PCB cleanup objectives and been met. These results are shown on Figure 5-23, formerly Figure 7-21a from the June 2001 Remediation Report. Additional samples were collected from two concrete structures near the common foundation wall between the two halls that may have been related to the intake and discharge of water from the bay when the facility was a coal-fired electric generating station. These sample results are shown on Figure 5-24, formerly Figure 7-23 from the June 2001 Remediation Report. There appeared to be a series of shallow brick sluiceways under the slab of the South Hall. A number of gate-type valves were found in these shallow brick channels. Some of the confirmatory PCB samples were collected from material in these sluiceways to ensure they were not contaminated with PCBs (see Figure 5-24 of this Report).



NOTE:

All results are in mg/kg

ND - Not detected

LEGEND

× Wall sample

FC-W# 2 ft sample depth.

FC-W#A > 2 ft sample depth

• Floor sample

FC-F#

0 50 ft

APPROX. SCALE
1 in. = 50 ft

*Figure 5-5 from July 2003 Remediation Report Addendum

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-19_TransformerYardPCBresults.dsf

Figure 5-19*

Transformer Yard
Post-Excavation Confirmatory
PCB Soil Sample Results

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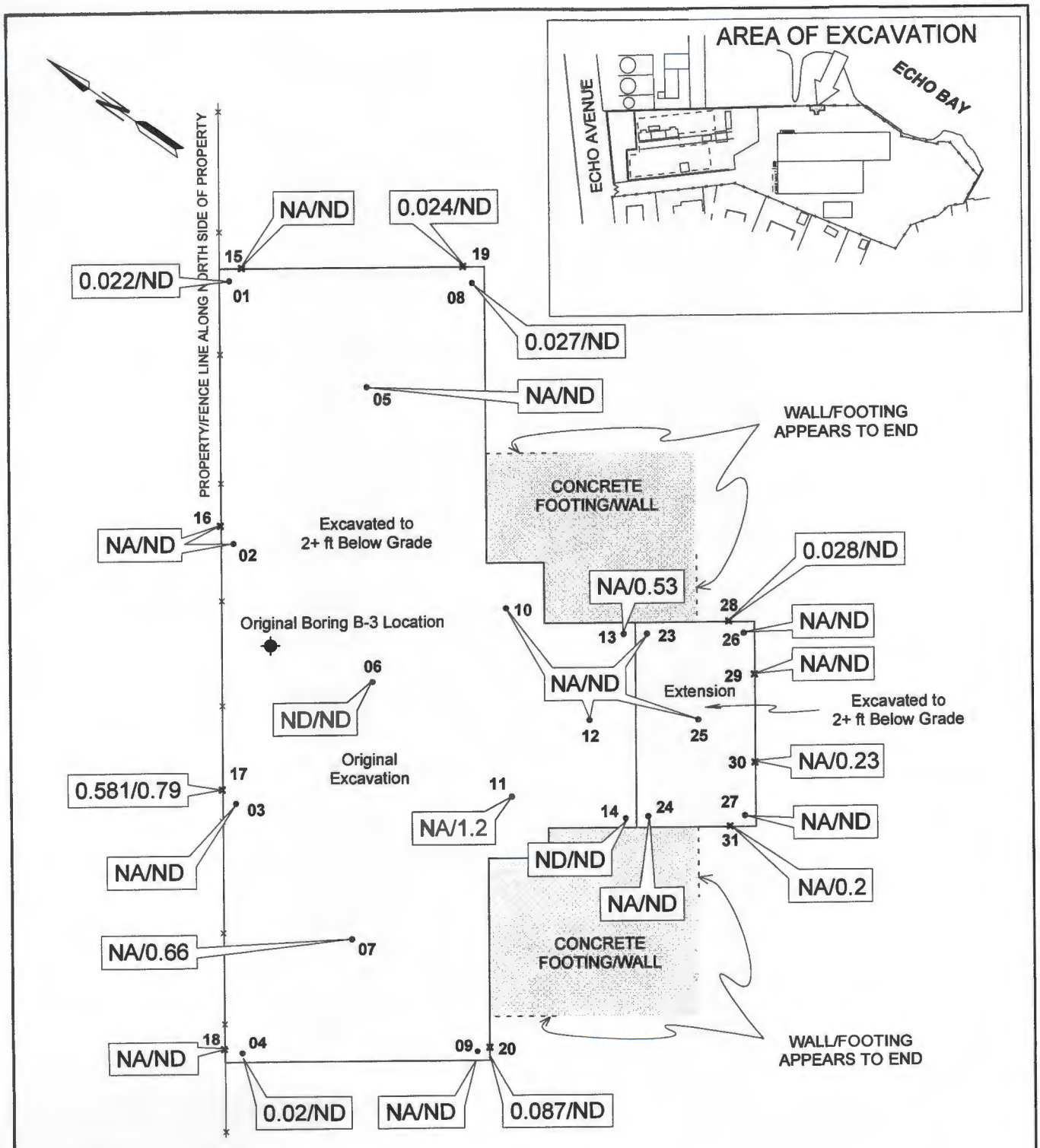

Legend

- • Floor sample
- × Wall sample
- B Side wall sample below 2 ft

0.27/0.44 Outside lab (H2M) results/ Mobile lab (STL) results PCB concentration (mg/kg)

NA Not analyzed

ND Not detected at analytical detection limit

0 5 ft

APPROX. SCALE 1" = 5'

NOTE:

For sample ID all sample numbers are prefixed with B-3- e.g. **B-3-01**

Figure 5-20*

B-3

Final Remediation Excavation Sample Locations and PCB Results

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*Figure 7-9 from June 2001 Remediation Report

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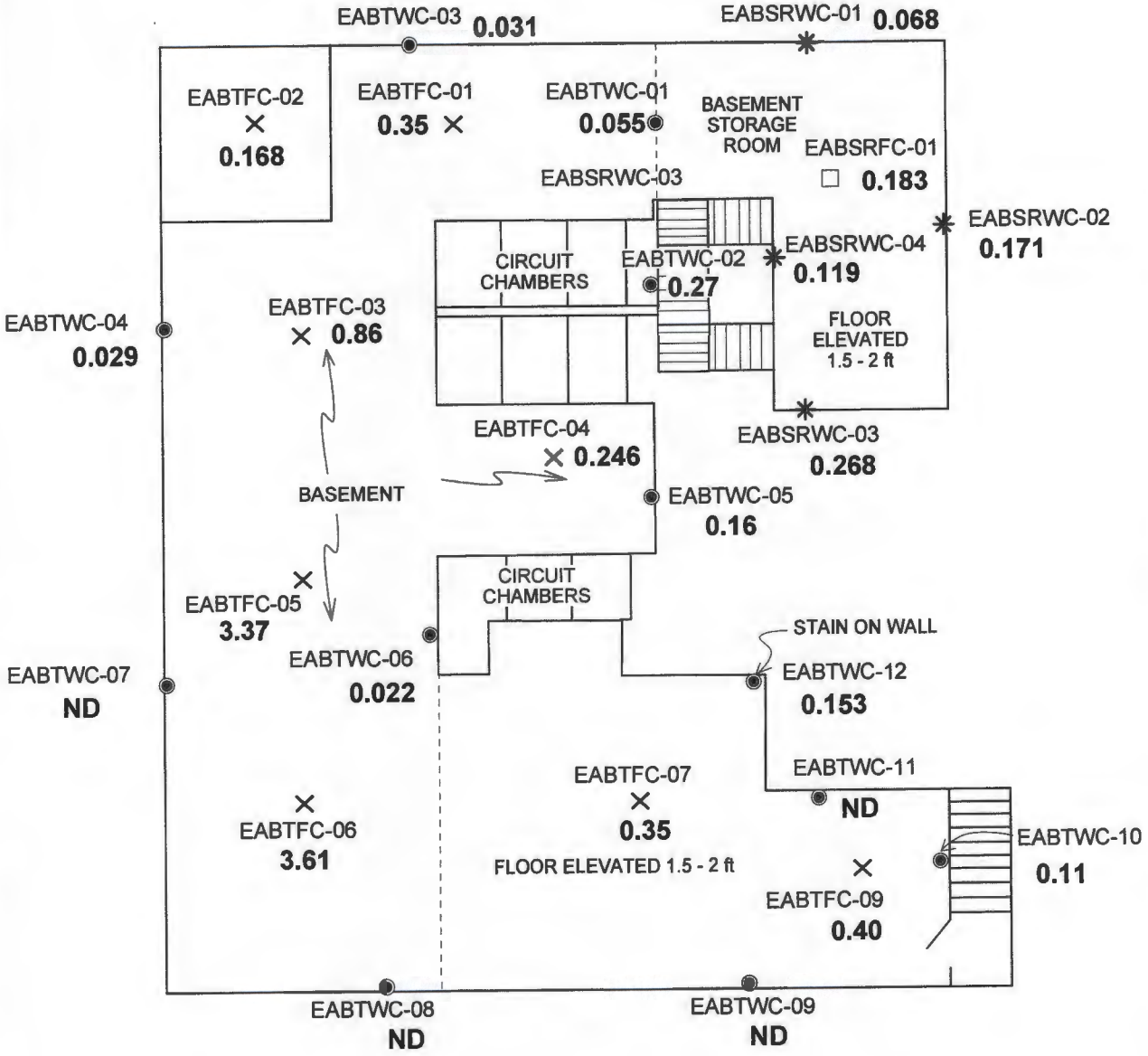

LEGEND

- ● Basement core wall samples
- ✱ Basement storage room core wall samples
- × Basement core floor samples
- □ Basement storage room core floor sample

0 10 ft

SCALE
1 in. = 10 ft

NOTE: All results are in mg/kg

*Figure 4-1 from April 1996 Second Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\
Fig5-21_BasementStorageRoomConcCorePCBresults.dsf

Figure 5-21*

PCB Concentrations in Basement and Basement Storage Room Concrete Core Samples

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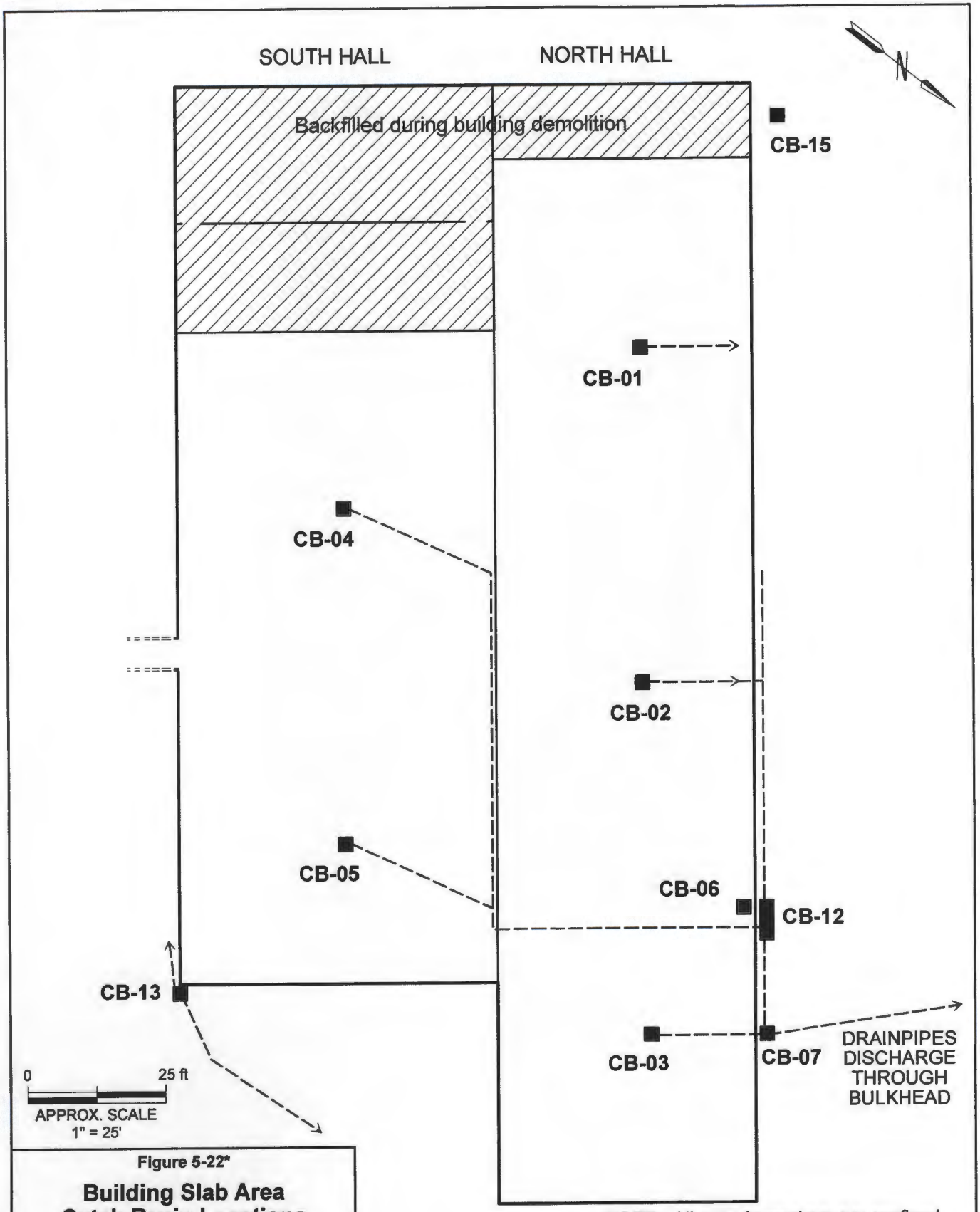

Figure 5-22*

Building Slab Area Catch Basin Locations

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Pearl River, New York

NOTE: All sample markers are prefixed with NH-, e.g. NH-45 (except CB-15)

*Figure 6-61 from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-22_BldgSlabAreaCatchBasinLocations.dsf

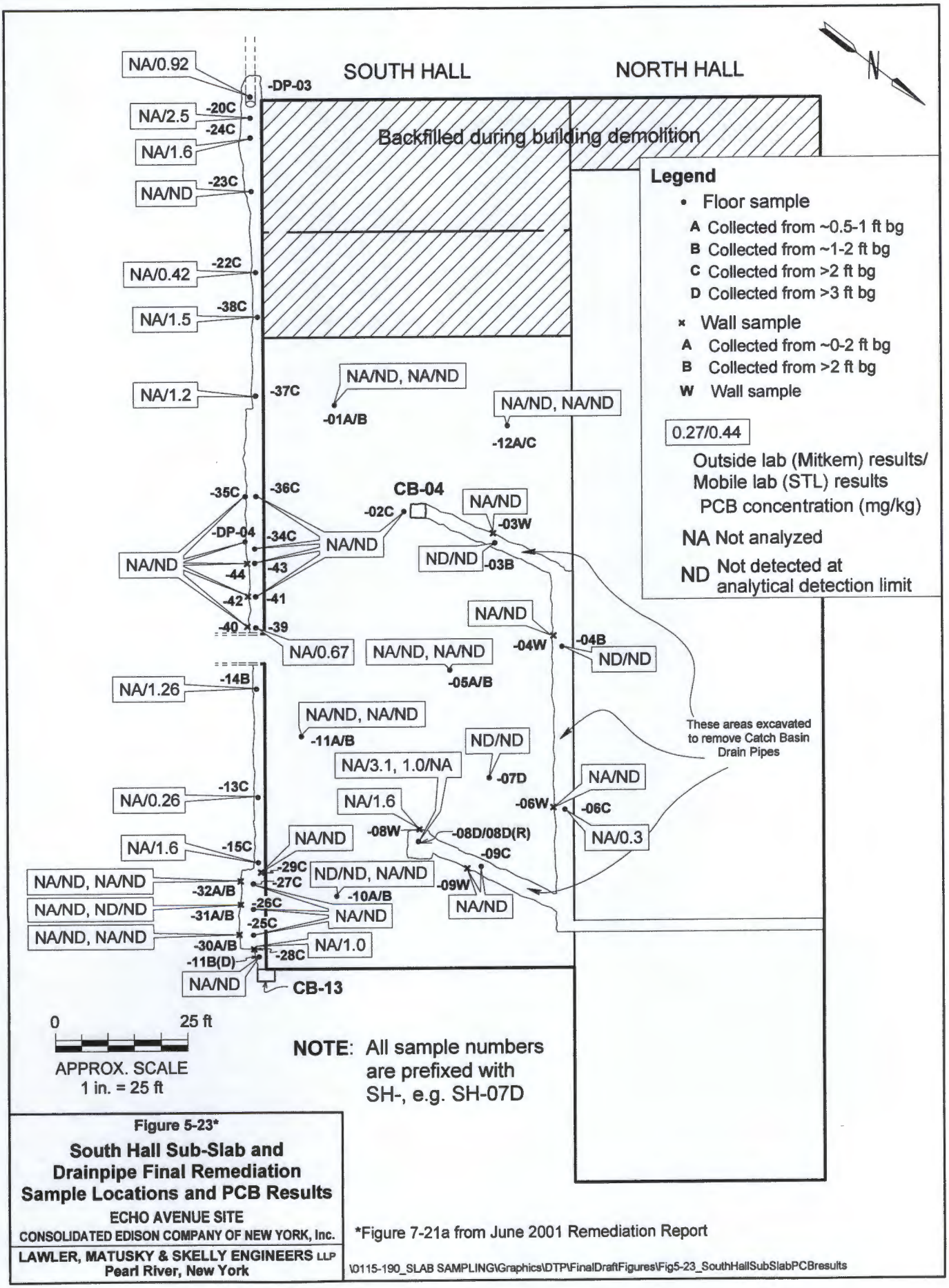

Figure 5-23*

South Hall Sub-Slab and Drainpipe Final Remediation Sample Locations and PCB Results

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*Figure 7-21a from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-23_SouthHallSubSlabPCBresults

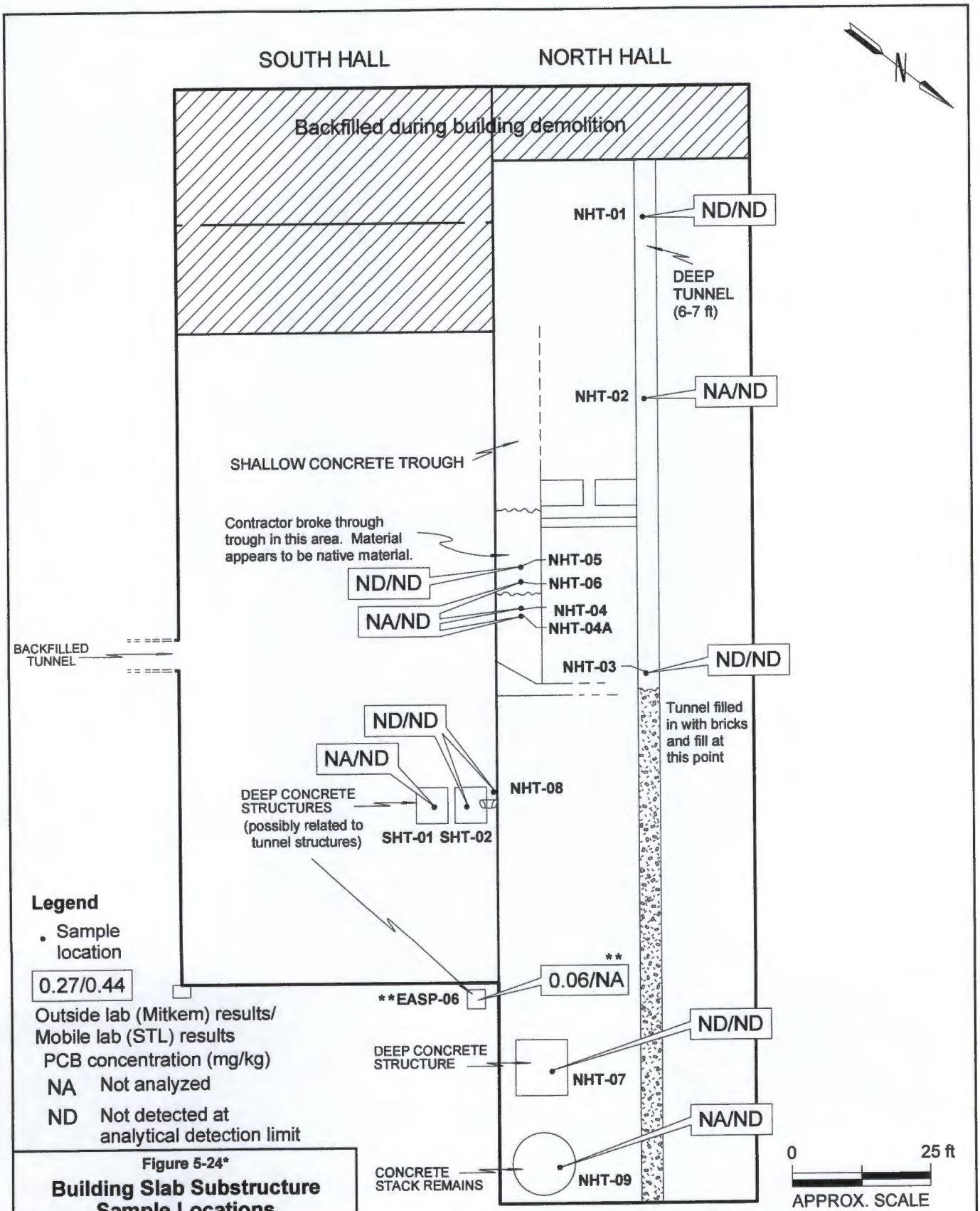

Figure 5-24*

Building Slab Substructure Sample Locations and PCB Results

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** The sediment from EASP-06 was sampled and analyzed by H2M labs in November 1998.

*Figure 7-23 from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-24_BuildingSlabSubstructurePCBresults.dsf

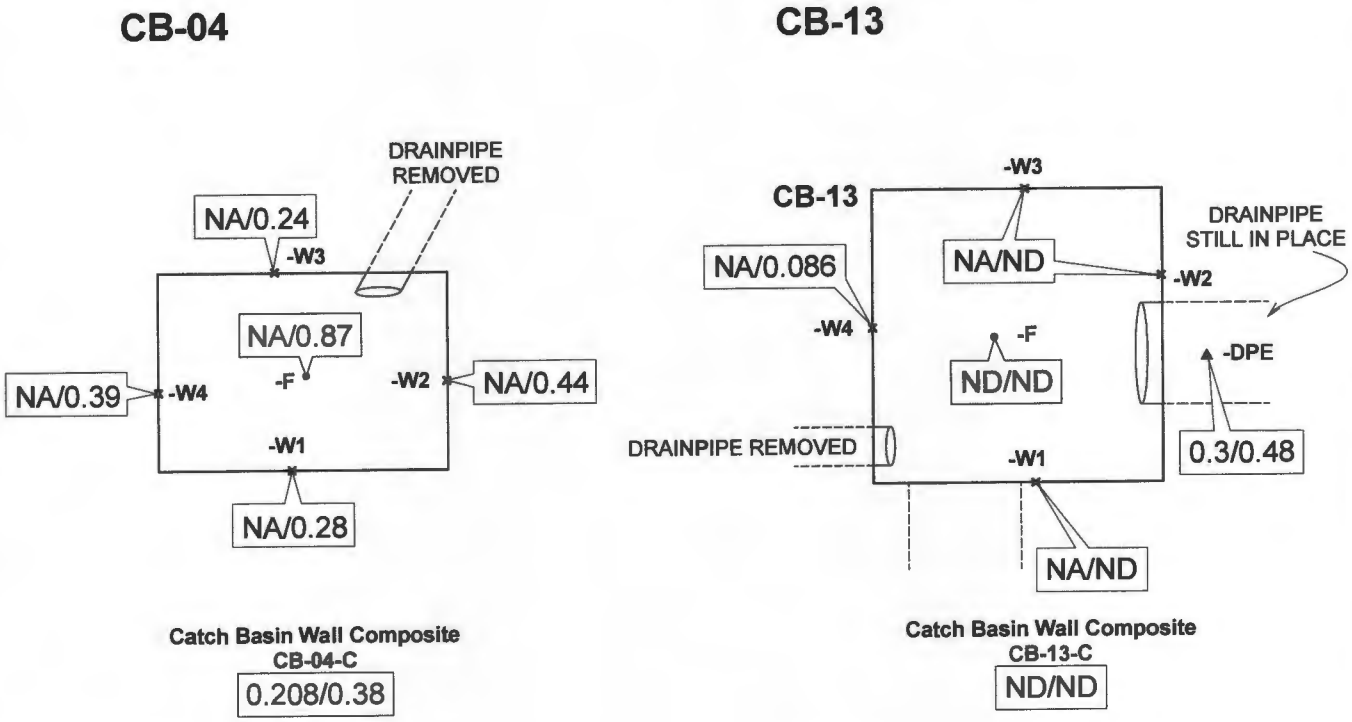
In January 2000, Con Edison received approval from NYSDEC to backfill the South Hall building slab area with clean certified fill. At the time, CB-04 and CB-13 were allowed to remain in place. Figure 5-25, formerly Figure 7-21b from the June 2001 Remediation Report, shows the PCB concentrations in the concrete from these two catch basins. In 2002-2003, CB-13, which consisted of two catch basins adjacent to each other, and the drainpipe were removed. The results of the confirmatory PCB concentrations are provided on Figure 5-26, previously Figure 5-10 from the July 2003 Remediation Report Addendum. CB-04 remains in place.

