Empire Electric Company Site (224015)
Brooklyn, New York
Construction Completion Report

NYSDEC Site Number: 224015
NYSDEC State Superfund Standby Contract
(Work Assignment No. D007630)

VOLUME I

Text, Figures, and Tables

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NYSDEC Site Number: 224015
NYSDEC State Superfund Standby Contract
(Work Assignment No. D007630)

Prepared for

New York State Department of Environmental Conservation
Division of Environmental Remediation

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EA Project No. 14907.06

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CERTIFICATIONS

I, **Donald Conan**, certify that I am currently a New York State registered Professional Engineer, (P.E.), I had primary direct responsibility for implementation of the subject construction program, and I certify that the Plans and Specifications were implemented and that all construction activities were completed in substantial conformance with the September 2012 Interim Remedial Measure Decision Document, and DER-approved Plans and Specifications (D007630).

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, **Donald Conan**, P.E., of EA Engineering, P.C., am certifying as Owner's Designated Site Representative for the site.

75666	2/18/19	
NYS Professional Engineer #	Date	Signature

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LIST OF ACRONYMS AND ABBREVIATIONS

cm^2	Square centimeter
mg/kg	Milligram(s) per kilogram
µg	Microgram(s)
µg/L	Microgram(s) per liter
ACM	Asbestos containing materials
BC	Building code
BOD	Basis of Design
CSB	Clean Soil Bank
CAMP	Community Air Monitoring Plan
CFR	Codes of Federal Regulations
CY	Cubic yard
DEP	Department of Environmental Protection
DOB	Department of Buildings
DOL	Department of Labor
DOT	Department of Transportation
EA	EA Engineering, P.C., and its affiliate EA Science and Technology
ELAP	Environmental Laboratory Approval Program
EPA	U.S Environmental Protection Agency
FDNY	Fire Department of New York
GW	Groundwater
HASP	Health and Safety Plan
IRM	Interim remedial measure
MBE	Minority Business Enterprises
MW	Monitoring well
NYC	New York City
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYPD	New York Police Department
OSHA	Occupational Safety and Health Administration
PAL	PAL Environmental Services
PCB	Polychlorinated biphenyl

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

PDI	Pre-design investigation
PES	Preferred Environmental Services
ppb	Parts per billion
PPE	Personal protective equipment
ppm	Parts per million
PSA	Preliminary site assessment
QA	Quality assurance
QAPP	Quality Assurance Project Plan
QC	Quality control
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
RFI	Request for information
SAP	Sampling Analysis Plan
SF	Square foot
T&D	Transportation and disposal
TSCA	Toxic Substance Control Act
VAT	Vinyl asbestos tile
WBE	Women Business Enterprises

1. BACKGROUND AND SITE DESCRIPTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C., and its affiliate EA Science and Technology (EA) to complete an Interim Remedial Measure (IRM) at the Empire Electric Site (NYSDEC Site No. 224015). The IRM activities are summarized within this report. This Work Assignment is conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D007624-06).

The Empire Electric Site is a 100-foot (ft) x 240-ft parcel located at 5200 1st Avenue, Brooklyn, Kings County, New York, and is identified as Section 1, Block 803, Lot 9. The parcel contained dilapidated, vacant red brick building covering the entire lot. The site is bounded by 52nd Street and a New York City (NYC) Department of Sanitation vehicle maintenance and storage building to the northeast, commercial/industrial buildings to the southwest, 1st Avenue to the southeast, and a film studio and waterfront to the northwest (**Figure 1**). The boundaries of the site are fully described in **Appendix A**.

1.1 SITE HISTORY

The building was constructed in 1892 by the Brooklyn City Railroad Company for use as a power plant for the municipally-owned trolley system. The building was used for electrical generation until the 1930s when the trolley system was abandoned. The facility was conveyed to the City of New York in 1940. In 1951, the property was sold to Hastone Realty Corporation who demolished the smoke stack, placed the rubble in the cellar, and subdivided the parcel into two lots (Lot 9 and Lot 6). On 5 September 1951, Lot 9 was sold to Ben Hasnas. The Hasnas family operated Empire Electric on Lot 9, the eastern two-thirds of the building, from 1951 to December 1986 when the property was sold to 5200 Enterprises. Significant polychlorinated biphenyl (PCB) contamination of Lot 9 was identified at the time of the building sale in 1986, and a cleanup was conducted by ENSI, Inc. However, PCBs at elevated concentrations were still present in post cleanup samples as documented by the cleanup contractor (Lawler, Matusky, & Skelly Engineers LLP 1999).

The 24,000-square foot (SF) building was constructed of brick and concrete with partial steel framing. The building consisted of a basement, a main level, two first mezzanine floors, and a partial second mezzanine. The roof was dilapidated and mostly missing. There were 16 large brick piers located in the basement