The North Hall substation slab was also removed as part of the 1999-2000 remediation. In addition, catch basins CB-01, CB-02, CB-03, CB-07, CB-12, and CB-15, the drainpipes from CB-01, CB-02, CB-03, and CB-15, the drainpipe that ran from CB-04 and CB-05 under the North Hall slab to CB-12, and the drainpipe between CB-07 and CB-12 along the outside of the northern foundation wall were all removed. A concrete trough along the inside of the north wall foundation in the northwest corner area was also removed. CB-06 and a concrete pit near CB-15 were allowed to remain in place. The confirmatory PCB samples from the North Hall slab, catch basins and drainpipe removal are shown on Figure 5-27a to d, formerly Figures 7-22a to 7-22d from the June 2001 Remediation Report.

A deep concrete tunnel/trough was discovered along the centerline of the building slab of the North Hall. The western half had an intact roof and the tunnel area was filled with a cindery-ashy material. The eastern half was exposed and was filled with construction debris and rubble. Other deep concrete structures were also located beneath the slab. NYSDEC requested that Con Edison sample the cindery-ashy material in the tunnel and material found in other structures. The results are shown on Figure 5-24 of this report. Samples of the rubble material were also collected and analyzed at the request of NYSDEC; these results are shown on Figure 5-28, originally Figure 7-24 from the June 2001 Remediation Report. After reviewing the results, the NYSDEC granted approval to Con Edison to backfill the substructures with the rubble that was removed from them. The cindery material was removed from the tunnel and disposed of off-site as industrial waste. This section of the tunnel was double washed with an industrial detergent and double rinsed with potable water by Con Edison. The North Hall area was backfilled with certified clean fill in January 2000.

5.1.4 **On-Site Soil beneath the Cable Vault**

The cable vault was initially remediated as part of the 1997-1998 remediation. At that time the cable vault was cleaned and concrete samples were collected from the floor and walls of the structure; the samples met the cleanup criteria for PCBs. The ducts entering the cable vault were cleaned and plugged. Soil samples were collected from beneath the concrete floor of the cable



NOTE:

All sample numbers are prefixed with catch basin ID, e.g. **CB-04-W2**

Catch basin is 1.5 ft deep

NOTE:

All sample numbers are prefixed with catch basin ID, e.g. **CB-13-W2**

Catch basin is 3.5 ft deep

Legend

- • Floor concrete sample
- × Wall concrete sample
- ▲ Drainpipe sample

0.27/0.44 Outside lab (H2M) results/ Mobile lab (STL) results PCB concentration (mg/kg)

NA Not analyzed

ND Not detected at analytical detection limit

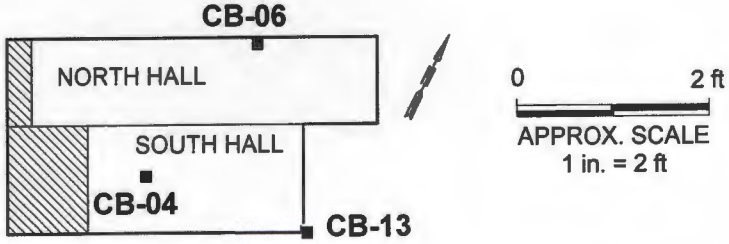


*Figure 7-21b from June 2001 Remediation Report

Figure 5-25*

South Hall Catch Basin Concrete, and Sediment Sample Locations and PCB Results

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\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\
Fig5-25_SouthHallCatchBasinConcreteAndSedimentPCBresults.dsf

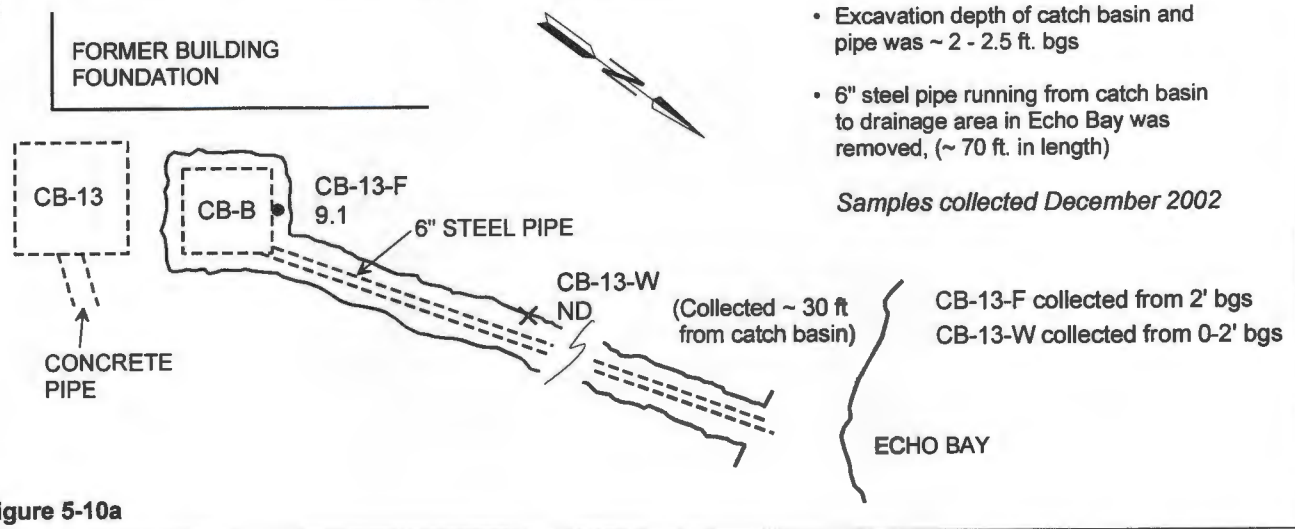

Figure 5-10a

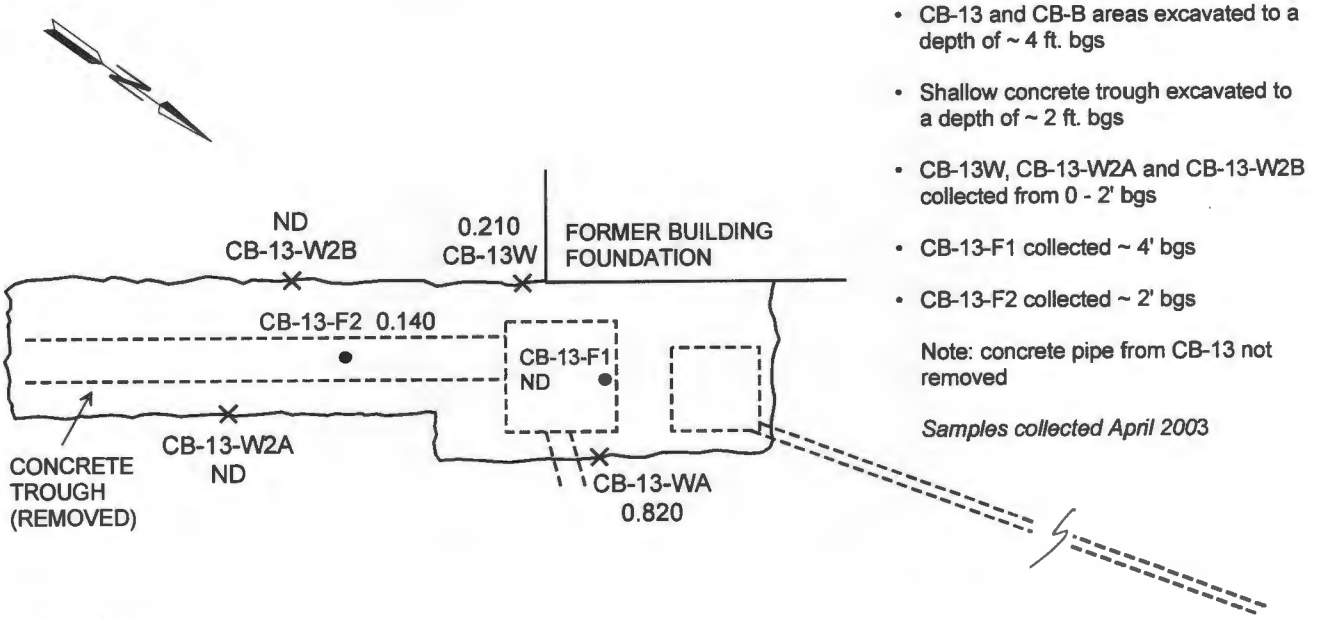

Figure 5-10b

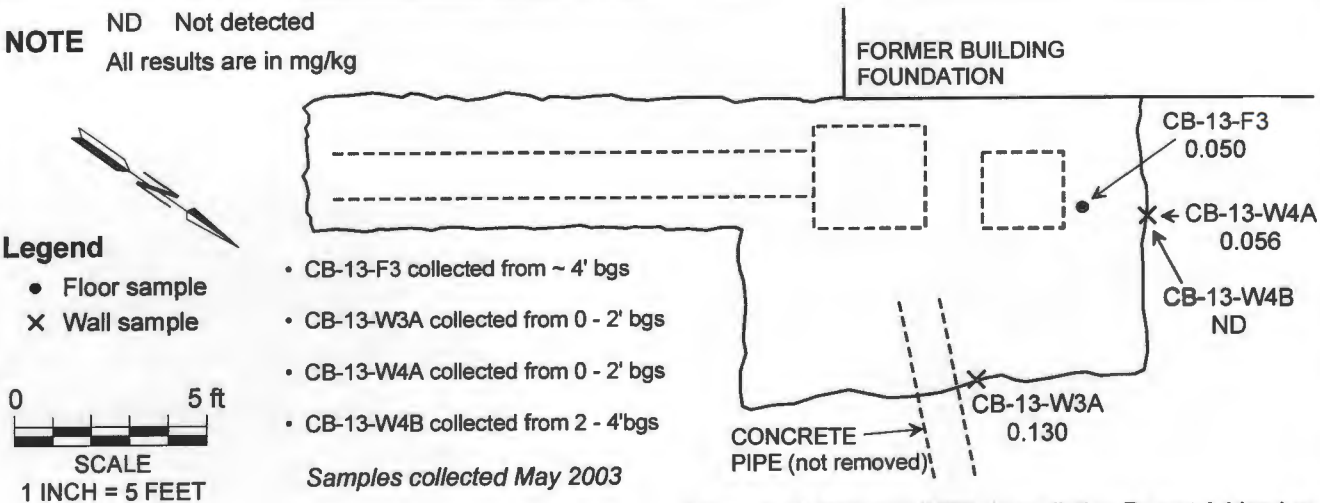

*Figure 5-10 from July 2003 Remediation Report Addendum

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-26_CB-13soilPCBresults.dsf

LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**CB-13 Area Excavation PCB Soil Sample Results**	**Figure 5-26***

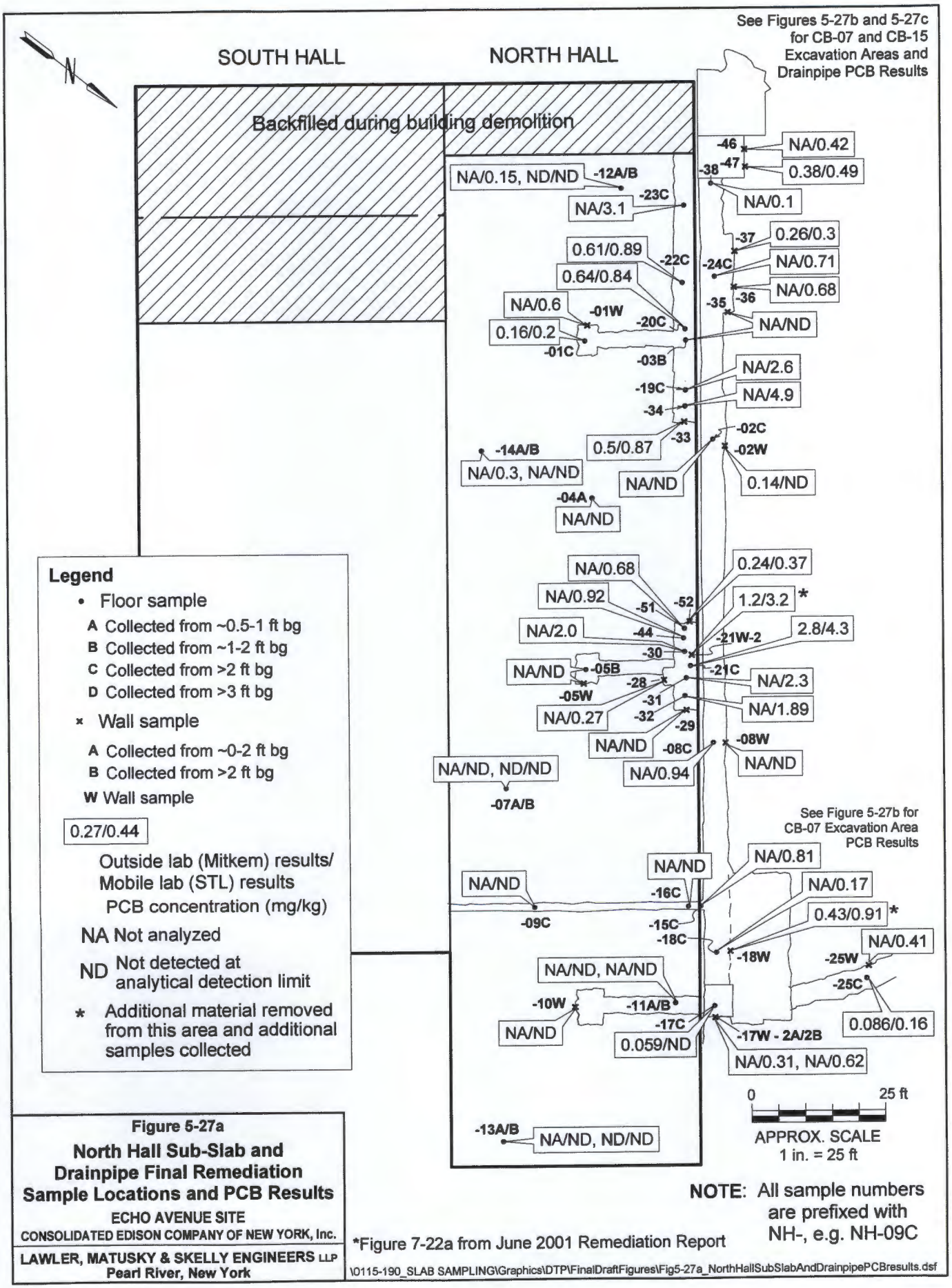

Figure 5-27a

North Hall Sub-Slab and Drainpipe Final Remediation Sample Locations and PCB Results

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*Figure 7-22a from June 2001 Remediation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-27a_NorthHallSubSlabAndDrainpipePCBresults.dsf

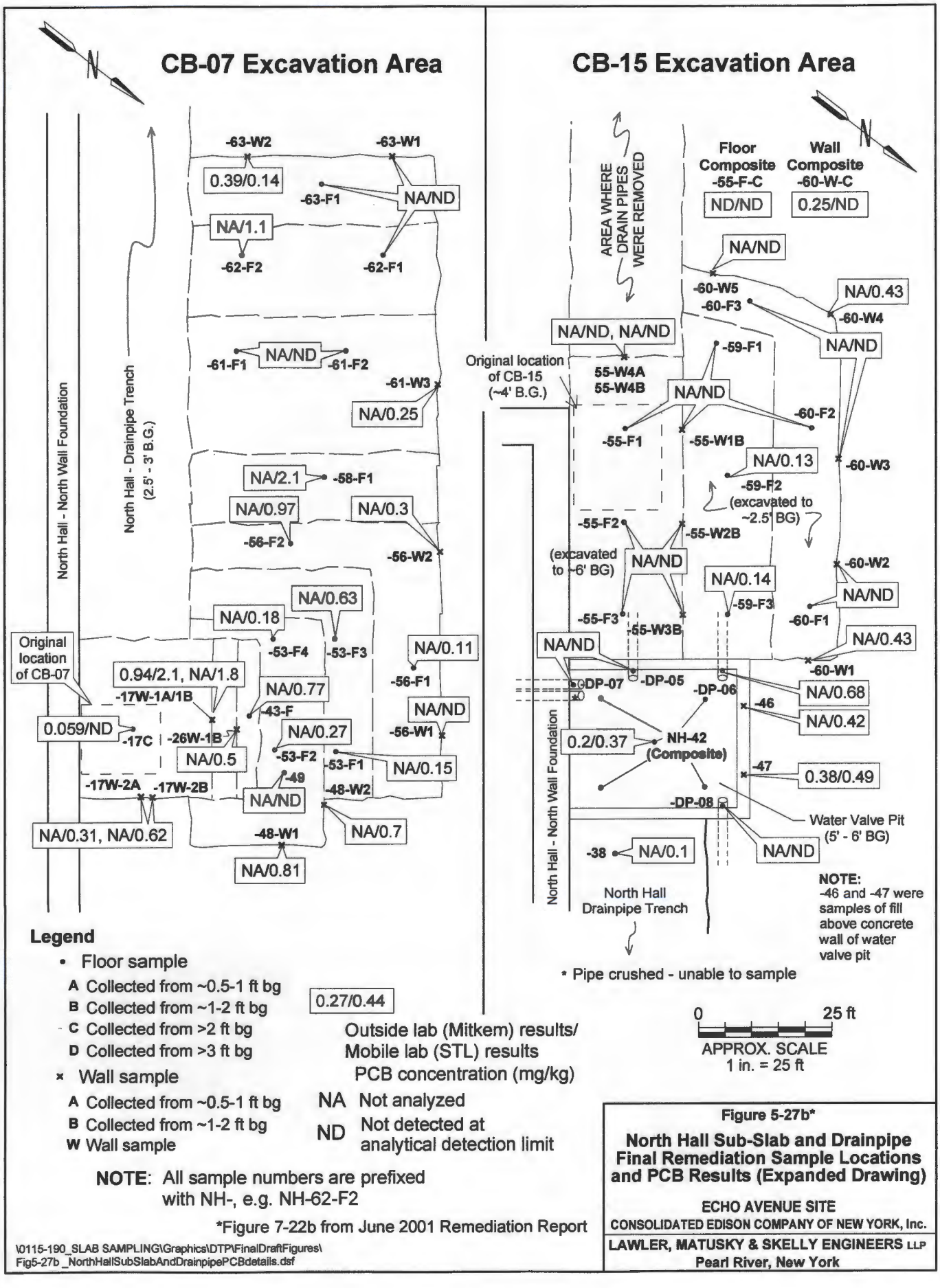

Figure 5-27b*

North Hall Sub-Slab and Drainpipe Final Remediation Sample Locations and PCB Results (Expanded Drawing)

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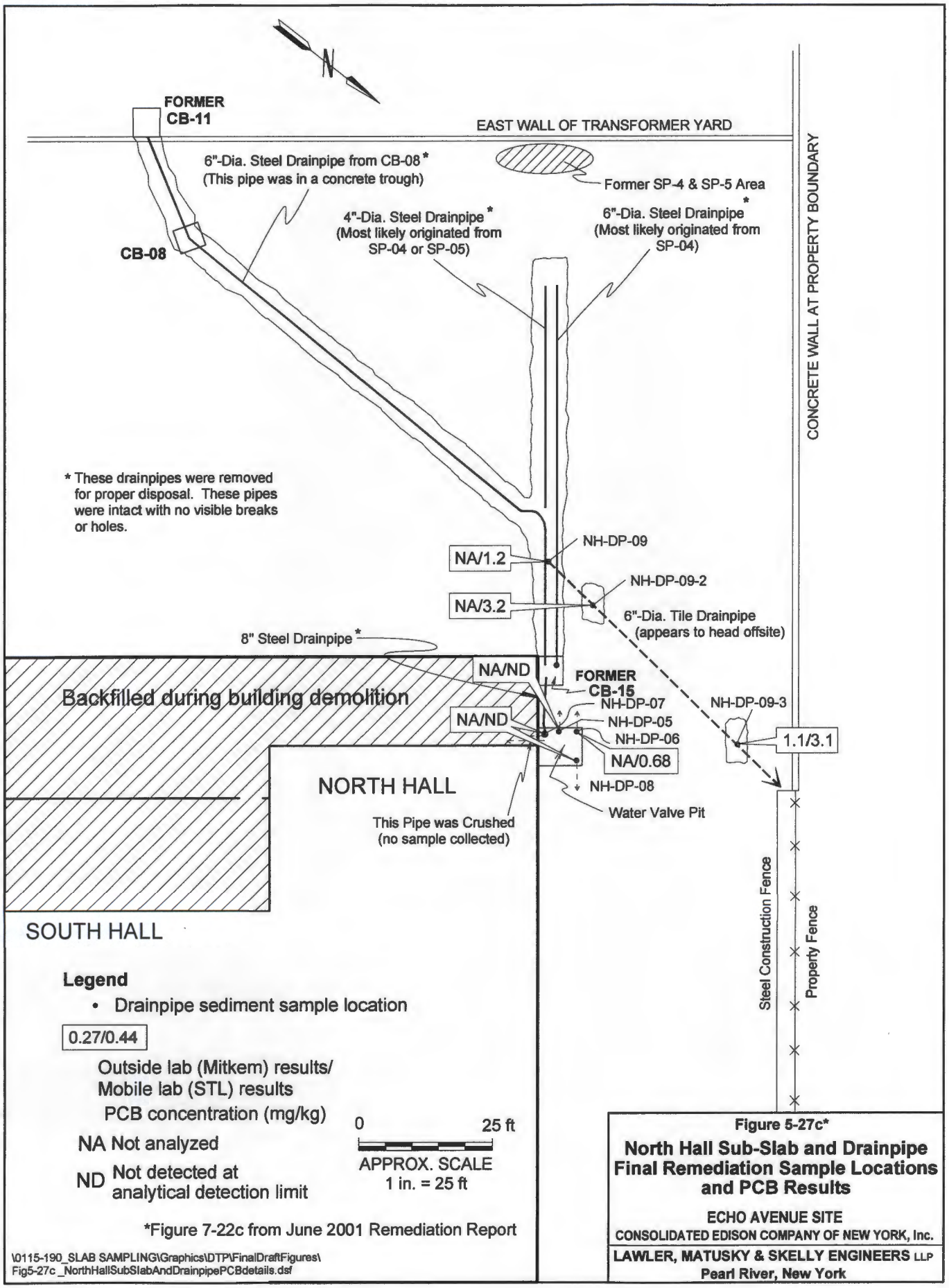
FORMER
CB-11
EAST WALL OF TRANSFORMER YARD
6"-Dia. Steel Drainpipe from CB-08 *
(This pipe was in a concrete trough)
Former SP-4 & SP-5 Area *
4"-Dia. Steel Drainpipe *
(Most likely originated from
SP-04 or SP-05)
6"-Dia. Steel Drainpipe *
(Most likely originated from
SP-04)
CB-08
CONCRETE WALL AT PROPERTY BOUNDARY
* These drainpipes were removed
for proper disposal. These pipes
were intact with no visible breaks
or holes.
NH-DP-09
NA/1.2
NH-DP-09-2
NA/3.2
6"-Dia. Tile Drainpipe
(appears to head offsite)
8" Steel Drainpipe *
NA/ND
FORMER
CB-15
Backfilled during building demolition
NH-DP-07
NH-DP-09-3
NA/ND
NH-DP-05
NH-DP-06
1.1/3.1
NA/0.68
NORTH HALL
NH-DP-08
Water Valve Pit
This Pipe was Crushed
(no sample collected)
Steel Construction Fence
Property Fence
SOUTH HALL
Legend
• Drainpipe sediment sample location
0.27/0.44
Outside lab (Mitkem) results/
Mobile lab (STL) results
PCB concentration (mg/kg)
NA Not analyzed
ND Not detected at
analytical detection limit
0
25 ft
APPROX. SCALE
1 in. = 25 ft
*Figure 7-22c from June 2001 Remediation Report
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\
Fig5-27c _NorthHallSubSlabAndDrainpipePCBdetails.dsf
Figure 5-27c*
North Hall Sub-Slab and Drainpipe
Final Remediation Sample Locations
and PCB Results
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
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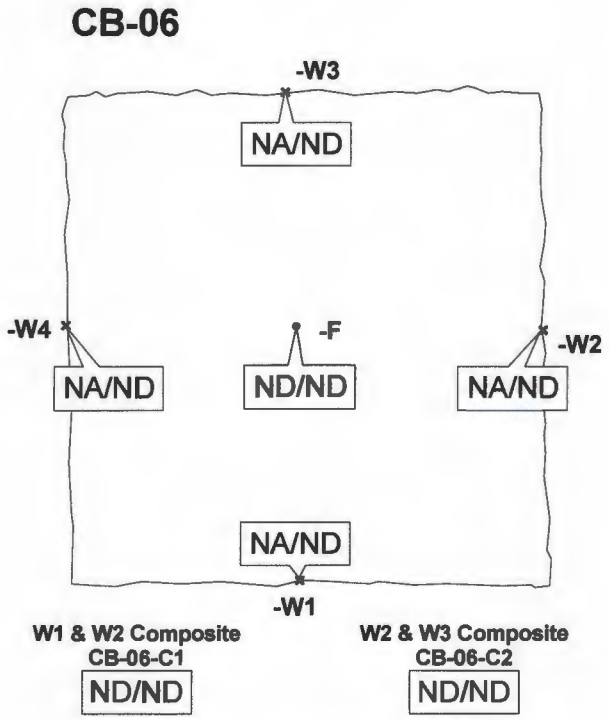


NOTE:

All sample numbers are prefixed with catch basin ID, e.g. CB-06-W2

- No drainpies in CB-06
- W1 & W2 were fill walls
- W2 & W3 were brick/concrete walls
- Catch basin is 3 ft deep

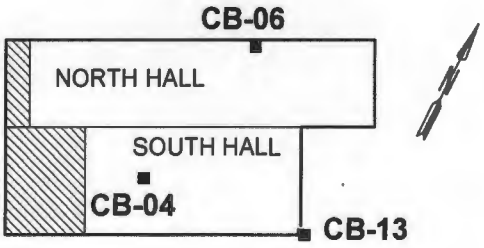
Legend

- • Floor concrete sample
- × Wall concrete sample

0.27/0.44 Outside lab (H2M) results/ Mobile lab (STL) results
PCB concentration (mg/kg)

NA Not analyzed

ND Not detected at analytical detection limit



0 2 ft

APPROX. SCALE
1 in. = 2 ft

*Figure 7-22d from June 2001 Remediation Report

Figure 5-27d*
North Hall
Catch Basin Concrete, and Soil Sample Locations and PCB Results
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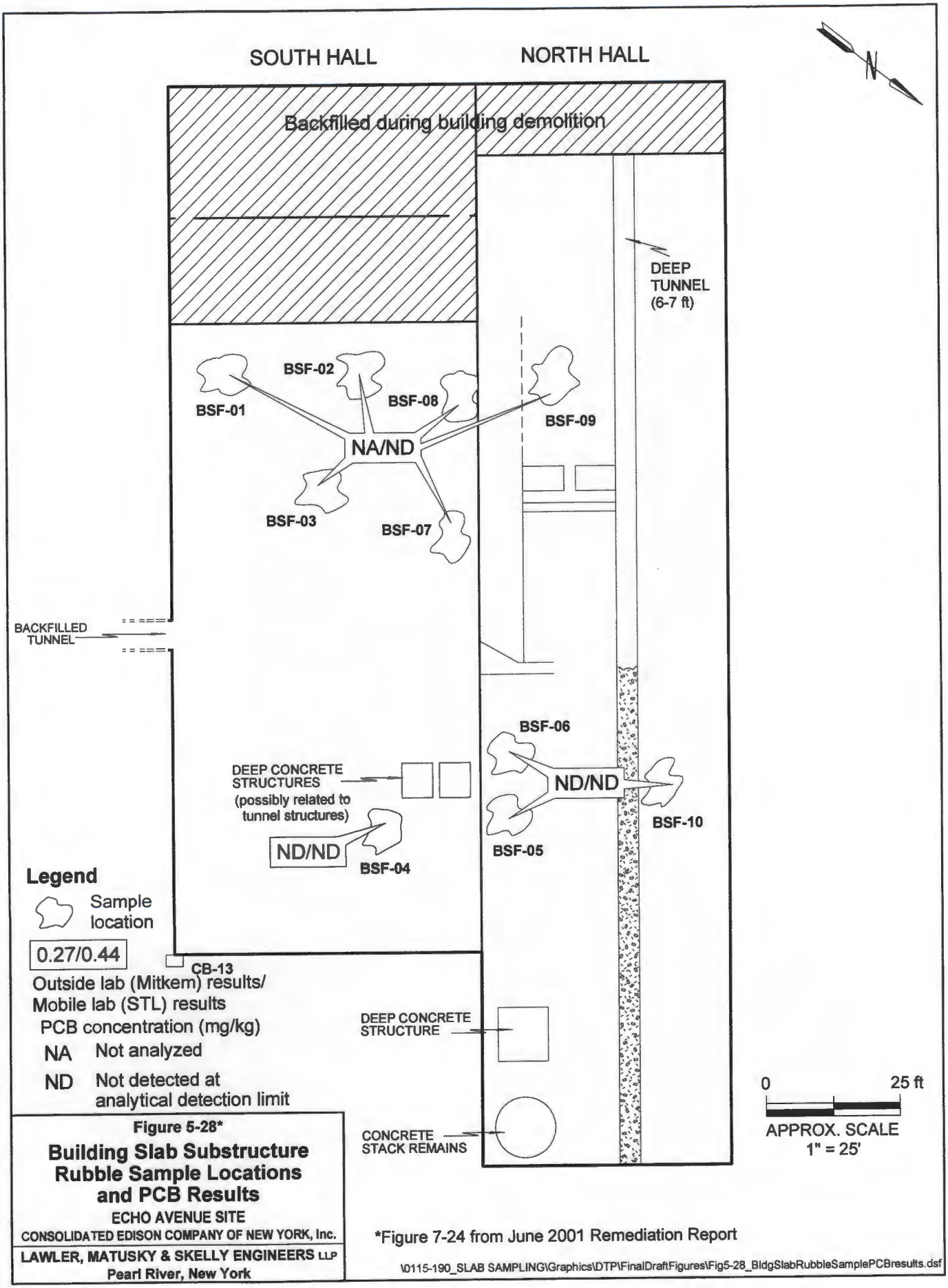

Figure 5-28*

Building Slab Substructure Rubble Sample Locations and PCB Results

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*Figure 7-24 from June 2001 Remediation Report

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vault; these samples all met the PCB cleanup criteria. NYSDEC granted approval to backfill the cable vault with clean fill in May 1998.

A drainpipe from the cable vault that ran towards the northwest was removed during the 1998 remediation. The results from this investigation are shown on Figure 5-29, formerly Figure 7-16 from the June 2001 Remediation Report. Monitoring well EAMW-6 was located in the vicinity of the drainpipe excavation and was removed as a result of the excavation (see Figure 5-45 in Section 5.2 of this report for location). The original boring for this well had selected samples collected from different depths for analysis for TCL organics and TAL inorganics. The results are provided on Table 5-2, formerly Table 4-17 from the 1993 Phase II Report. The RSCOs specified in TAGM 4046 for the TCL and TAL constituents detected in these samples have been added to the table for comparison. The data indicated several SVOCs and metals above the RSCOs. As described above in Section 4.2, a sample from the cable vault drainpipe investigation was analyzed for TCL organics and TAL inorganics. The results, which are provided in Table 4-5 of this Report, showed the presence of several SVOCs above the cleanup objectives. Additional excavation was requested by NYSDEC followed by confirmatory sampling to verify that the SVOC contamination was removed to acceptable levels. See Section 4.2 for further discussion, Table 4-5 for the data, and Figure 6-3 for location of these samples.

In 2003, Con Edison elected to remove the entire cable vault. Three walls and the floor were removed; the fourth (east) wall could not be removed because it is part of the basement wall of the Site's substation building, which had been backfilled in 1995. Results of concrete samples collected from this fourth wall are provided on Figure 5-30, formerly Figure 7-14a from the June 2001 Remediation Report. After the three walls and floor were removed, soil samples were collected from the bottom and north, south, and west side walls of the cable vault excavation; these results are shown on Figure 5-31, formerly Figure 5-8 from the July 2003 Remediation Report Addendum. The excavation was backfilled with the original backfill material used when the cable vault was originally backfilled in 1998. Additional certified clean fill was used to bring the excavation up to grade. Top soil was added and grass planted to prevent erosion.

5.1.5 **On-Site Soil beneath the Transformer Yard Slab**

As part of the building demolition project conducted by Con Edison in 1995, the transformer yard superstructure and concrete structures above the slab were removed. As part of the 1997-1998 remediation, various structures, e.g. manholes, electrical boxes, catch basins, moat drains, etc. were sampled and either removed or allowed to remain in place. Soil samples were collected from various areas in the transformer yard not covered by concrete. The slab itself was to be cleaned and allowed to remain. As described above in Section 4.2, one soil sample, TYSS-01, which was analyzed for TCL organics and TAL inorganics showed only elevated levels of zinc.

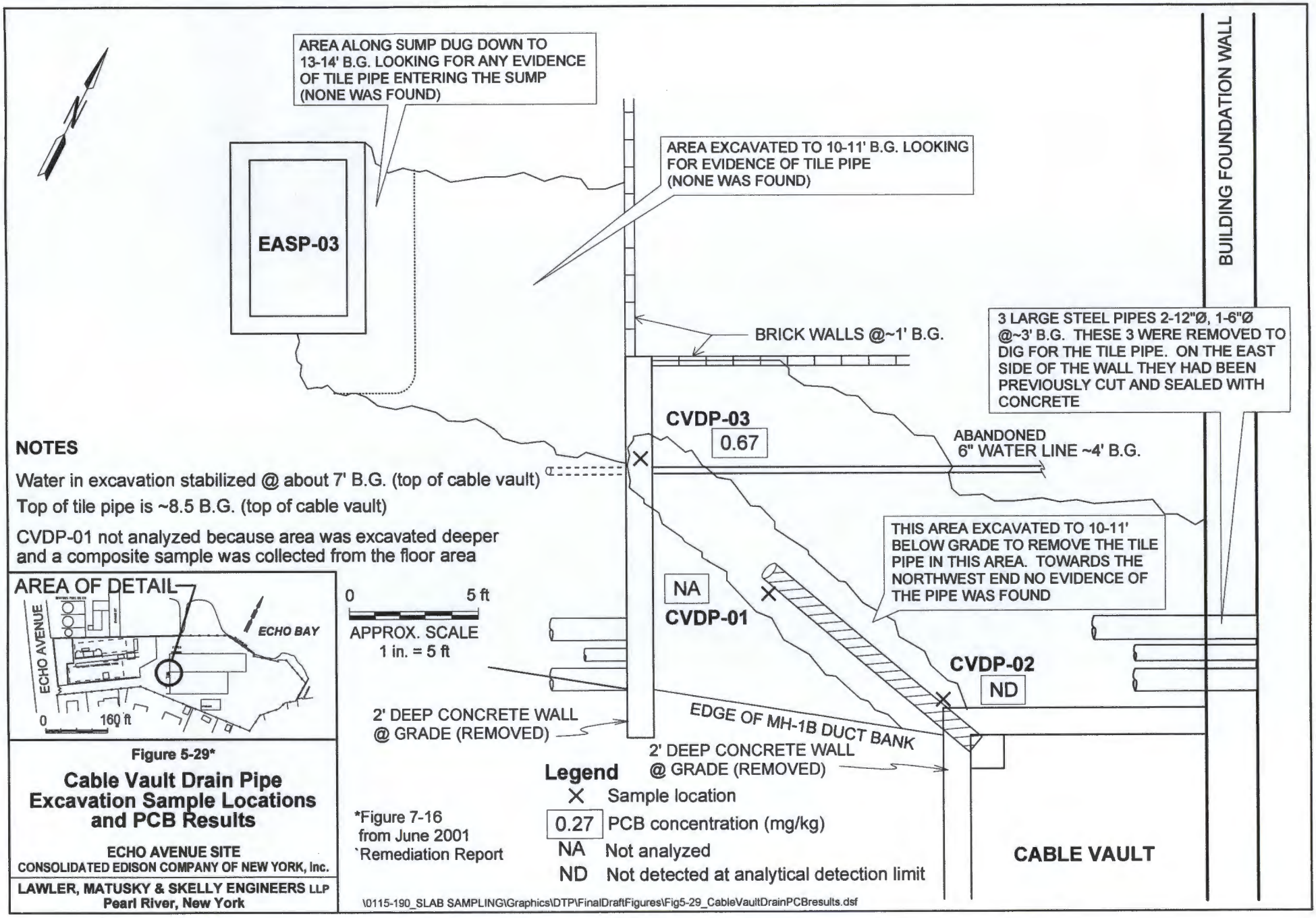

*Figure 7-16 from June 2001 `Remediation Report

Figure 5-29*

Cable Vault Drain Pipe Excavation Sample Locations and PCB Results

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Originally Table 4-18 (February 1993 Phase II Investigation Report)

SOIL BORING DATA SUMMARY (JULY 1992)

CON EDISON - ECHO AVENUE

PARAMETER	EAMW-6 (0-2 ft)	RE EAMW-6 (0-2 ft)	DL EAMW-6 (0-2 ft)	EAMW-6 (4-6 ft)	EAMW-6 (8-10 ft)	EAMW-6 (10-12 ft)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
VOLATILE ORGANICS (mg/kg)								
Methylene chloride	ND	0.002j	•	0.002j	ND	ND	0.1	NA
SEMIVOLATILE ORGANICS (mg/kg)								
Naphthalene	0.82	0.79	0.93j	ND	ND	ND	13	NA
2-Methylnaphthalene	1.5	1.0	1.2 j	ND	ND	ND	36.4	NA
Acenaphthalene	4.0e	3.9e	6.5	ND	ND	ND	41	NA
Acenaphthene	0.25j	0.27j	0.32j	ND	ND	ND	50.0 ***	NA
Dibnezofuran	0.51	0.78	0.83j	ND	ND	ND	6.2	NA
Fluorene	0.9	1.1	2.0	ND	ND	ND	50.0 ***	NA
Phenanthrene	1.7	0.63	1.6j	ND	ND	ND	50.0 ***	NA
Anthracene	8.8e	2.9e	3.3	ND	ND	ND	50.0 ***	NA
Carbazole	0.19j	0.1j	0.25j	ND	ND	ND	-	NA
Fluoranthene	2.9	1.2	3.4	ND	ND	ND	50.0 ***	NA
Pyrene	2.7	2.3	2.4	ND	ND	ND	50.0 ***	NA
Benzo(a)anthracene	**4.0e**	**2.9**	**4.8**	ND	ND	ND	0.224 or MDL	NA
Chrysene	**4.9e**	**4.8e**	**4.8**	ND	ND	ND	0.4	NA
bis(2-Ethylhexyl)phthalate	0.38	0.34j	0.42j	ND	ND	ND	50.0 ***	NA
Benzo(b)fluoranthene	**2.3**	**2.4**	**2.8**	ND	ND	ND	1.1	NA
Benzo(k)fluoranthene	**2.1**	**1.8**	**4.0**	ND	ND	ND	1.1	NA
Benzo(a)pyrene	**0.64**	**0.62**	**0.8j**	ND	ND	ND	0.061 or MDL	NA
Indeno(1,2,3-c,d)pyrene	0.46	0.56	0.52j	ND	ND	ND	3.2	NA
Dibenzo(a,h)anthracene	**0.62**	**1.1**	**0.57**	ND	ND	ND	0.014	NA
PESTICIDES/PCBs (mg/kg)								
Aldrin	0.0081p	•	•	ND	ND	ND	0.041	NA
Heptachlor epoxide	0.0085p	•	•	ND	ND	ND	0.02	NA
Endrin ketone	0.0092p	•	•	ND	ND	ND	-	NA
Endosulfan II	0.017	•	•	ND	ND	ND	0.9	NA
α-Chlordane	0.0022p	•	•	ND	ND	ND	0.54	NA
4,4'-DDD	0.0079p	•	•	ND	ND	ND	2.9	NA
Aroclor 1254	ND	•	•	ND	ND	ND	1.0/10*	NA
Aroclor 1260	ND	•	•	ND	ND	ND	1.0/10*	NA

Originally Table 4-18 (February 1993 Phase II Investigation Report)

SOIL BORING DATA SUMMARY (JULY 1992)

CON EDISON - ECHO AVENUE

PARAMETER	EAMW-6 (0-2 ft)	EAMW-6 (4-6 ft)	EAMW-6 (8-10 ft)	EAMW-6 (10-12 ft)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
METALS (mg/kg)						
Aluminum	7,080	18,900	18,900	20,500	SB	33,000
Antimony	ND	ND	ND	ND	SB	0.6 - 10 (n)
Arsenic	4.4	2.3	0.82B	0.95	7.5 or SB	3.0 - 12.0 æ
Barium	81.6	69.8	189	193	300 or SB	15 - 600
Beryllium	**0.42B**	**0.70 B**	**0.62B**	**0.59B**	0.16 or SB	0 - 1.75
Cadmium	**1.4**	ND	**2.2**	**1.7**	1 or SB	0.1 - 1.0
Calcium	3,750	1,210	1,530	1,220	SB	130 - 35,000 æ
Chromium	**12.4**	**28.1**	**56.2**	**52.2**	10 or SB	1.5 - 40.0 æ
Cobalt	9.1B	7.6B	22.9	17.8	30 or SB	2.5 - 60.0 æ
Copper	**45.7**	18.5	**30.9**	**30.3**	25 or SB	1.0 - 50.0
Iron	14,100	20,800	35,600	34,200	2,000 or SB	2,000 - 550,000
Lead	141+	9.0 SA	5.5	5.2	SB**	4.0 - 61 or 200 - 500**
Magnesium	3,060	4,420	**8,240**	**8,520**	SB	100 - 5,000
Manganese	128	375	849	686	SB	50 - 5,000
Mercury****	ND N	ND N	ND N	ND N	0.1	0.001 - 0.2
Nickel	**14.9**	**18.5**	**40.6**	**35.0**	13 or SB	0.5 - 25
Potassium	2,530	2,390	8,460	9,770	SB	8,500 - 43,000 æ
Selenium	0.60B	ND W	ND W	ND W	2 or SB	0.1 - 3.9
Silver	ND	ND	ND	0.70 B	SB	0.1 - 5.0 (n)
Sodium	408B	405B	267B	259B	SB	6,000 - 8,000
Thallium	0.20 B	ND	0.62B	**1.1B**	SB	0.1 - 0.8 (q)
Vanadium	35.2	37.9	63.5	70.2	150 or SB	1.0 - 300
Zinc	**78.0**	**43.0**	**73.5**	**74.0**	20 or SB	9.0 - 50
Cyanide	ND	ND	ND	ND	****	N/A

Note : Numbers in bold exceed objectives.
♦ - Not analyzed.
*** - As per TAGM #4046, total VOCs < 10 ppm., total SVOCs < 500 ppm, individual SVOCs < 50 ppm, and total Pesticides < 10 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
e - Estimated concentration; exceeds GC/MS calibration range.
* - 1.0 ppm refers to surface concentrations; 10 ppm refers to subsurface concentrations.
** - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.
**** - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.
æ - New York State background concentration.
(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowan, H.J., Environmental Chemistry of the Elements
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
ND - Not detected at analytical detection limit.
DL - Diluted sample analysis.
RE - Re-analysis
p - Estimated concentration; pesticide/PCB analyte has>25% difference for the detected concentrations between the two GC columns.
SB - Site background.
SA - Value determined by the method of standard addition
W - Post-digestion spike out of control limits;sample absorbance is less than 50% of spike absorbance.
N - Spike sample recovery is not within control limits.
+ - Correlation coefficient for the MSA is <0.995
**** - Mercury results are likely biased low as the MS recovered 30.6%; actual concentration may be greater than those reported

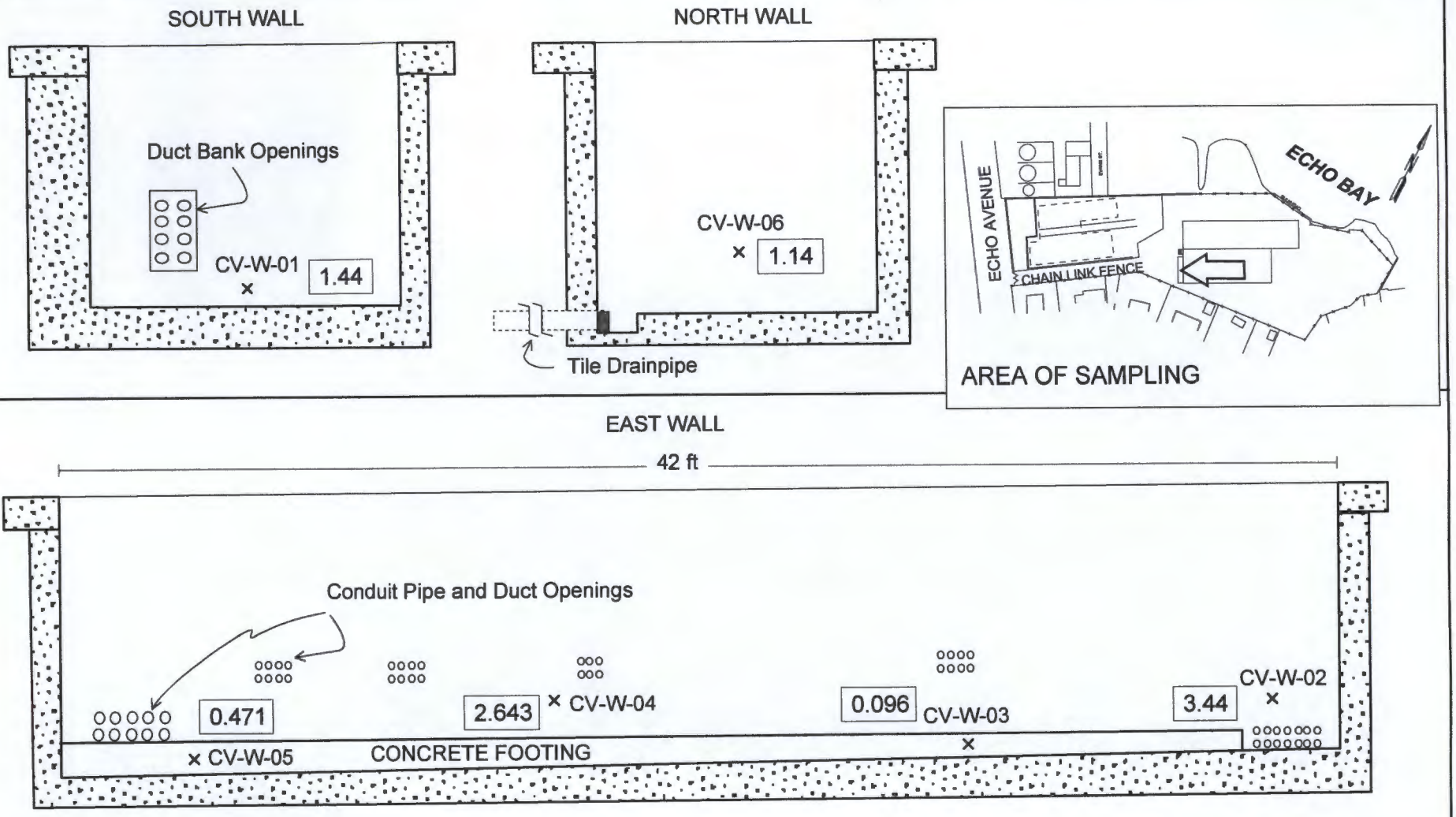

Figure 5-30

Cable Vault Concrete Wall and Floor Sample Locations and PCB Results

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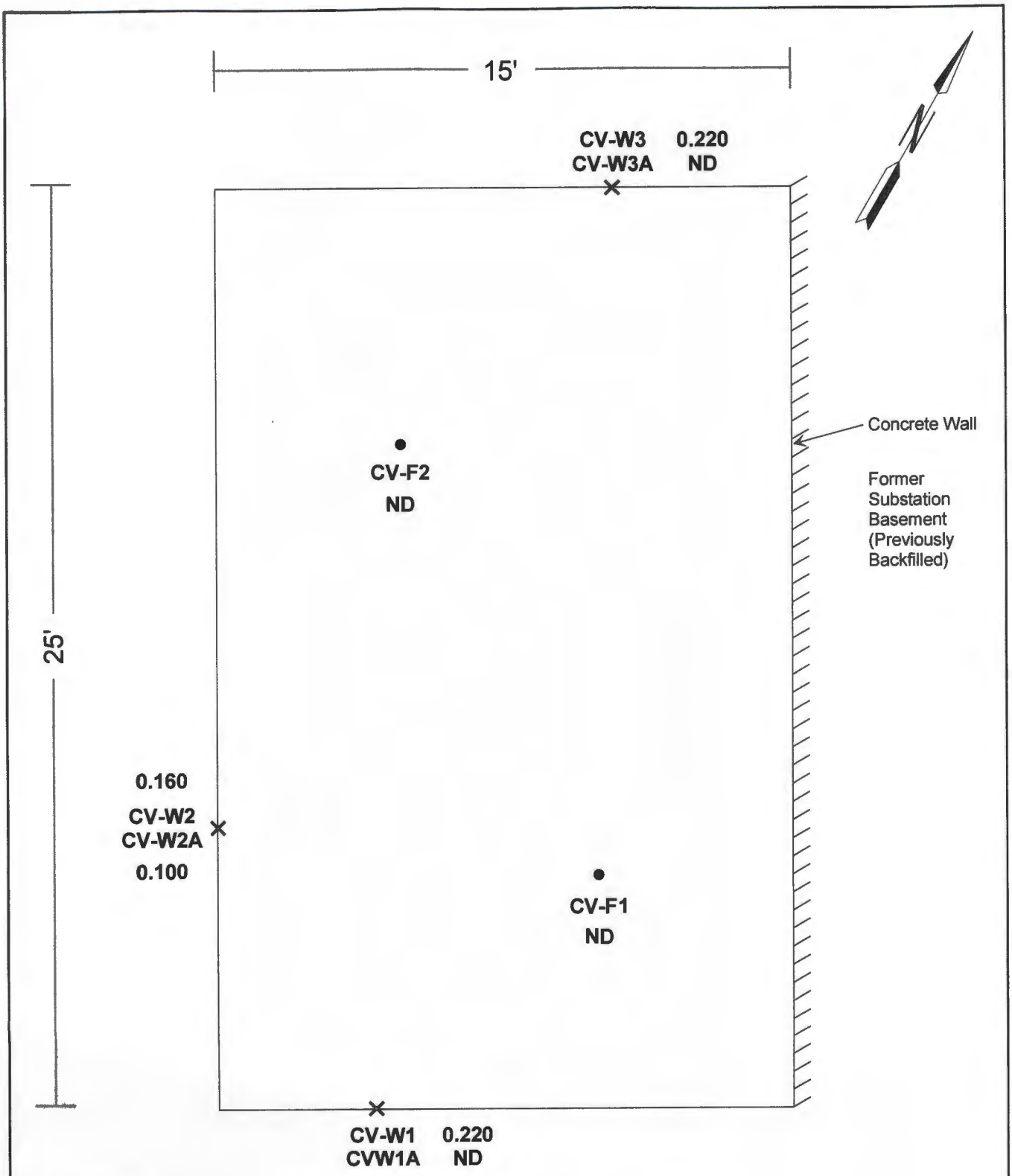

Legend

- × Wall Sample
- ● Floor Sample

Note: All Results in mg/kg

NOT TO SCALE

NOTE: CV-W1, -W2, and -W3 taken from 0-2 ft depth

CV-W1A, -W2A, and -W3A taken from 2-6 ft depth

CV-F1and -F2 taken from 6 ft depth

*Figure 5-8 from July 2003 Remediation Report Addendum

Figure 5-31*

Cable Vault Excavation Confirmatory PCB Soil Sample Results

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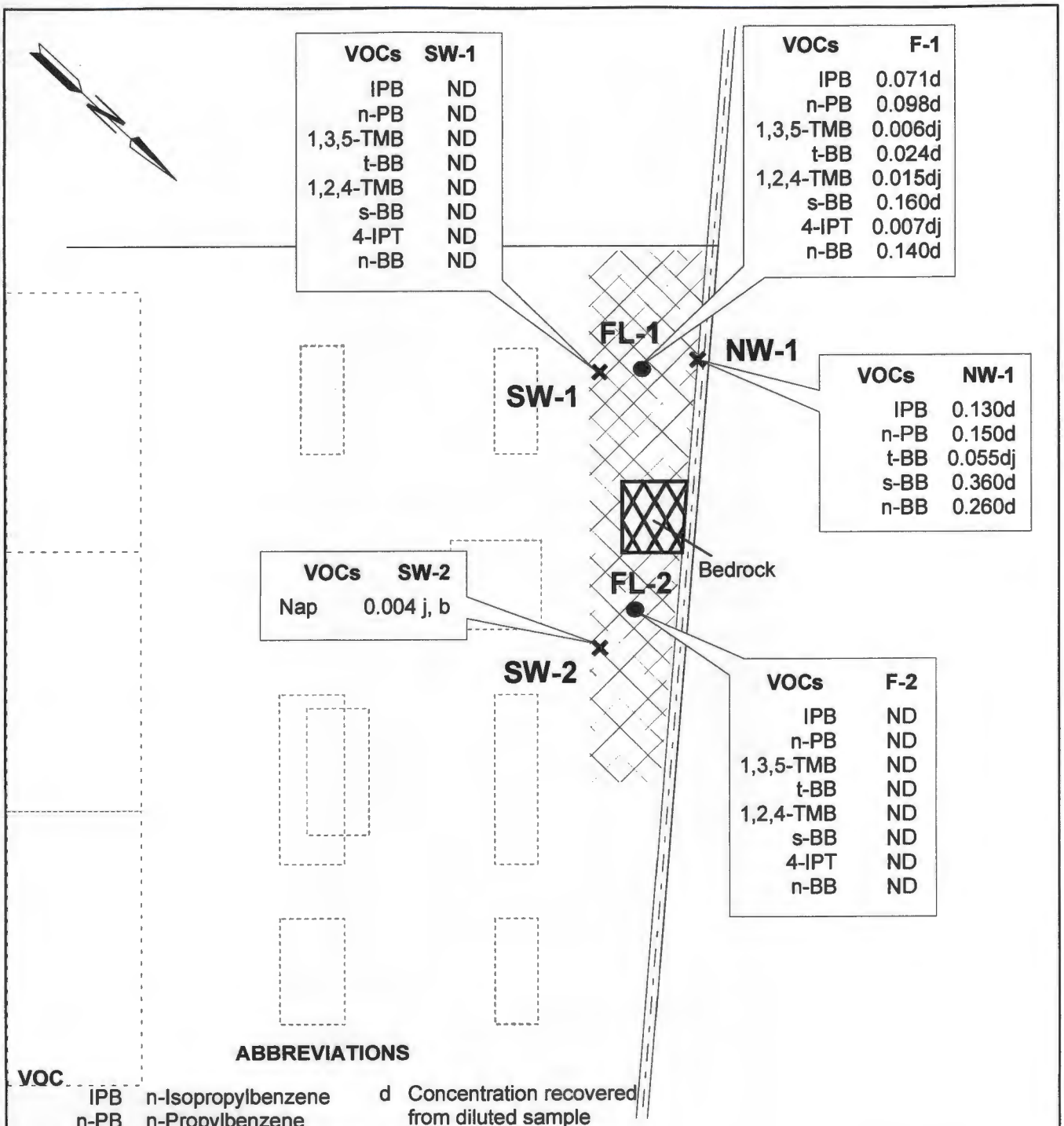
A second sample, TYMD-01, collected from the transformer yard moat drain area and analyzed for TCL organics and TAL inorganics, had elevated levels of lead, cadmium, copper, and zinc above the RSCOs in TAGM 4046. These areas were subsequently excavated.

NYSDEC requested that soil samples be collected beneath the transformer yard slab. Instead Con Edison elected to remove the transformer yard slab in its entirety; the slab was removed in 1999. An investigation to determine the source of the high metals concentrations found in the transformer yard moat drain area was conducted and found that the cindery-ash fill material located just beneath the slab was the source. Con Edison elected to remove the cinder layer. This removal effort was halted in March 2000 when oil was observed seeping through the exposed soil. An investigation determined that the source of the oil was the concrete duct banks.

Oil was also observed in the northwest corner of the transformer yard; the source was traced to a previous oil spill that occurred on the adjacent property. Con Edison excavated the area in 2002 to a depth of five feet and then collected samples from the floor and walls of the excavation for VOC and SVOC analysis. The results are provided on Figures 5-32 and 5-33, formerly Figures 5-2 and 5-3 of the July 2003 Remediation Report Addendum; all detected compounds are provided on the figures. With the exception of one PAH, BaP, found in NW-1, none of the results exceeded either the RSCOs in TAGM 4046 or the cleanup guidelines in NYSDEC's fuel oil contaminated soil cleanup guidelines (Ref. 24, Appendix A of this Report). The BaP result of an estimated concentration of 0.067 mg/kg was just above the RSCO TAGM 4046 concentration of 0.061 mg/kg. A report entitled Echo Avenue Fuel Oil Spill Report was prepared and submitted to NYSDEC in August 2002 and on September 30, 2002, NYSDEC closed the spill. At the request of NYSDEC, the excavation was lined with a bentonite-impregnated sheeting material, CCW MiraCLAY®, before backfilling in May 2003. No further excavation was conducted in this area.

The cinder layer removal was completed in 2002. Figure 5-34, previously Figure 5-1 from the July 2003 Remediation Report Addendum, shows the final lead concentrations in the soil after the cinder layer was removed; all levels were less than the 500 mg/kg cleanup level. The results of the 17 samples collected from the former transformer yard area contained an average lead concentration if 62.1 mg/kg with the highest concentration of 270 mg/kg at sample location CLC-13. This area was subsequently excavated another 5 ft below grade as described below. Since the lead had been found to be associated with the cindery ash fill material that previously had been entirely removed, no further lead samples were collected.

Con Edison elected to remove the concrete duct banks after the remaining cinder layer was removed. An asbestos contractor abated the asbestos associated with the cable ducts prior to their removal. Subsequently, after the cable ducts were removed, Con Edison elected to remove



ABBREVIATIONS

VOC

IPB	n-Isopropylbenzene
n-PB	n-Propylbenzene
1,3,5-TMB	1,3,5-Trimethylbenzene
t-BB	tert-Butylbenzene
1,2,4-TMB	1,2,4-Trimethylbenzene
s-BB	sec-Butylbenzene
4-IPT	4-Isopropyltoluene
n-BB	n-Butylbenzene
Nap	Naphthalene

d	Concentration recovered from diluted sample
j	Estimated concentration; compound present below quantitation level
g	Estimated concentration based on data validator's report
ND	Not detected

0 25 ft

APPROX. SCALE

Legend

Fuel Oil Excavation (50' long x 13' wide x 5' deep)

● Floor Sample

✕ Wall Sample (taken 3 ft BGS)
All results in mg/kg

*Figure 5-2 from July 2003 Remediation Report Addendum

Figure 5-32*

Transformer Yard May 2002
Fuel Oil Post-Excavation
VOC Soil Sampling Results

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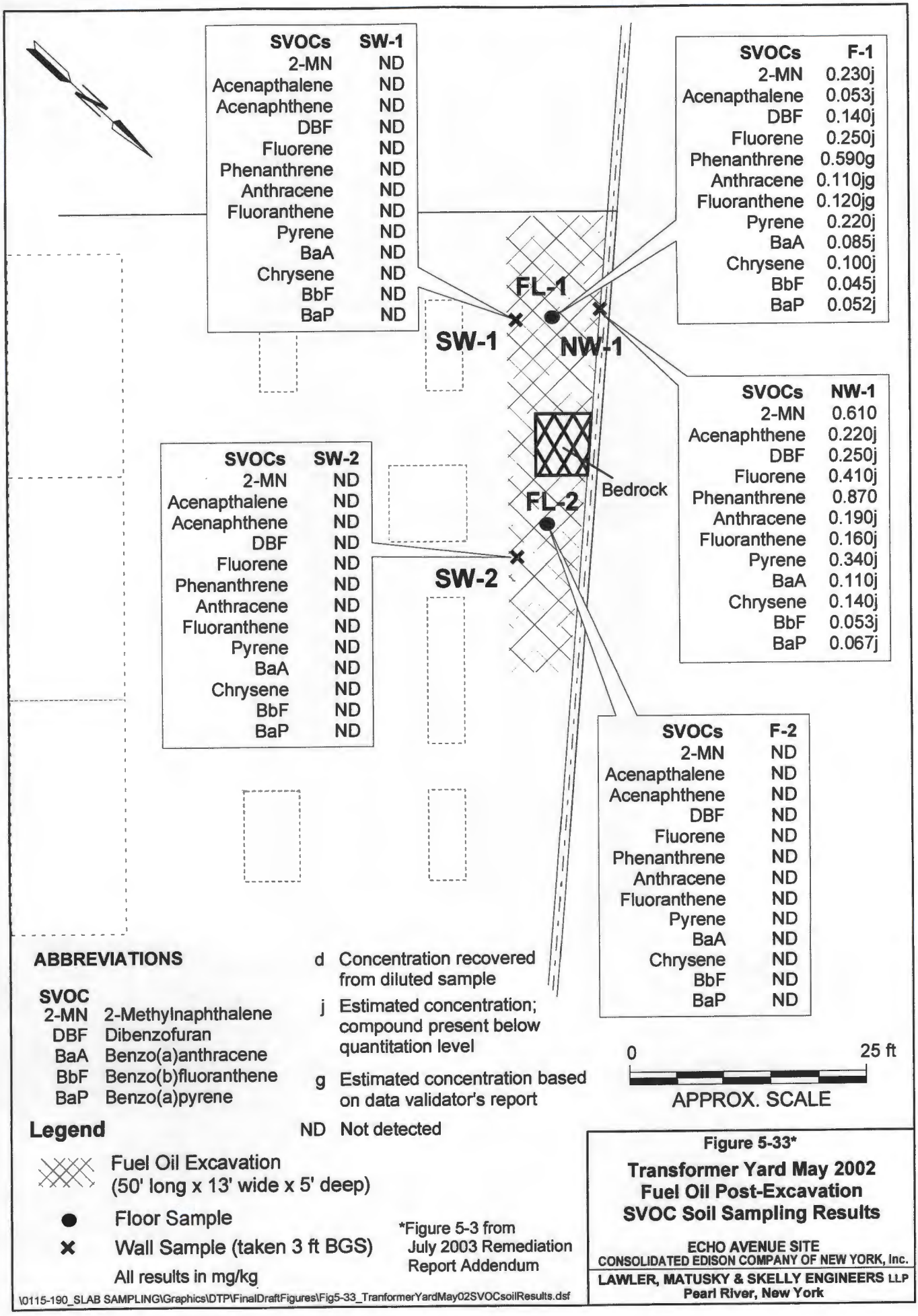

ABBREVIATIONS

SVOC

2-MN	2-Methylnaphthalene
DBF	Dibenzofuran
BaA	Benzo(a)anthracene
BbF	Benzo(b)fluoranthene
BaP	Benzo(a)pyrene

d	Concentration recovered from diluted sample
j	Estimated concentration; compound present below quantitation level
g	Estimated concentration based on data validator's report
ND	Not detected

Legend

Fuel Oil Excavation (50' long x 13' wide x 5' deep)

● Floor Sample

× Wall Sample (taken 3 ft BGS)

All results in mg/kg

*Figure 5-3 from July 2003 Remediation Report Addendum

Figure 5-33*

Transformer Yard May 2002
Fuel Oil Post-Excavation
SVOC Soil Sampling Results

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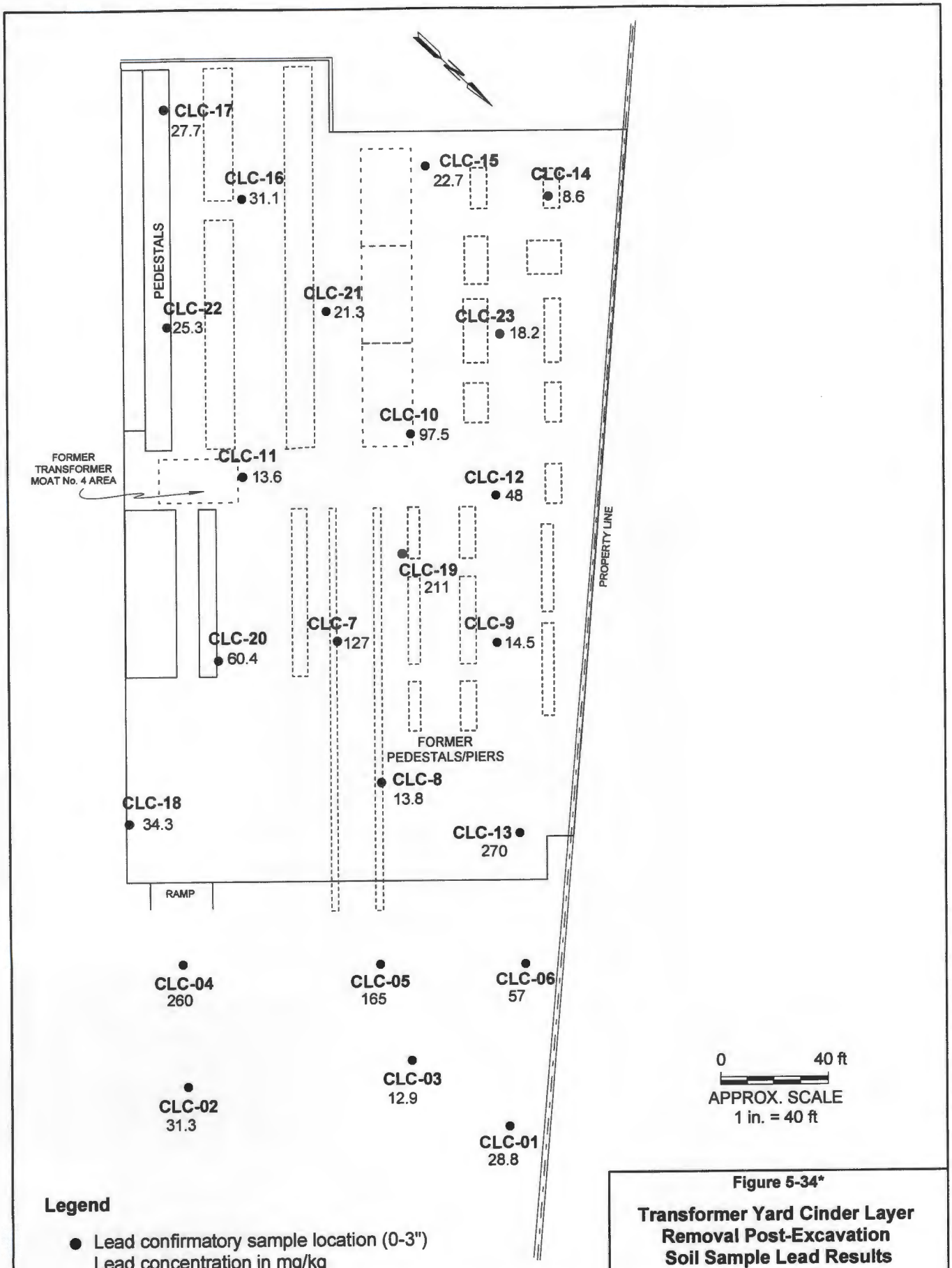

Legend

- Lead confirmatory sample location (0-3")
  Lead concentration in mg/kg

*Figure 5-1 from July 2003 Remediation Report Addendum

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Figure 5-34*

Transformer Yard Cinder Layer Removal Post-Excavation Soil Sample Lead Results

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all the remaining structures in the transformer yard (manholes, pull boxes, pedestals) and excavate the soil to a depth of six ft. The various sumps and above ground pits (EASP-01, EASP-04, EASP-05) located in this area had been removed previously. Sump EASP-02 had been backfilled in 1998 but was removed as part of this remediation work. This work was completed in 2003. Figure 5-19 of this report shows that the final PCB concentrations at the bottom of the excavation were all less than 1 mg/kg. The area was backfilled with clean certified backfill to bring it up to the original grade. Polyethylene mesh sheeting was placed on top of the backfill prior to placement of top soil. The area was planted with a field grass mix to prevent erosion.

5.1.6 On-Site Soils on Remainder of Site

The tunnel connecting the substation building to the office building was cleaned by pressure washing and backfilled in 1998. An asbestos patch located in the tunnel was removed prior to the tunnel being backfilled. One deep sump-like structure, labeled EASP-06, is located near the area where the northeast corner of the South Hall meets the North Hall (see Figure 5-24 for location). It was sampled in November 1996 and had 0.06 mg/kg of PCBs in the bottom. The top 2 feet of the structure was removed, and it was backfilled with clean material. It is assumed, based on the location and depth of this structure, that it was also related to the intake and discharge of water from the bay when the facility was a coal-fired electric generating plant. The sump remains on the site.

A drainpipe that runs along the bulkhead on the northwest side of the property adjacent to the mudflat area was investigated in 1999. Sediment samples were collected at various points. The results are shown on Figure 5-35, formerly Figure 7-25 from the June 2001 Remediation Report; the drainpipe was not removed. The concrete drainpipe from former CB-13 at the southeastern corner of the South Hall also remains in place (see Figure 5-26 of this report for location of the drainpipe from former CB-13).

As part of the final remediation of the site conducted in 2002 to 2003, Con Edison elected to remove the cable duct banks between the transformer yard and cable vault and between the cable vault and tunnel. Sump EASP-03 which had been previously sampled and backfilled, was removed as part of this remediation plan. Figures 5-36 and 5-37, previously Figures 5-6 and 5-7 from the July 2003 Remediation Report Addendum, present the PCB results of the soil after the cable ducts were removed from the transformer yard to the cable vault and from the cable vault to the tunnel, respectively.

Two additional catch basins and their drainpipes located in the northeastern corner of the yard near Echo Bay and one catch basin located at the base of the entrance driveway were removed in

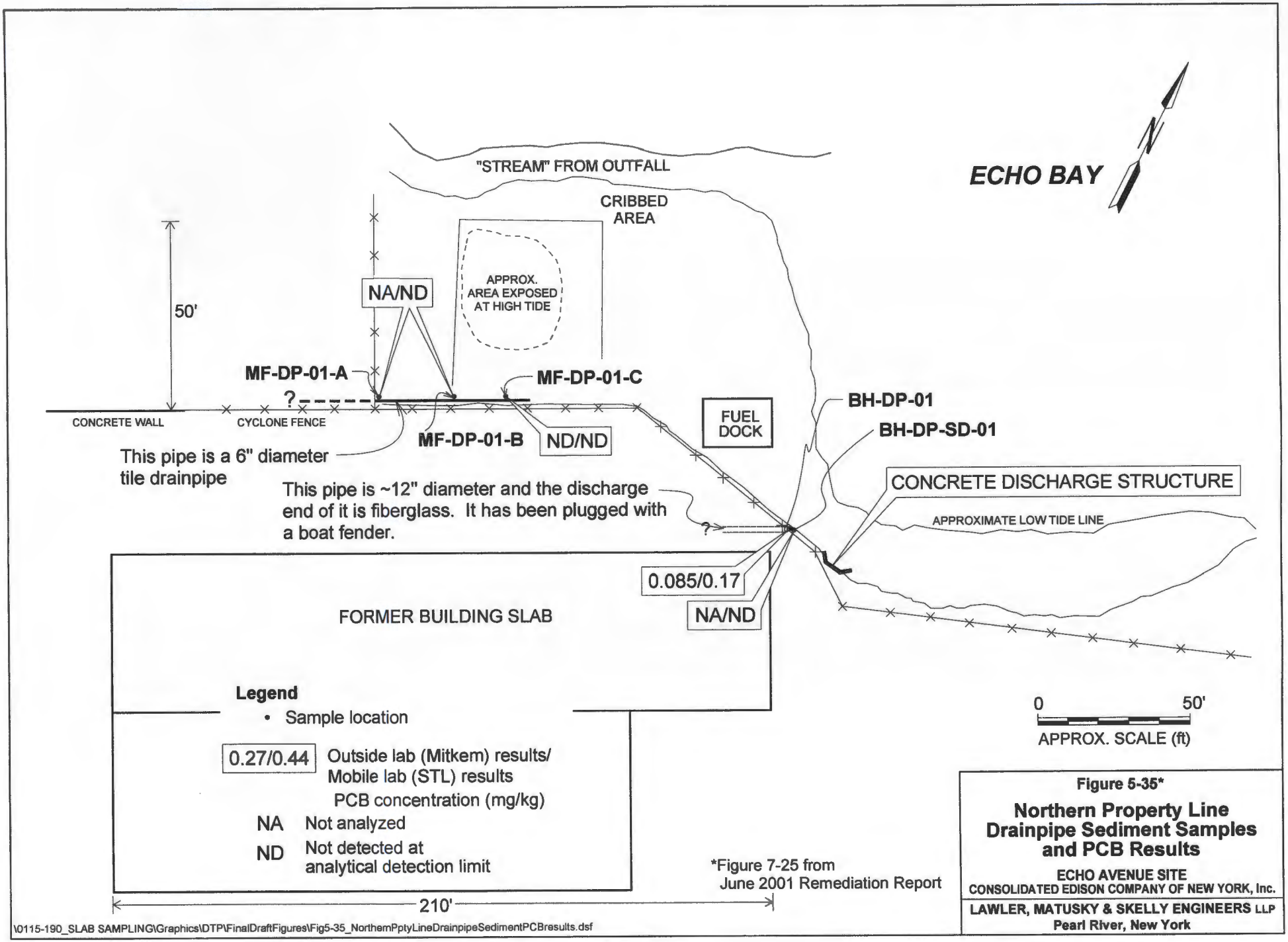


*Figure 7-25 from June 2001 Remediation Report

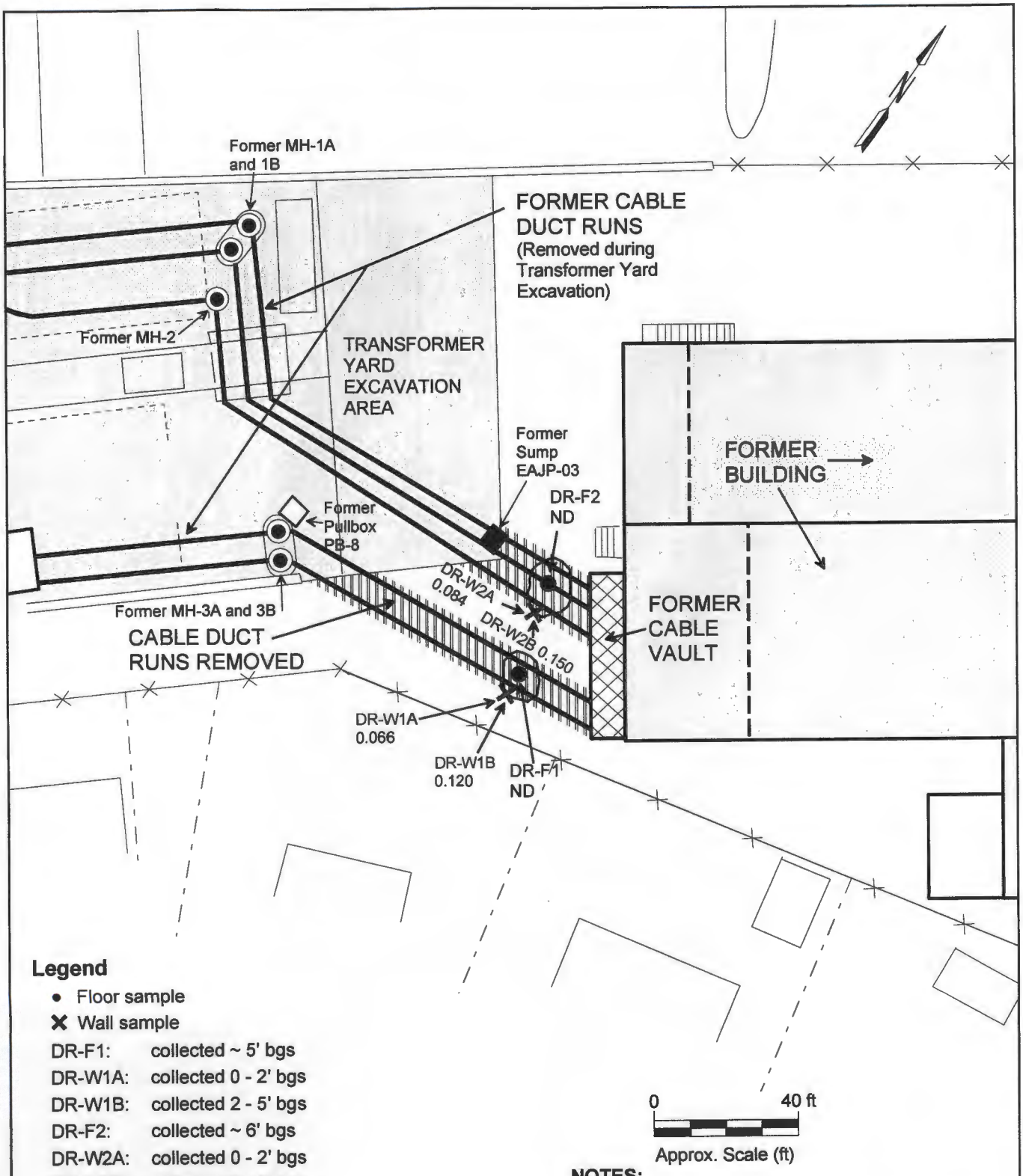
Figure 5-35*

Northern Property Line Drainpipe Sediment Samples and PCB Results

ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-35_NorthernPptyLineDrainpipeSedimentPCBresults.dsf



Legend

- Floor sample
- ✕ Wall sample

DR-F1: collected ~ 5' bgs
DR-W1A: collected 0 - 2' bgs
DR-W1B: collected 2 - 5' bgs
DR-F2: collected ~ 6' bgs
DR-W2A: collected 0 - 2' bgs
DR-W2B: collected 2 - 6' bgs
All results are in mg/kg
ND - Not Detected

NOTES:

Excavated to 5-6 bgs in both excavations looking for sample locations for removed duct runs

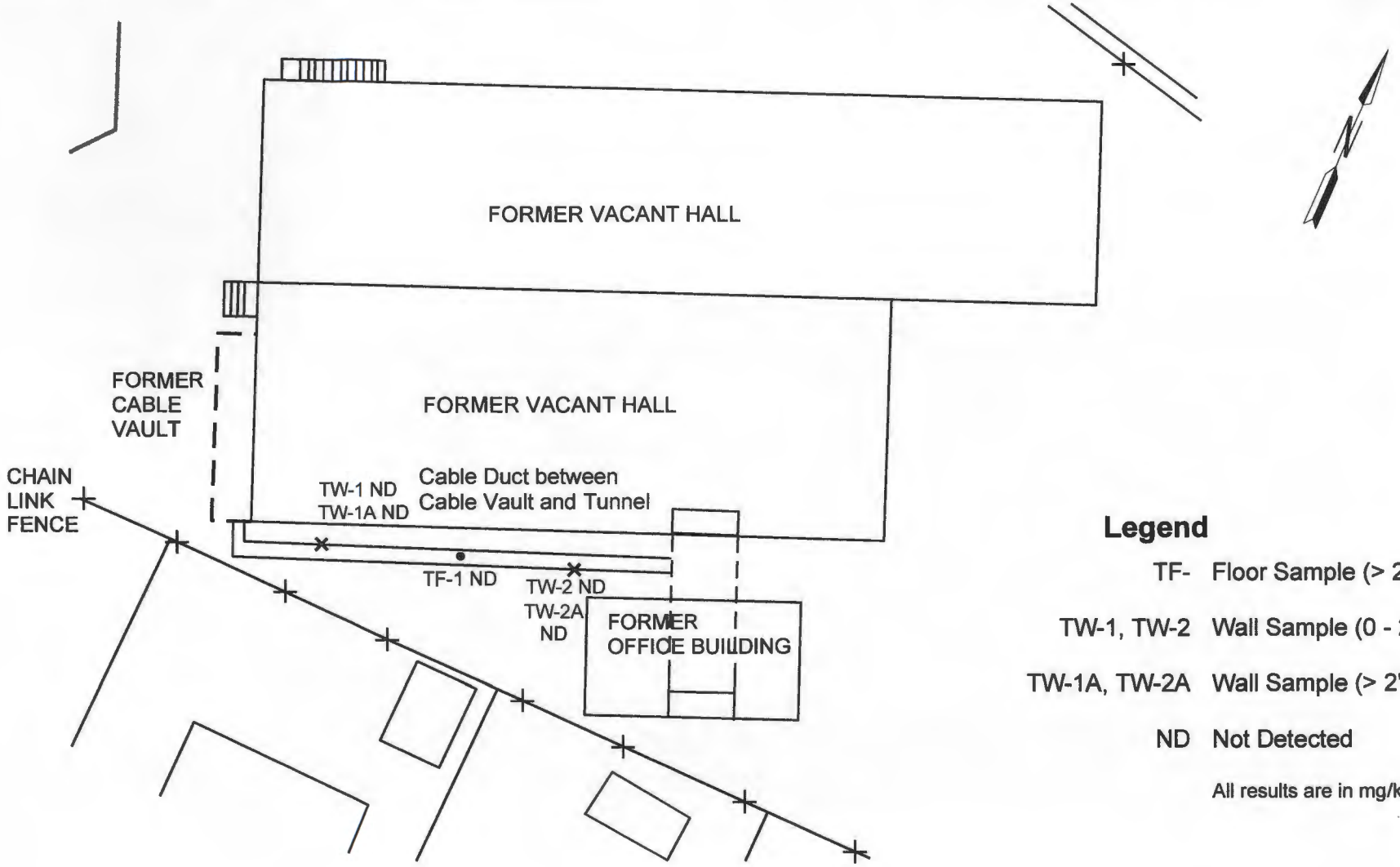
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\
Fig5-36_CableDuctBankAddtlSoilResults.dsf

*Figure 5-6 from July 2003 Remediation Report Addendum

LMS Lawler, Matusky & Skelly Engineers LLP
One Blue Hill Plaza • Pearl River, New York 10965
ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS

Cable Duct Bank Additional Removal Soil Sample Results

Figure 5-36*



Legend

TF-	Floor Sample (> 2')
TW-1, TW-2	Wall Sample (0 - 2')
TW-1A, TW-2A	Wall Sample (> 2')
ND	Not Detected

All results are in mg/kg

*Figure 5-7 from July 2003 Remediation Report Addendum

Figure 5-37*

Tunnel Cable Duct Confirmatory PCB Soil Sample Results

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Pearl River, New York

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-37_TunnelCableDuctPCBsoilResults.dsf

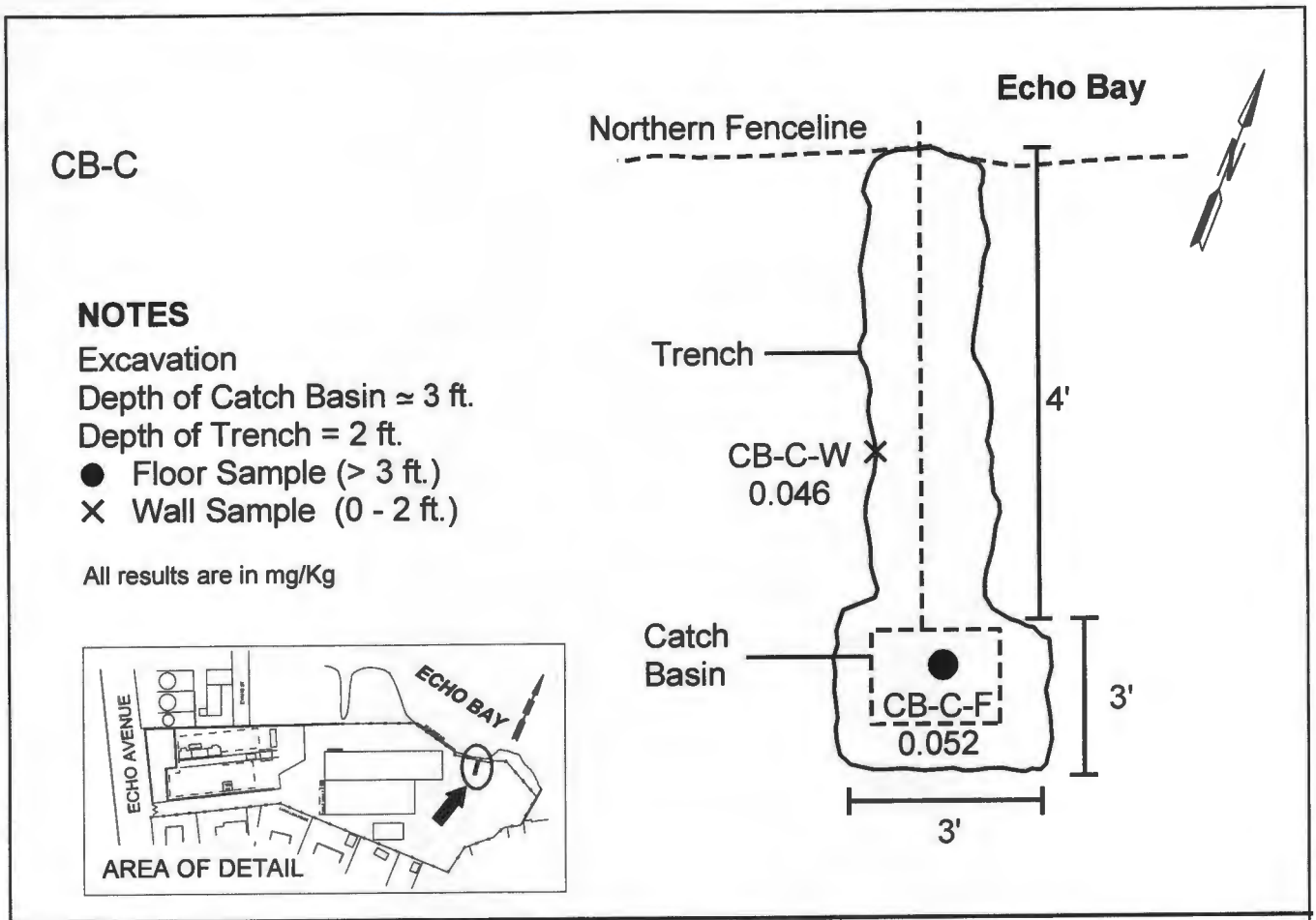
2003. The results of the soil samples collected after removal are provided in Figures 5-38 and 5-39, formerly Figures 5-9 and 5-11 from the July 2003 Remediation Report Addendum.

5.2 GROUNDWATER

Five monitoring wells were originally installed on the site in 1987 and one additional well was installed as part of the Phase II Investigation in 1992. Figures 5-40 to 5-43, formerly Figures 3-2 to 3-5 from the February 1993 Phase II Investigation report, show the water table contour maps for the various tidal phases; as can be seen there is a 6 ft difference in the water table elevation in MW-4 and MW-5. The six wells were all sampled in 1992 as part of the Phase II Investigation and analyzed for TCL organics and TAL inorganics. The results are provided on Table 5-3, formerly Table 4-19 from the 1993 Phase II investigation report and presented graphically on Figure 5-44, formerly Figure 4-21 taken from the 1993 Phase II Investigation report. Table 5-3 presents results for TCL organics that were detected in at least one sample and results for all TAL inorganics. Figure 5-44 presents results for all substances with TAGM 4046 RSCO exceedances and for PCBs. Natural ambient groundwater concentrations have been added to the table (Ref. 30, Appendix A of this Report). In 2002, NYSDEC requested that the remaining wells on the site be re-sampled for TCL organics and TAL inorganics. Only two wells, EAMW-1 and EAMW-4, could be sampled. EAMW-2 and EAMW-3 were destroyed during the transformer yard excavation, EAMW-6 was destroyed during the cable vault drainpipe investigation, and EAMW-5 was bent so severely that it was impossible to sample. The results are provided in Table 5-4, formerly Table 5-14 of the July 2003 Remediation Report Addendum, and presented graphically on Figure 5-45, previously Figure 5-13 taken from the July 2003 Remediation Report Addendum. Table 5-4 summarizes results for TCL organics by category, indicates concentrations of TCL organics, and provides results for all TAL inorganics. Figure 5-45 presents results for all substances with TAGM 4046 RSCO exceedances and for PCBs. After the sample results were received and reviewed by the NYSDEC, the NYSDEC authorized Con Edison to abandon the wells. The wells were abandoned in January 2003 in accordance with the NYSDEC Decommissioning Document (Ref. 29, Appendix A of this Report).

5.3 MUDFLAT SOIL AND SEDIMENT

As part of the Phase II Investigation, 18 core samples were collected from the eastern edge of the property to approximately the end of the bulkhead. The two foot cores were split into four samples with each sample representing a six-inch interval. In addition, sediment samples were collected from inside the drainpipes that discharge to Echo Bay. The results from these sampling events are provided on Figure 5-46, formerly Figure 4-22 taken from HDR|LMS' 1993 Phase II Investigation report. The results show no samples above 1 mg/kg of PCBs were found. Soil and sediment samples were collected in and around the mudflat area of Echo Bay in 1995. The



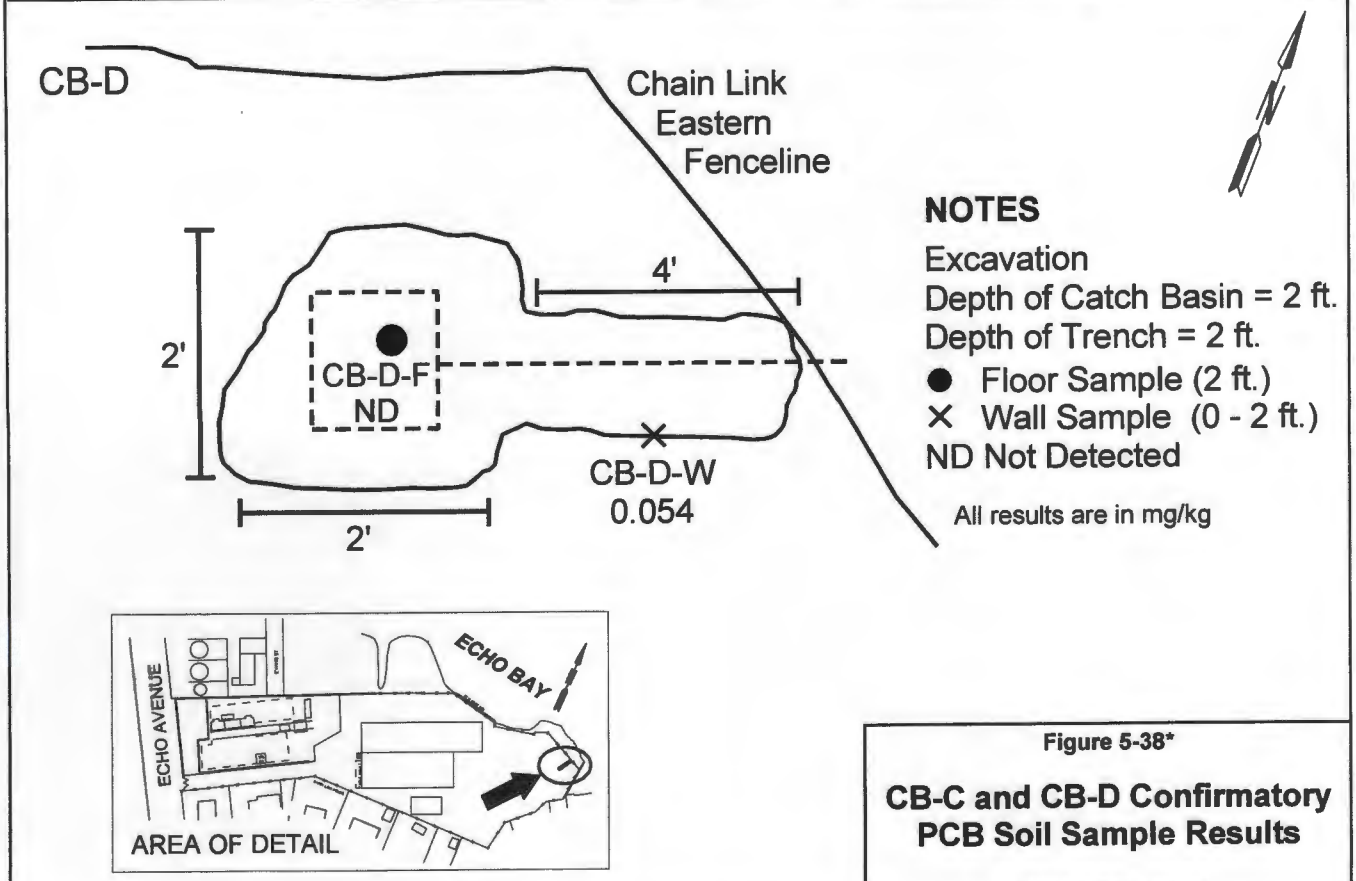


*Figure 5-9 from July 2003 Remediation Report Addendum

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-38_CB-CandDpcbSoilSampleResults.dsf

Figure 5-38*

CB-C and CB-D Confirmatory PCB Soil Sample Results

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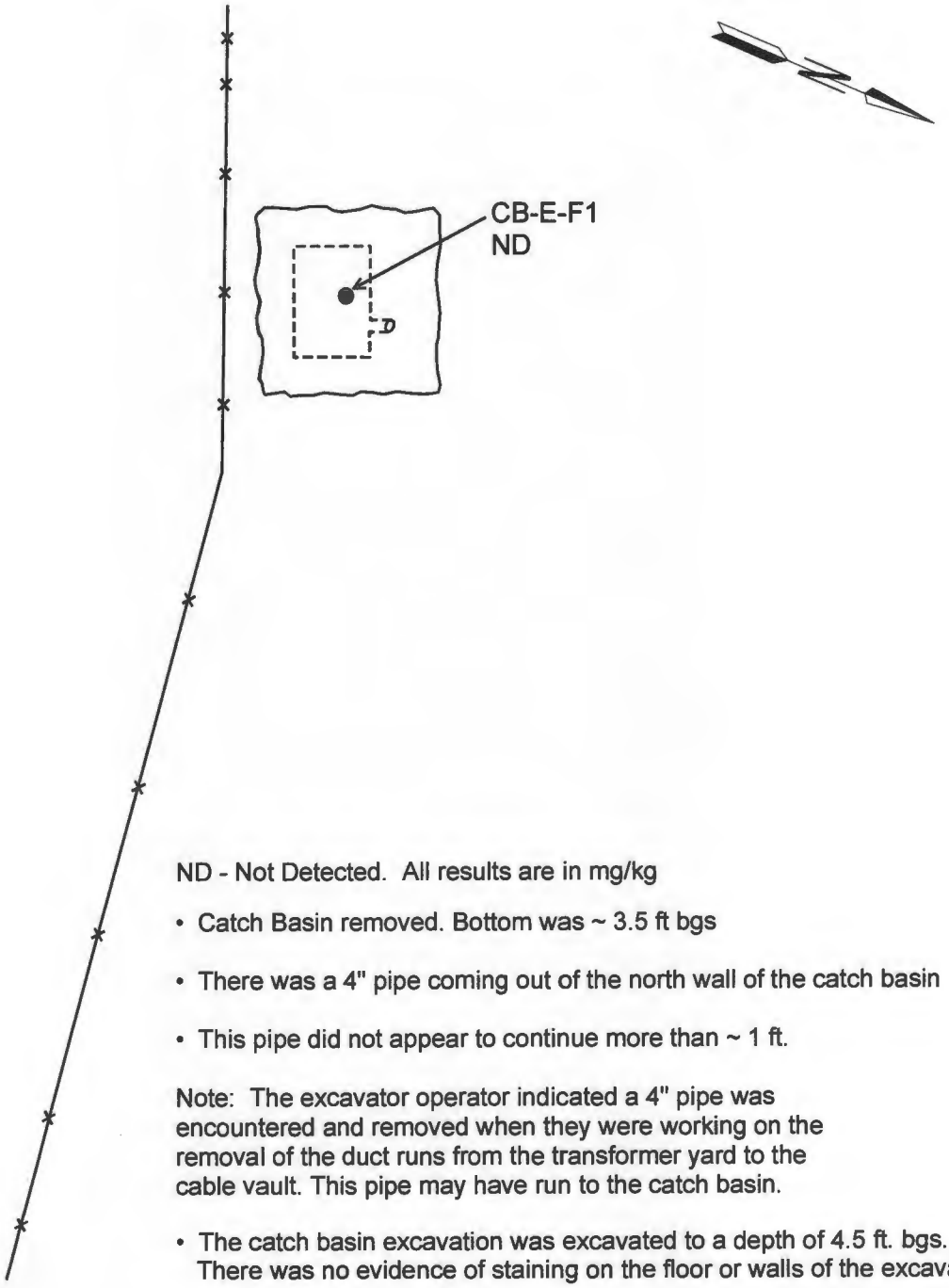
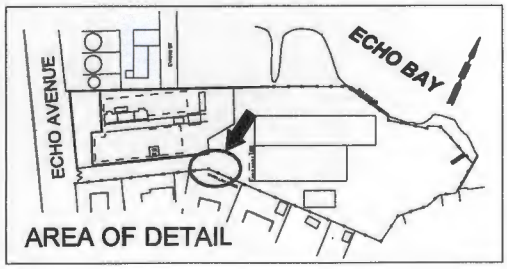


ND - Not Detected. All results are in mg/kg

- Catch Basin removed. Bottom was ~ 3.5 ft bgs
- There was a 4" pipe coming out of the north wall of the catch basin
- This pipe did not appear to continue more than ~ 1 ft.

Note: The excavator operator indicated a 4" pipe was encountered and removed when they were working on the removal of the duct runs from the transformer yard to the cable vault. This pipe may have run to the catch basin.

- The catch basin excavation was excavated to a depth of 4.5 ft. bgs. There was no evidence of staining on the floor or walls of the excavation.
- The floor sample was collected from 4.5 ft bgs



0 5 ft

SCALE
1 in. = 5 ft

Figure 5-39*

CB-E Confirmatory PCB Soil Sample Result

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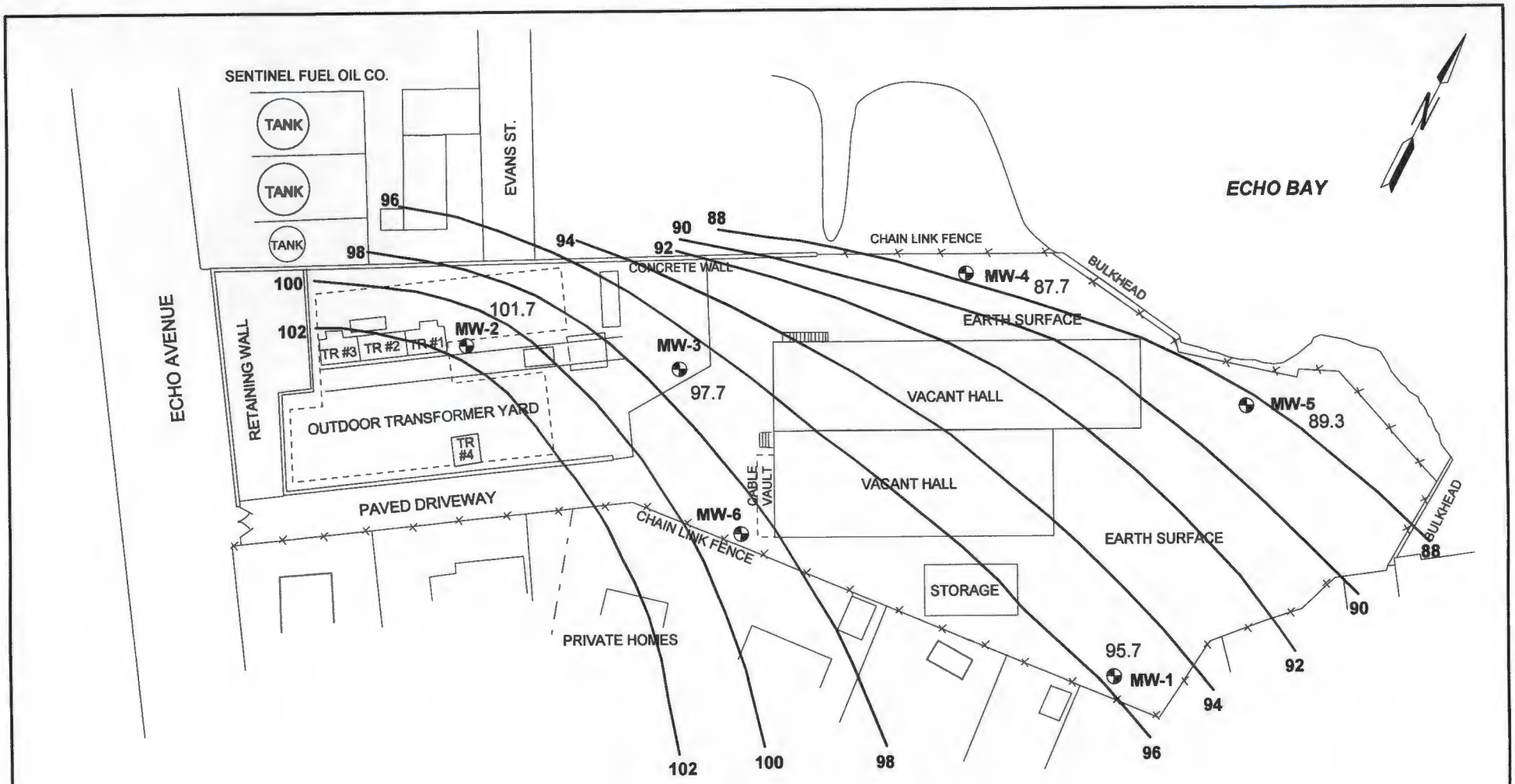
*Figure 5-11 from July 2003 Remediation Report Addendum

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-39_CB-EpcbSoilSampleResult.dsf



LEGEND

- Location of monitoring well
- 101.7 Groundwater elevation
- 98 Groundwater contour
- Contour interval is 2 ft, datum is MSL

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 3-2 from 1993 Phase II Investigation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-40-43_WaterTableContours.dsf

Figure 5-40*

Water Table Contour Map: Falling Tide

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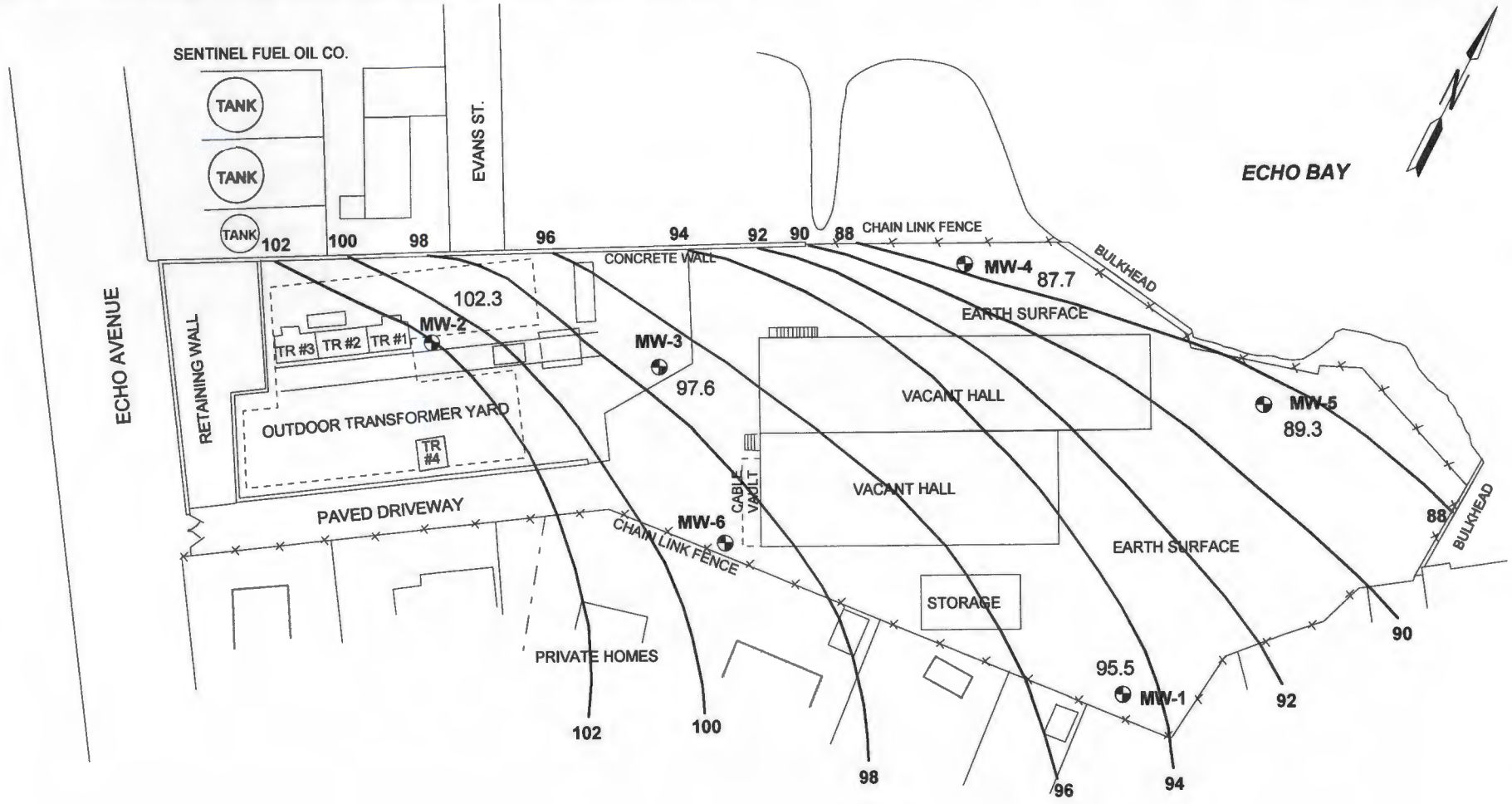

LEGEND

- Location of monitoring well
- 101.7 Groundwater elevation
- 98 Groundwater contour
- Contour interval is 2 ft, datum is MSL

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 3-2 from 1993 Phase II Investigation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-40-43_WaterTableContours.dsf

Figure 5-41*

Water Table Contour: Low Tide

ECHO AVENUE SITE
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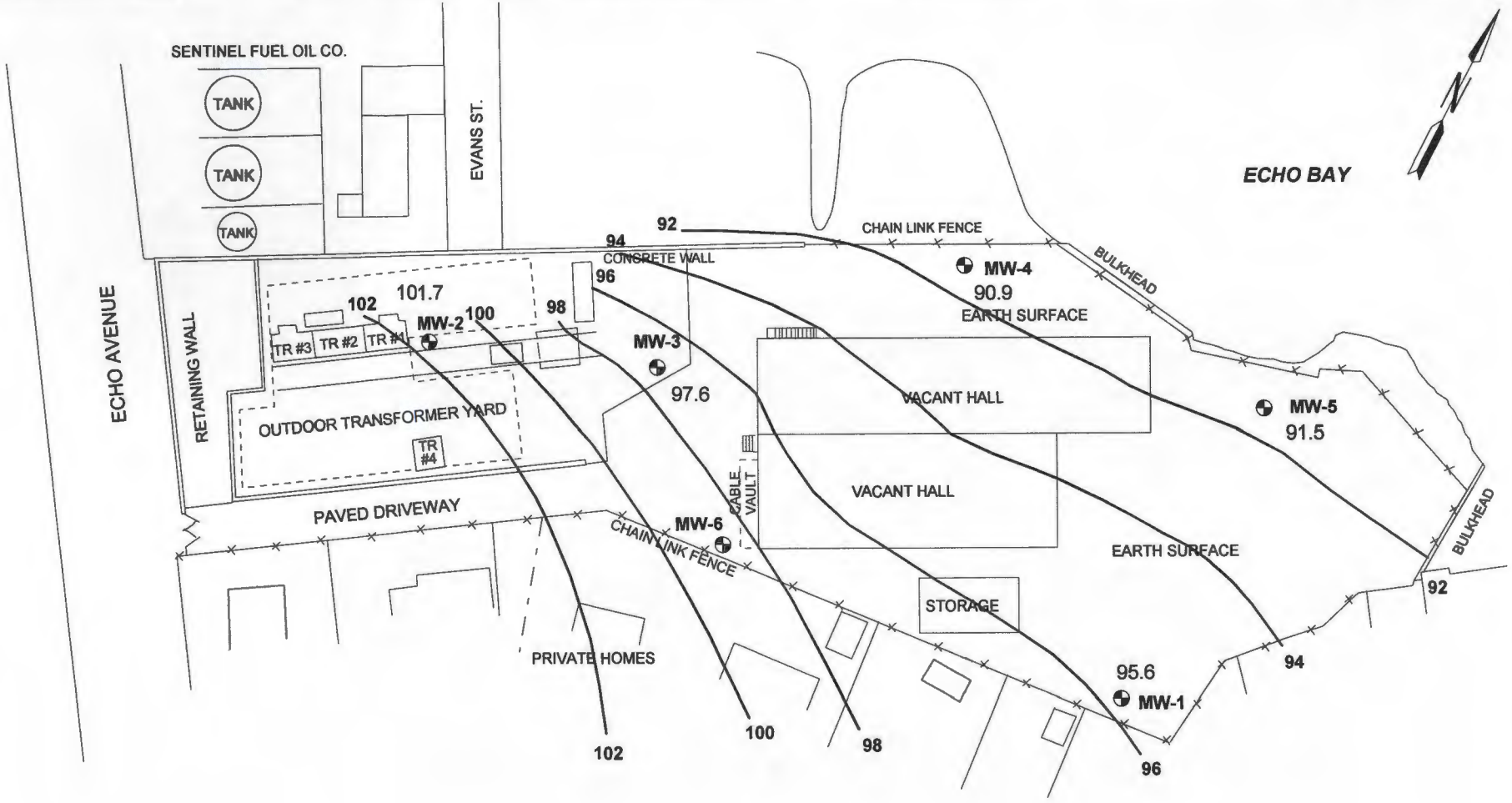

LEGEND

- Location of monitoring well
- 101.7 Groundwater elevation
- 98 Groundwater contour
- Contour interval is 2 ft, datum is MSL

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 3-2 from 1993 Phase II Investigation Report

Figure 5-42*

Water Table Contour Map: Rising Tide

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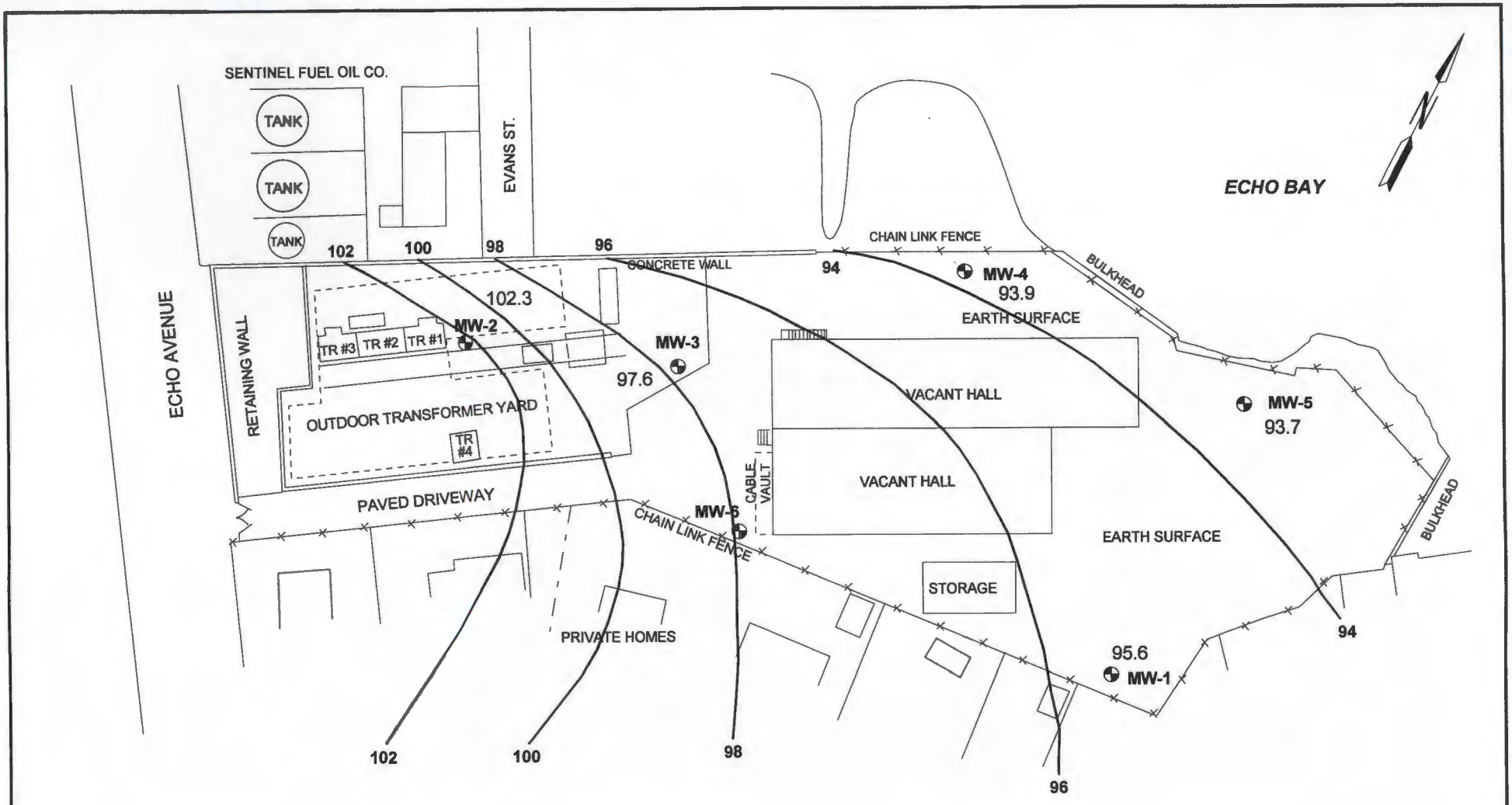
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-40-43_WaterTableContours.dsf



LEGEND

- Location of monitoring well
- 101.7 Groundwater elevation
- 98 Groundwater contour
- Contour interval is 2 ft, datum is MSL

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 3-2 from 1993 Phase II Investigation Report

\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-40-43_WaterTableContours.dsf

Figure 5-43*

Water Table Contour Map: High Tide

ECHO AVENUE SITE
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Originally Table 4-19 (February 1993 Phase II Investigation Report)

GROUNDWATER DATA SUMMARY (JULY, SEPTEMBER, & DECEMBER 1992)

CON EDISON - Echo Avenue

PARAMETER	EAMW-1 Jul 92	RE EAMW-1 Jul 92	EAMW-1 Sep 92**	EAMW-1 Dec 92**	EAMW-2 Jul 92	EAMW-2 Sep 92**	EAMW-2 Dec 92**	EAMW-3 Jul 92	RE EAMW-3 Jul 92	FILTRATED EAMW-3 Jul 92	EAMW-3 Sep 92**	EAMW-3 Dec 92**	FIELD BLANK 9 Sep 92	NYSDEC CLASS GA STANDARDS
VOLATILE ORGANICS (µg/l)	ND	NR	NU	ND	ND	NU	ND	ND	NR	NR	NU	ND	ND	
Tentatively Identified Compounds														
Unknown	ND	NR	NU	ND	ND	NU	ND	8.0 j	NR	NR	NU	ND	ND	50 GV
2-Propanone	ND	ND	NU	.2 j	ND	NU	1.0 j	ND	NR	NR	NU	1.0 j	ND	50 GV
Carbon disulfide	ND	ND	NU	ND	ND	NU	3.0 j	ND	NR	NR	NU	ND	ND	50 GV
SEMIVOLATILE ORGANICS (µg/l)														
bis(2-Ethylhexyl)phthalate	2 b j	6.5 b	39 b	NR	1.5 j	15 b	NR	ND	11 b	NR	30 b	NR	19 b	50
Tentatively Identified Compounds														
Unknown hydrocarbon	2 j	27.5 (8) j	2 j	NR	ND	ND	NR	ND	ND	NR	ND	NR	NR	50 GV
Unknown	ND	ND	ND	NR	2 j	10 j	NR	3 j	2.5 j	NR	ND	NR	NR	50 GV
Unknown phthalate	ND	ND	ND	NR	5 j	ND	NR	ND	ND	NR	ND	NR	NR	50 GV
Unknown acid	ND	ND	ND	NR	ND	ND	NR	10 j	ND	NR	ND	NR	NR	50 GV
alpha-Amyrin	ND	ND	80 j	NR	ND	ND	NR	ND	ND	NR	ND	NR	NR	50 GV
PESTICIDES/PCBs (µg/l)	ND	NR	ND	NR	ND	ND	NR	ND	NR	ND ±	ND	NR	ND	

( ) - Number of compounds in total.
* - Pesticides/PCB samples were analyzed using low-level methods in accordance with NYSDEC CLP 12/91 protocol.
** - 9/92 and 12/92 volatile samples were analyzed using EPA low-level method 542.2.
± - Sample only analyzed for PCBs.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
GV - Guidance value.
ND - Not detected at analytical detection limit;.
NR - Not run.
NU - Data not usable due to holding time exceedance.
RE - Re-analysis.

Table 5-3 (Page 2 of 5)

Originally Table 4-19 (February 1993 Phase II Investigation Report)

GROUNDWATER DATA SUMMARY (JULY, SEPTEMBER, & DECEMBER 1992)

CON EDISON - Echo Avenue

PARAMETER	EAMW-4 Jul 92	EAMW-4 Sep 92**	EAMW-4 Dec 92**	EAMW-5 Jul 92	EAMW-5 Sep 92**	EAMW-5 Dec 92**	EAMW-6 Jul 92	EAMW-6 Sep 92**	EAMW-6 Dec 92**	NYSDEC CLASS GA STANDARDS
VOLATILE ORGANICS (µg/l)										
Toluene	2 j	NU	ND	ND	NU	ND	ND	NU	ND	5.0
Tentatively Identified Compounds										
Unknown	5.0 j	NU	ND	ND	NU	ND	ND	NU	ND	50 GV
2-Propanone	ND	NU	ND	ND	NU	1.0 j	ND	NU	ND	50 GV
SEMIVOLATILE ORGANICS (µg/l)										
bis(2-Ethylhexyl)phthalate	ND	25 b	NR	9 b	22 b	NR	1.5 j	13 b	NR	50
Tentatively Identified Compounds										
Unknown hydrocarbon	ND	10 (3) j	NR	ND	23 (2) j	NR	ND	26 (7) j	NR	50 GV
Unknown	ND	24 (7) j	NR	ND	ND	NR	2 j	53 (4) j	NR	50 GV
Unknown polycyclic cpd.	ND	5 j	NR	ND	ND	NR	ND	ND	NR	50 GV
Unknown cyclic cpd.	ND	3 j	NR	ND	ND	NR	ND	ND	NR	50 GV
Phenol, 4,4'-butylidenebis(2	ND	ND	NR	ND	ND	NR	ND	3 j	NR	50 GV
PESTICIDES/PCBs (µg/l)	ND	ND	NR	ND	ND	NR	ND	ND	NR	

( ) - Number of compounds in total.
* - Pesticides/PCB samples were analyzed using low-level methods in accordance with NYSDEC CLP 12/91 protocol.
** - 9/92 and 12/92 volatile samples were analyzed using EPA low-level method 542.2.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
GV - Guidance value.
ND - Not detected at analytical detection limit.
NR - Guidance value.
NU - Data not usable due to holding time exceedance.

Originally Table 4-19 (February 1993 Phase II Investigation Report)

GROUNDWATER DATA SUMMARY (JULY, SEPTEMBER, & DECEMBER 1992)

CON EDISON - Echo Avenue

PARAMETER	EAMW-7 Jul 92	EAMW-7 Sep 92**	EAMW-7 Dec 92**	FIELD BLANK 8 Jul 92	FIELD BLANK Sep 92**	FIELD BLANK Dec 92**	TRIP BLANK Jul 92	TRIP BLANK Sep 92**	TRIP BLANK Dec 92**	NYSDEC CLASS GA STANDARDS
VOLATILE ORGANICS (µg/l)	ND	NU	ND	ND	NU	ND	ND	NU	ND	*
Tentatively Identified Compounds										
Hexane	ND	NU	ND	20.0 j	NU	1.0 j	ND	NU	ND	50 GV
2-Propanone	ND	NU	ND	ND	NU	1.0 j	ND	NU	ND	50 GV
SEMIVOLATILE ORGANICS (µg/l)										
bis(2-Ethylhexyl)phthalate	ND	44 b	NR	2 j	19 b	NR	NR	NR	NR	50
Tentatively Identified Compounds										
Unknown hydrocarbon	ND	37 (8) j	NR	4.5 (2) j	10 j	NR	NR	NR	NR	50 GV
Unknown	2.5 j	ND	NR	ND	ND	NR	NR	NR	NR	50 GV
Unknown phthalate	ND	ND	NR	7 (2) j	ND	NR	NR	NR	NR	50 GV
Unknown acid	2.5 j	ND	NR	ND	ND	NR	NR	NR	NR	50 GV
PESTICIDES/PCBs (µg/l)	ND	ND	NR	ND	ND	NR	NR	NR *	NR	

( ) - Number of compounds in total.
* - Pesticides/PCB samples were analyzed using low-level methods in accordance with NYSDEC CLP 12/91 protocol.
** - 9/92 and 12/92 volatile samples were analyzed using EPA low-level method 542.2.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
GV - Guidance value.
ND - Not detected at analytical detection limit.
NR - Not run.
NU - Data not usable due to holding time exceedance.

GROUNDWATER DATA SUMMARY (JULY, SEPTEMBER, & DECEMBER 1992)

CON EDISON - Echo Avenue

PARAMETER	EAMW-1 Jul 92	EAMW-1 Sep 92	EAMW-2 Jul 92	EAMW-2 Sep 92	EAMW-3 Jul 92	FILTRATE EAMW-3 Jul 92	EAMW-3 Sep 92	EAMW-4 Jul 92	EAMW-4 Sep 92	NYSDEC CLASS GA STANDARDS	NATURAL GW AMBIENT RANGES (n)
TAL METALS (µg/l)											
Aluminum	919	442	10,700	2,990	94,100	ND	50,800	254	1,190	NS	<5.0 - 1,000
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0 GV	-
Arsenic	29.8	15.7 N	36.2	26.4 N	4.4 B	ND	3.4 B N	11.7 SA	10.8 N	25	<1.0 - 30
Barium	72.5 B	43.8 B	109 B	51.4 B	810	122 B	459	70.8 B	72.1 B	1,000	10 - 500
Beryllium	ND	ND	ND	0.80 B	5.6	1.9 B	3.6 B	3.3 B	3.6 B	3.0 GV	<10
Cadmium	11.0	4.4 B N	5.0	ND N	26.3	3.8 B	14.5 N	ND	ND N	10	<1.0
Calcium	27,700	20,800	38,600	38,600	62,100	51,400	59,700	211,000	199,000	NS	1,000 - 150,000
Chromium	ND	ND	27.1	9.6 B	200	ND	109	ND	ND	50	<1.0 - 5.0
Cobalt	8.8 B	ND N	ND	ND N	60.5	ND	37.9 B N	ND	ND N	NS	<10
Copper	17.6 B	9.4 B	27.8	8.4 B	149	5.6 B	83.7	29.3	27.9	200	<1.0 - 30
Iron	26,800	10,700 N	12,300	4,270	118,000	139	60,400 N	9,170	2,490 N	300 (m)	10 - 10,000
Lead	17.0 N	8.9	27.8 N	7.9	88.9 N	ND N	58.9 SA	18.9 N +	21.0 W	25	<15
Magnesium	11,000	6,920	3,770 B	3,320 B	25,000	3,400 B	16,500	64,600	605,000	35,000 GV	1,000 - 50,000
Manganese	1,180	429 E N	225	189 E N	1,660	626	1,110 E N	648	214 E N	300 (m)	<1.0 - 1,000
Mercury	ND N	ND	0.23 N	ND	0.44 N	ND N	0.14 B	0.39 N	0.40	2.0	<1.0
Nickel	ND	15.2 B N	13.0 B	9.6 B N	158	ND	95.0 N	ND	12.9 B N	NS	<10 - 50
Potassium	6,260	4,320 B	17,800	16,800	16,900	5,130	12,900	209,000	161,000	NS	1,000 - 10,000
Selenium	ND	ND N W	ND	1.2 B N W	ND W	ND W	ND N W	ND W	ND N	10	<1.0 - 10
Silver	ND	ND N	ND	ND N	ND	ND	ND N	3.7 B	ND N	50	<5.0
Sodium	84,700	40,500	32,000	34,300	20,100	19,300	21,500	531,000	979,000 E	20,000	500 - 120,000
Thallium *	ND N W	ND N	ND N W	ND N	1.5 B	ND N	ND N W	11.0 B	ND N W	4.0 GV	-
Vanadium	ND	3.7 B	ND	9.0 B	234	ND	127	ND	7.6 B	NS	<1.0 - 10
Zinc	104	150	64.8	33.5	470	3.1 B	291	172	244	300	<10 - 2,000
Cyanide	ND	ND	ND	ND	ND	NR	ND	ND	ND	100	-

(m) - Iron and manganese not to exceed 500 µg/l

(n) Ref. 28, Appendix A

\+ - Correlation coefficient for the MSA is <0.995.

* - Thallium results are likely biased low due to low matrix spike recovery; actual concentrations may exceed the detection limit

B - Value is less than the contract-required detection limit but greater than the instrument detection limit

E - Estimated value.

N - Spiked sample recovery is not within control limits.

W - Post-digestion spike-out of control limits; sample absorbance is less than 50% of spike absorbance.

GV - Guidance value.

ND - Not detected at analytical detection limit; see Appendix G for detection limit

NS - No standard

SA - Value determined by the method of standard addition.

Originally Table 4-19 (February 1993 Phase II Investigation Report)

GROUNDWATER DATA SUMMARY (JULY, SEPTEMBER, & DECEMBER 1992)

CON EDISON - Echo Avenue

PARAMETER	EAMW-6 Jul 92	EAMW-6 Sep 92	EAMW-8 Jul 92	EAMW-8 Sep 92	EAMW-7 Jul 92	EAMW-7 Sep 92	FIELD BLANK 8 Jul 92	FIELD BLANK 9 Sep 92	NYSDEC CLASS GA STANDARDS	NATURAL GW AMBIENT RANGES (n)
TAL METALS (µg/l)										
Aluminum	216	32.0 B	4,880	8,480	5,080	7,330	ND	11.1 B	NS	<5.0 - 1,000
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	3.0 GV	-
Arsenic	ND W	ND N W	ND	ND N	ND	ND N	ND	ND N	25	<1.0 - 30
Barium	127 B	146 B	114 B	166 B	116 B	153 B	ND	ND	1,000	10 - 500
Beryllium	4.1 B	3.9 B	ND	1.0 B	ND	1.2 B	ND	ND	3.0 GV	<10
Cadmium	ND	ND N	ND	ND N	3.3 B	3.0 B N	ND	ND N	10	<1.0
Calcium	257,000	231,000	51,900	56,400	52,100	57,200	75.0 B	63.8 B	NS	1,000 - 150,000
Chromium	ND	ND	9.2 B	20.7	14.4	18.0	ND	ND	50	<1.0 - 5.0
Cobalt	ND	ND N	ND	ND N	ND	ND N	ND	ND N	NS	<10
Copper	15.3 B	10.7 B	19.6 B	24.0 B	18.6 B	20.9 B	ND	ND	200	<1.0 - 30
Iron	436	83.4 B N	7,610	13,000 N	8,110	11,000 N	ND	ND N	300 (m)	10 - 10,000
Lead	ND N W R	ND W	2.2 B N R	5.1	2.8 B N R	4.5	ND N R	ND	25	<15
Magnesium	773,000	649,000	17,800	19,900	17,700	19,900	ND	118 B	35,000 GV	1,000 - 50,000
Manganese	6.0 B	ND E N	559	538 E N	595	449 E N	ND	ND E N	300 (m)	<1.0 - 1,000
Mercury	ND N	ND	ND N	ND	ND N	ND	ND N	ND	2.0	<1.0
Nickel	ND	7.3 B N	ND	14.9 B N	18.3 B	21.2 B N	ND	ND N	NS	<10 - 50
Potassium	252,000	189,000	7,060	9,020	7,230	8,280	ND	73.6 B	NS	1,000 - 10,000
Selenium	ND W	4.5 B N	ND	1.1 B N	ND	1.4 B N	ND W	ND N	10	<1.0 - 10
Silver	ND	ND N	ND	ND N	ND	ND N	ND	ND N	50	<5.0
Sodium	6,300,000	4,990,000	97,400	102,000	98,000	101,000	40.3 B	1,160 B	20,000	500 - 120,000
Thallium *	ND N	ND N W	ND N W	ND N	ND N W	ND N	ND N	ND N	4.0 GV	-
Vanadium	ND	3.4 B	ND	26.7 B	ND	23.7 B	ND	ND	NS	<1.0 - 10
Zinc	46	30.8	29.1	59.9	36.9	49.7	4.7 B	7.2 B	300	<10 - 2,000
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	100	-

(m) - Iron and manganese not to exceed 500 µg/l.

(n) Ref. 28, Appendix A

B - Value is less than the contract-required detection limit but greater t detection limit

E - Value estimated due to interference.

N - Spiked sample recovery is not within control limits.

R - Duplicate analysis not within control limits.

* - Thallium results are likely biased low due to low matrix spike recovery; actual concentrations may exceed the detection limit.

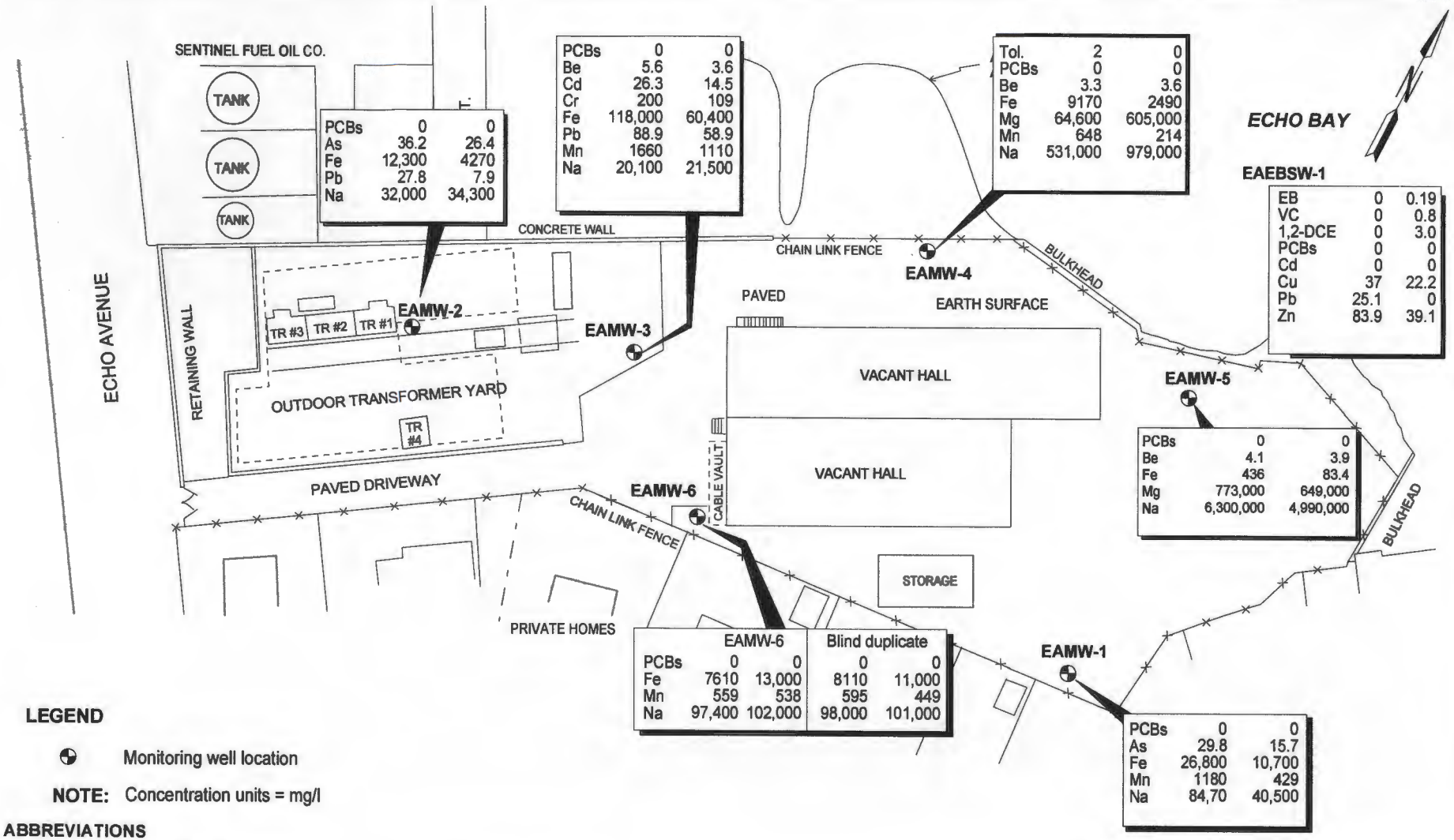
W - Post-digestion spike out of control limits; sample absorbance is less than 50% of spike absorbance.

GV - Guidance value.

ND - Not detected at analytical detection limit; see Appendix G for detection limit.

NS - No standard.

SA - Value determined by the method of standard addition.



LEGEND

⊕ Monitoring well location

NOTE: Concentration units = mg/l

ABBREVIATIONS

As	Arsenic	Mg	Magnesium	1,2-DCE	cis-1,2-dichloroethylene
Be	Beryllium	Mn	Manganese	VC	Vinyl chloride
Cd	Cadmium	Na	Sodium	EB	Ethyl benzene
Cr	Chromium	Pb	Lead		
Cu	Copper	Tol	Toluene		
Fe	Iron	Zn	Zinc		

0 80 160 ft

SCALE

1 in. = 80 ft

NOTE: First number is from first round (July 1992), second number is from second round (Sept. 1992); volatiles (Dec. 1992).

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*Figure 4-21 from 1993 Phase II Investigation Report

Figure 5-44*

Selected Chemical Constituents in the Groundwater and Echo Bay

ECHO AVENUE SITE

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Pearl River, New York

TABLE 5-4 (1 of 1)

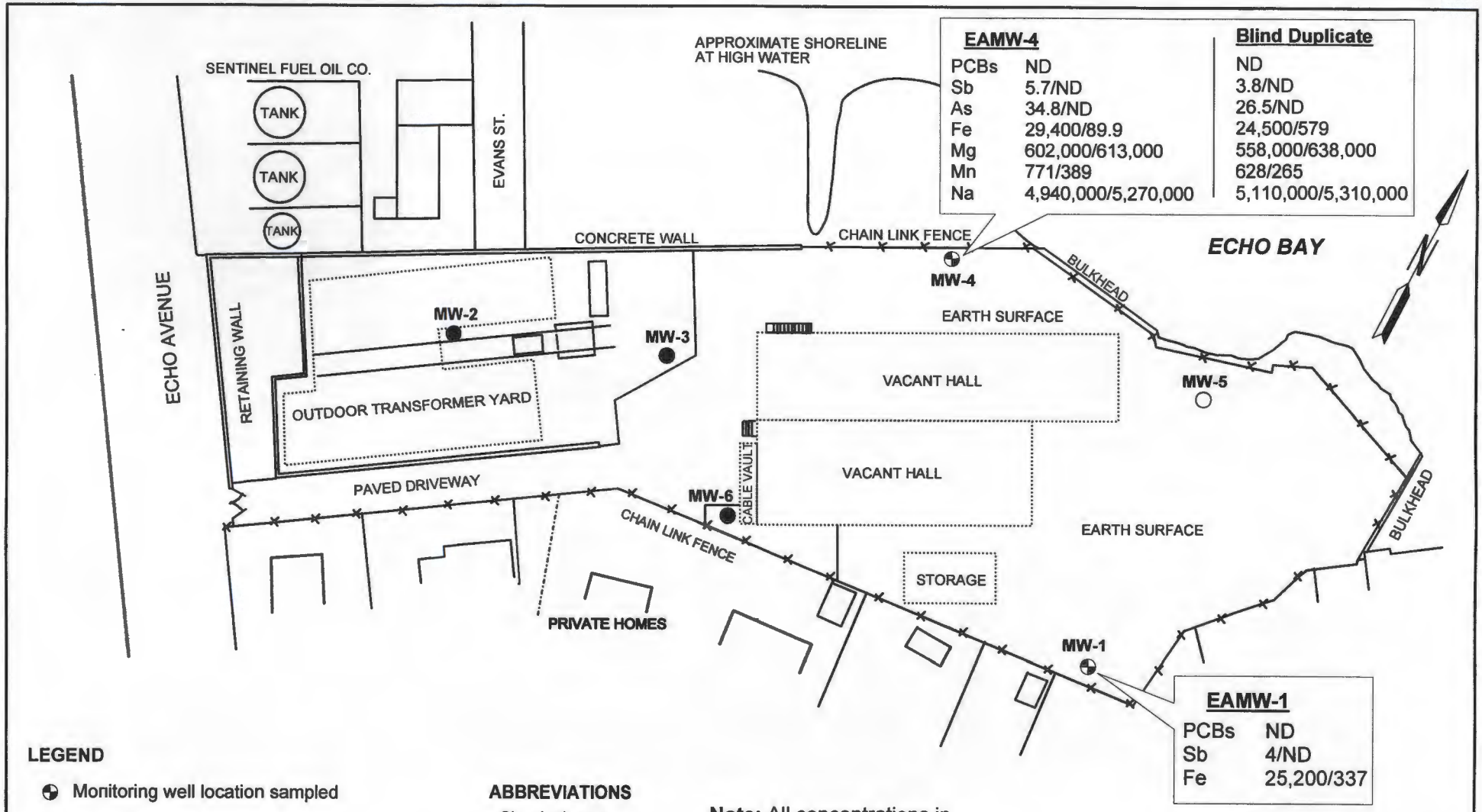
Originally Table 5-14 (July 2003 Remediation Report Addendum)

MONITORING WELL GROUNDWATER DATA SUMMARY
(August 2002)

PARAMETER	EAMW-1	EAMW-4	EAMW-8 (Blind Duplicate of EAMW-4)	Trip Blank	NYSDEC CLASS GA GROUNDWATER STANDARD[a]
VOLATILE ORGANICS (ug/L)	ND	ND	ND	ND	-
Tentatively Identified Compounds	ND	ND	ND	ND	-
SEMIVOLATILE ORGANICS (ug/L)					
bis(2-Ethylhexyl)phthalate	2 j	4 j	4 j	NR	5
Tentatively Identified Compounds					
Caprolactam	19 nj	69 nj	52 nj	NR	NS
Unknown	14 j	ND	ND	NR	NS
PESTICIDES (ug/L)	ND	ND	ND	NR	-
PCBs (ug/L)[b]	ND	ND	ND	NR	0.09
METALS (ug/L)[c]					
Aluminum	378 NJ/17.4 BNJ	115 BNJ/ND NJ	63.6 BNJ/ND NJ	NR	NS
Antimony	**4 BJ**/ND J	**5.7 BJ**/ND J	**3.8 BJ**/ND J	NR	3
Arsenic	18.6J/ND J	**34.8J**/ND J	**26.5J**/ND J	NR	25
Barium	94.5 BNJ/41.5 BNJ	113 BNJ/81.8 BNJ	105 BNJ/75 BNJ	NR	1,000
Beryllium	ND NJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	3 GV
Cadmium	ND J/ND J	ND J/ND J	ND J/ND J	NR	5
Calcium	21,100 J/19,400 J	240,000 J/238,000 J	213,000 J/215,000 J	NR	NS
Chromium	ND NJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	50
Cobalt	ND NJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	NS
Copper	38 NJ/9.1 BNJ	18.3 BNJ/2.3 BNJ	16 BNJ/2.3 BNJ	NR	200
Iron	**25,200 NJ/337 NJ**	**29,400 NJ**/89.9 BNJ	**24,500 NJ/579 NJ**	NR	300[d]
Lead	19.2 NJ/ND NJ	10.4 NJ/ND NJ	5.8 BNJ/ND NJ	NR	25
Magnesium	5,730 J/5,640 J	**602,000 J/613,000 J**	**558,000 J/638,000 J**	NR	35,000 GV
Manganese	248 NJ/149 NJ	**771 NJ/389 NJ**	**628 NJ**/265 NJ	NR	300[d]
Mercury	ND J/ND J	ND J/ND J	ND J/ND J	NR	0.7
Nickel	9.7 BNJ/4.6 BNJ	3.2 BNJ/2.3 BNJ	2.4 BNJ/2.3 BNJ	NR	100
Potassium	5,630 EJ/5,000 EJ	254,000 EJ/270,000 EJ	269,000 EJ/282,000EJ	NR	NS
Selenium	ND J/ND J	9.4 BJ/ND J	ND J/ND J	NR	10
Silver	ND NJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	50
Sodium	15,600 J/15,700 J	**4,940,000 J/5,270,000 J**	**5,110,000 J/5,310,000 J**	NR	20,000
Thallium	ND NJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	0.5 GV
Vanadium	12.6 BNJ/ND NJ	ND NJ/ND NJ	ND NJ/ND NJ	NR	NS
Zinc	216 NJ/67.1 NJ	33.1 BNJ/ND NJ	24.2 BNJ/ND NJ	NR	2,000 GV
Cyanide	ND/NR	5.3 B/NR	ND/NR	NR	200.0

Note : Numbers in bold exceed groundwater standards or guidance values.
- All samples analyzed by Mitkem.

NR - Not analyzed.
ND - Not detected at analytical detection limit.
GV - Guidance value.
NS - No standard.
J - Estimated concentration; compound present below quantitation limit.
J - Estimated concentration due to matrix effect on recovery of target analytes.
n - presumptive evidence of a compound (used only for TICs).
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
N - Spike sample recovery is not within control limits.
E - Value estimated due to interference.
[a] - From NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitation, June 1998.
[b] - PCBs analyzed by low-level method (detection limit of 0.05 ug/L).
[c] - First value is for total metal, second value is for dissolved metal.
[d] - Iron and Manganese not to exceed 500 ug/L.



LEGEND

- Monitoring well location sampled
- ..... Demolished structure
- Monitoring well location destroyed/buried
- Monitoring well location unable to be sampled

ABBREVIATIONS

Sb	Antimony
As	Arsenic
Fe	Iron
Mg	Magnesium
Mn	Manganese
Na	Sodium
ND	Not Detected

Note: All concentrations in µg/L. First number is for total metals; second number is for dissolved metals.

0 80 160 ft

SCALE
1 in. = 80 ft

*Figure 5-13 from July 2003 Remediation Report Addendum

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Figure 5-45*

Monitoring Well August 2002 Groundwater Sampling Results

ECHO AVENUE SITE
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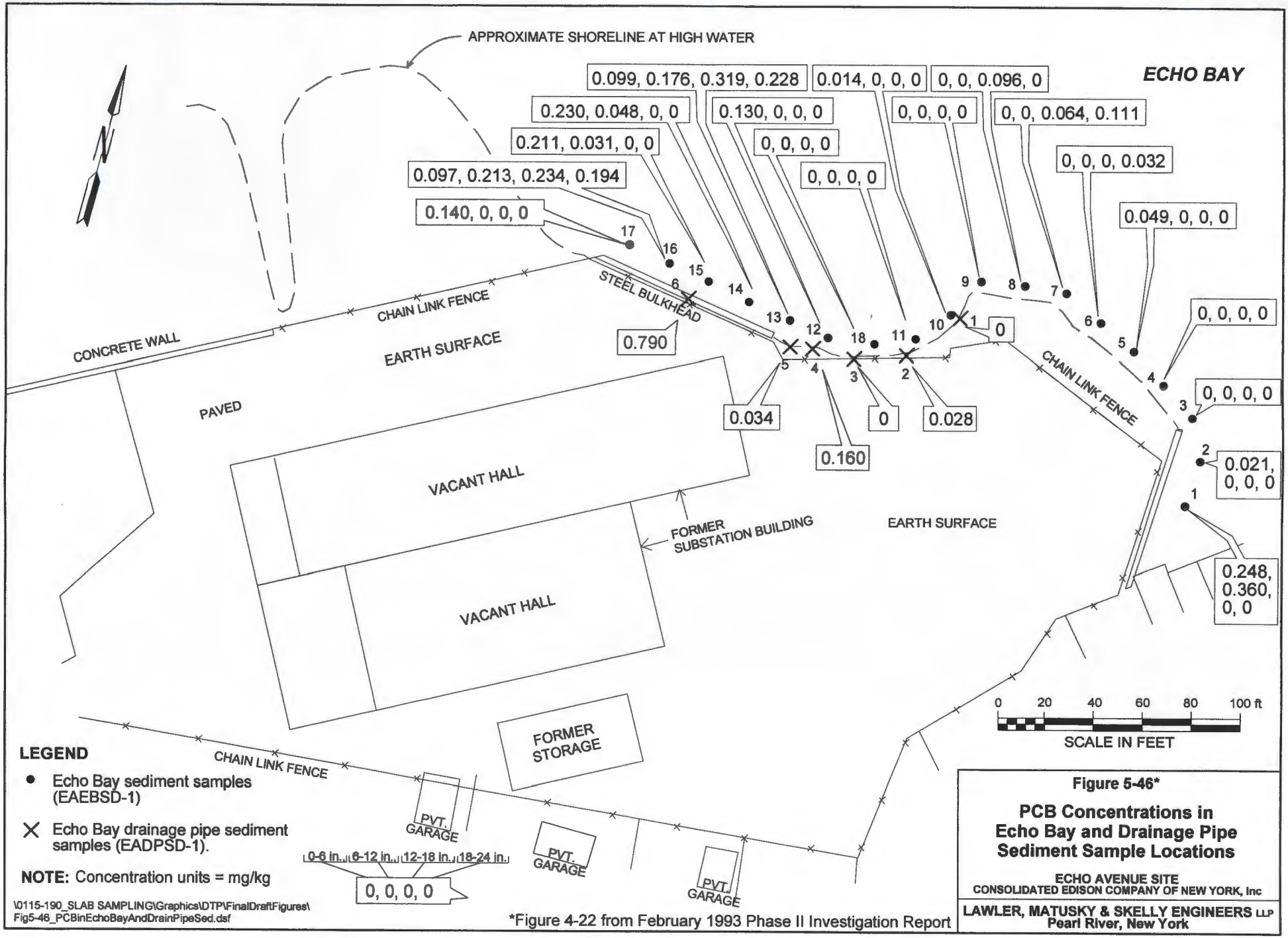
Pearl River, New York


APPROXIMATE SHORELINE AT HIGH WATER
ECHO BAY
0.099, 0.176, 0.319, 0.228
0.014, 0, 0, 0
0, 0, 0.096, 0
0.230, 0.048, 0, 0
0.130, 0, 0, 0
0, 0, 0, 0
0, 0, 0.064, 0.111
0.211, 0.031, 0, 0
0, 0, 0, 0
0, 0, 0, 0.032
0.097, 0.213, 0.234, 0.194
0, 0, 0, 0
0.049, 0, 0, 0
0.140, 0, 0, 0
17
16
15
14
13
12
18
11
10
9
8
7
6
5
4
3
2
1
STEEL BULKHEAD
CHAIN LINK FENCE
CONCRETE WALL
EARTH SURFACE
0.790
0
0, 0, 0, 0
0, 0, 0, 0
0.034
0
0.028
0.160
PAVED
VACANT HALL
VACANT HALL
FORMER SUBSTATION BUILDING
EARTH SURFACE
CHAIN LINK FENCE
0.021, 0, 0, 0
0.248, 0.360, 0, 0
FORMER STORAGE
CHAIN LINK FENCE
PVT. GARAGE
PVT. GARAGE
PVT. GARAGE
0-6 in.
6-12 in.
12-18 in.
18-24 in.
0, 0, 0, 0
0 20 40 60 80 100 ft
SCALE IN FEET
LEGEND
Echo Bay sediment samples (EAEBSD-1)
Echo Bay drainage pipe sediment samples (EADPSD-1).
NOTE: Concentration units = mg/kg
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\
Fig5-46_PCBinEchoBayAndDrainPipeSed.dsf
*Figure 4-22 from February 1993 Phase II Investigation Report
Figure 5-46*
PCB Concentrations in Echo Bay and Drainage Pipe Sediment Sample Locations
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc
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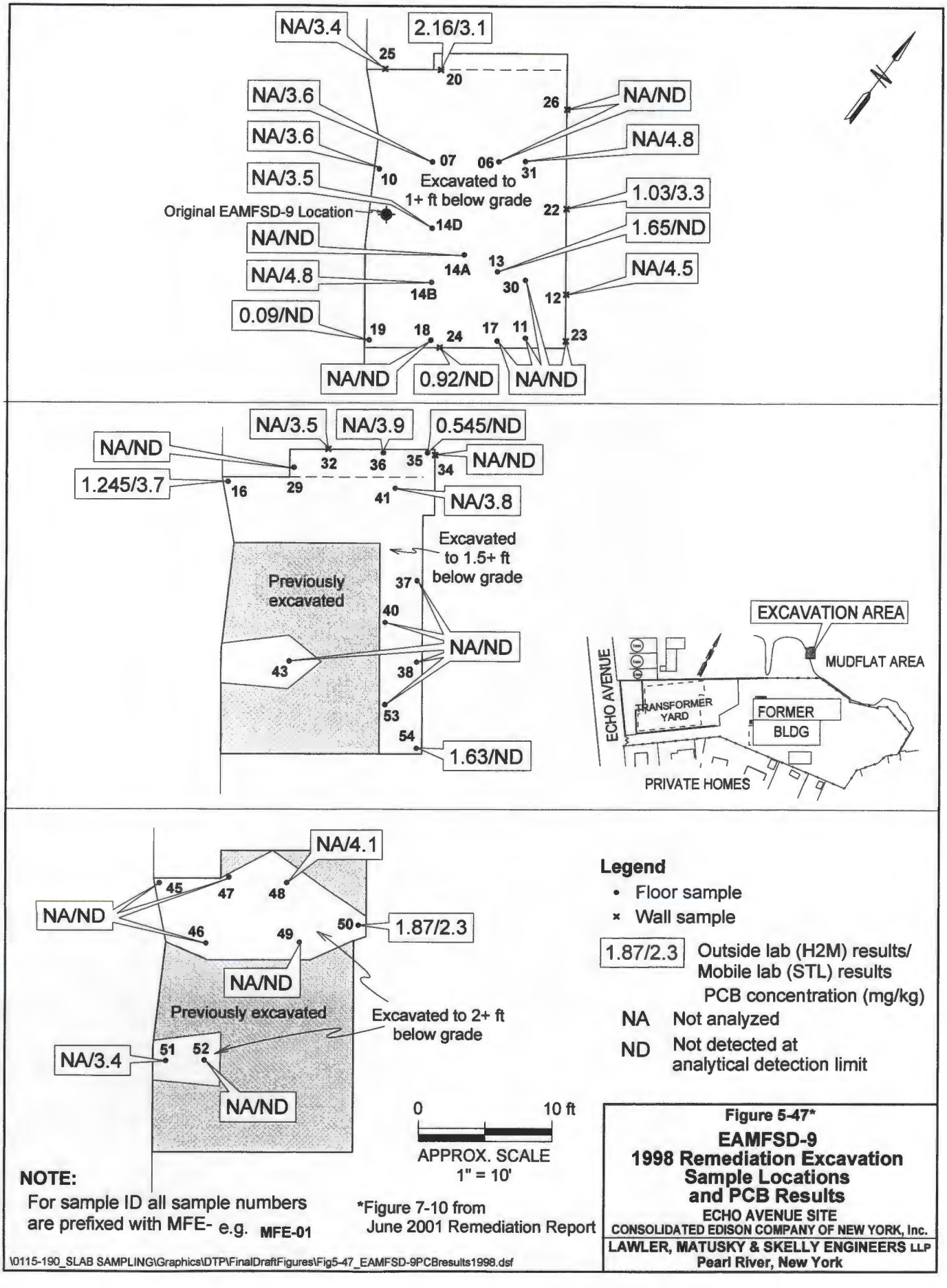
results were reported on in a document dated April 1996 entitled ***Report on Sampling Soil and Sediment in Mudflat Area Adjacent to Echo Avenue Site*** (the "April 1996 Mudflat Report") dated April 1996 (Ref. 9, Appendix A of this Report). One sample, EAMFSD-9 (see Figure 5-47 for location) had 232 mg/kg of PCBs. As a consequence, NYSDEC requested that all PCBs >5 mg/kg be removed from the mudflat sediment (Ref. 12, Appendix A of this Report).

In addition, NYSDEC requested that three of the core samples collected in 1992 (1, 13, and 16) be resampled and sediment cores be collected from the sediment just beneath the six drainpipes that discharge to Echo Bay. These results were reported on in the April 1996 Revised Report (Ref. 8, Appendix A of this Report). The data are shown on Figure 4-1 of this report and show three samples with PCBs greater than 1.0 mg/kg. Two of the resampled core samples, EAEBSD-13A and EAEBSD-16A, had 1.21 and 1.94 mg/kg, respectively in the 0-2 ft interval, and one sediment sample collected below the discharge point of drain pipe EADP-5 (EADPOSD-5), had 1.11 mg/kg in the 0-6 in. interval.

The remediation plan for the mudflat was described in the July 1996 Work Plan and included a pre-remediation delineation conducted in October 1996. The actual remediation was conducted by OHM in the spring of 1998 with the removal of approximately 30 yd^3 of contaminated sediment that had PCBs above 5 mg/kg. Figure 5-47, formerly Figure 7-10 from the June 2001 Remediation Report shows the remaining PCB levels in the mudflat area after the 1998 remediation was completed. Figure 5-47 also shows the location of the original high PCB sample location, EAMFSD-9. The removed sediment was placed in a rolloff, mixed with Portland cement, and transferred off-site for disposal. The excavated area was allowed to fill in naturally from tidal cycle activities.

In 2001 NYSDEC requested that Con Edison remove all sediment and soil in the mudflat area that exceeded 1 mg/kg of PCBs. This work was conducted by TRC in 2003 and 2004 as described in their RAR (Ref. 22, Appendix A of this document). The excavated soil and sediment was staged in a lined area where corn cob husk was mixed as an additive to absorb any liquids. TRC shipped a total of 1,100 tons of stabilized soil and sediment off-site. The final confirmatory PCB results are provided in Figure 5-48, formerly Figure 3-3 taken from the RAR prepared by TRC.

As described in the Section 4.6, NYSDEC requested that a sample (DECREQ) be collected and analyzed for TCL VOCs and SVOCs from the AOC-1 area (see Figure 6-3 in the following section for location). The samples were taken near sample location EAP-PE-24 (see Figure 5-48). The results are summarized in Table 5-5 from TRC's data. Because NYSDEC did not establish sediment cleanup objectives for substances other than PCBs, these results were compared to the RSCOs in TAGM 4046. This comparison indicates that five SVOCs exceeded


NA/3.4
2.16/3.1
25
20
NA/3.6
26
NA/ND
NA/3.6
NA/4.8
07
06
10
31
NA/3.5
Excavated to
1+ ft below grade
1.03/3.3
Original EAMFSD-9 Location
22
14D
NA/ND
1.65/ND
14A
13
NA/4.8
NA/4.5
14B
30
12
0.09/ND
19
18
24
17
11
23
NA/ND
0.92/ND
NA/ND
NA/3.5
NA/3.9
0.545/ND
NA/ND
32
36
35
34
NA/ND
1.245/3.7
16
29
41
NA/3.8
Excavated
to 1.5+ ft
below grade
Previously
excavated
37
40
NA/ND
43
38
53
54
1.63/ND
EXCAVATION AREA
MUDFLAT AREA
ECHO AVENUE
TRANSFORMER
YARD
FORMER
BLDG
PRIVATE HOMES
NA/4.1
45
47
48
NA/ND
46
49
50
1.87/2.3
NA/ND
Previously excavated
Excavated to 2+ ft
below grade
NA/3.4
51
52
NA/ND
0
10 ft
APPROX. SCALE
1" = 10'
Legend
• Floor sample
× Wall sample
1.87/2.3 Outside lab (H2M) results/
Mobile lab (STL) results
PCB concentration (mg/kg)
NA Not analyzed
ND Not detected at
analytical detection limit
NOTE:
For sample ID all sample numbers
are prefixed with MFE- e.g. MFE-01
*Figure 7-10 from
June 2001 Remediation Report
Figure 5-47*
EAMFSD-9
1998 Remediation Excavation
Sample Locations
and PCB Results
ECHO AVENUE SITE
CONSOLIDATED EDISON COMPANY OF NEW YORK, Inc.
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Pearl River, New York
\0115-190_SLAB SAMPLING\Graphics\DTP\FinalDraftFigures\Fig5-47_EAMFSD-9PCBresults1998.dsf

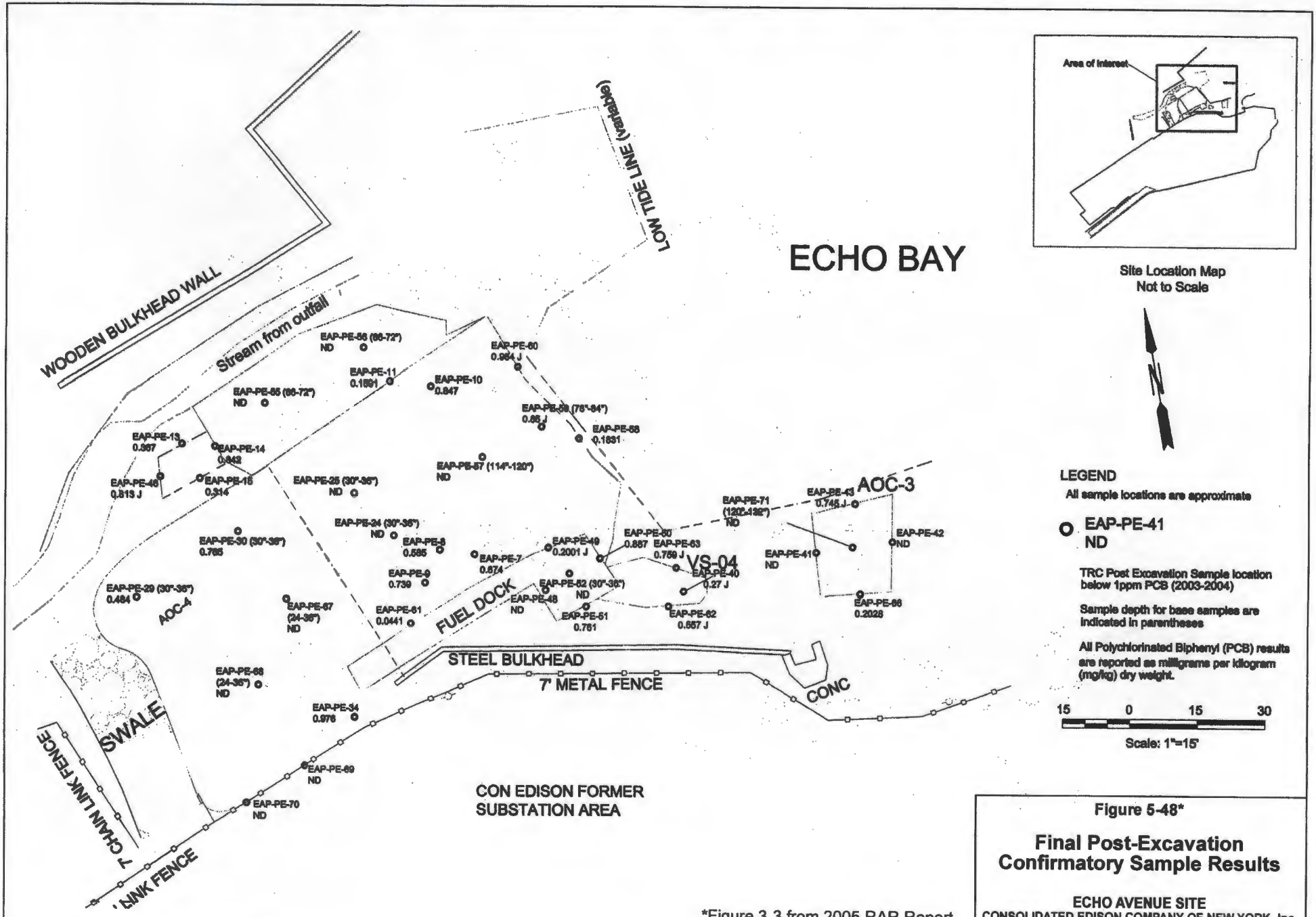

*Figure 3-3 from 2005 RAR Report

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Figure 5-48*

Final Post-Excavation Confirmatory Sample Results

ECHO AVENUE SITE
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TABLE 5-5
DEC REQ
SEDIMENT DATA SUMMARY

PARAMETER	DEC REQ	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)
VOLATILE ORGANICS (mg/kg)		
Acetone	0.0767	0.2
Ethyl benzene	0.0042	5.5
Xylene (total)	0.013	1.2
SEMIVOLATILE ORGANICS (mg/kg)		
Acenaphthene	0.916 j	50.0 ***
Anthracene	1.79 j	50.0 ***
Fluoranthene	14.0	50.0 ***
Fluorene	1.06 j	50.0 ***
Pyrene	14.5	50.0 ***
Benzo(a)anthracene	**5.6**	0.224 or MDL
Chrysene	**7.08**	0.4
bis(2-Ethylhexyl)phthalate	12.7	50.0 ***
Benzo(b)fluoranthene	**7.83**	1.1
Benzo(k)fluoranthene	**4.71**	1.1
Benzo(a)pyrene	**5.7**	0.061 or MDL
Indeno(1,2,3-c,d)pyrene	3.13	3.2
Benzo(g,h,i)perylene	3.7	50.0 ***
Phenanthrene	6.97	50.0 ***

Note : Numbers in bold exceed objectives.
: Results from Accutest Laboratories
*** - As per TAGM #4046, Total VOCs < 10 ppm.,
total SVOCs < 500 ppm. And individual SVOCs < 50 ppm.
(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
j - Indicates an estimated value.

their RSCOs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene. All other TCL VOCs and SVOCs not shown on Table 5-5 were not detected. All sediments exhibiting visual staining or a fuel oil type odor were excavated during the remediation activities.

After the remediation was completed, the excavated area was backfilled with a mixture of clean, certified top soil and sand.

As mentioned previously in Section 4.7, the remediation activities conducted in the mudflat area by TRC in 2003 and 2004 did not address three sample locations (see Figure 4-1 of this report for locations) along the shoreline that contained PCB concentrations between 1 and 2 mg/kg based on results from sediment samples collected in 1995 by HDR|LMS. These sample locations were resampled in January 2007 to determine the current concentrations of PCBs at these locations. The results (see Table 4-7 of this report) of the resampling activity indicate these locations meet the PCB criteria of <1 mg/kg. Therefore, the mudflat area requires no additional remediation activities.

6.0 SUMMARY AND CONCLUSIONS

Figure 6-1, formerly Figure 1-3 from the July 2003 Remediation Report Addendum, summarizes the overall remediation conducted at the Echo Avenue Site and adjacent properties from 1997 to 2003. Plate 1, located in the folder in the back of this report, has been specifically developed for this summary report to show the remediation areas on the property, the approximate depth of the excavation areas, and the concentration of PCBs ($\leq$1 mg/kg or $\leq$10 mg/kg) remaining on the site at each location and depth prior to any backfilling. All excavations were backfilled with clean certified fill material and either covered with wood chips or top soil and seed. As can be seen from information presented in Section 5 and Plate 1, the remaining PCB concentrations meet the soil cleanup objectives established by the NYSDEC for this Site.

Figure 6-2 shows the lead concentrations remaining on the Site at locations where soil samples were collected for total lead analysis and show that the cleanup objective of 500 mg/kg is not exceeded on the Site.

Figure 6-3 shows the location of samples analyzed for contaminants other than lead and PCBs and indicates which locations had exceedances of RSCOs in TAGM 4046, which RSCOs were exceeded, and the concentrations of substances that exceeded their RSCOs. Locations with TAGM 4046 RSCOs exceedances that were subsequently remediated are footnoted in Figure 6-3. In all cases where such other contaminants were detected above their RSCOs, NYSDEC did not require remediation, or NYSDEC approved backfill of that the area after the remediation for

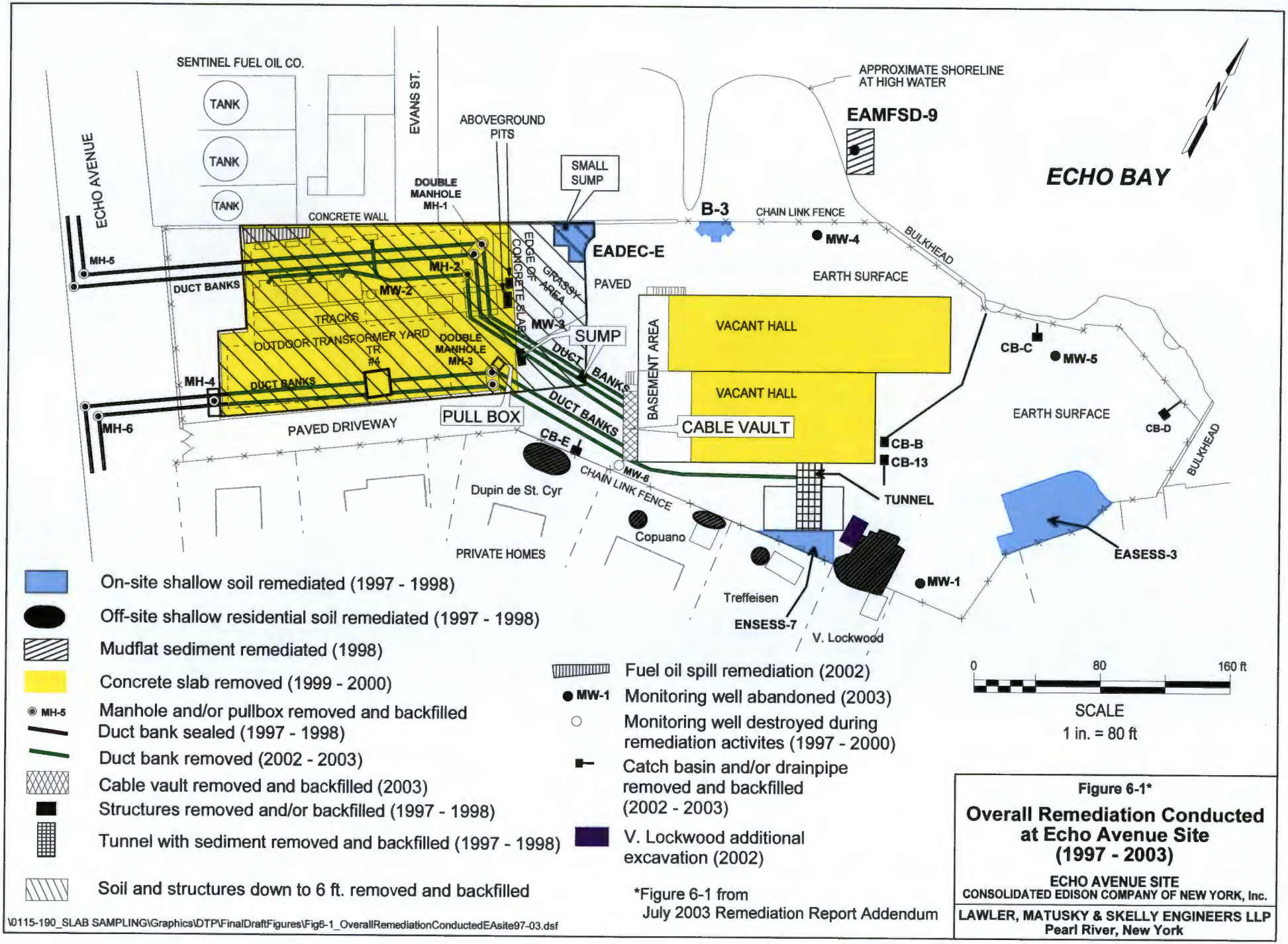

*Figure 6-1 from July 2003 Remediation Report Addendum

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Figure 6-1*

Overall Remediation Conducted at Echo Avenue Site (1997 - 2003)

ECHO AVENUE SITE
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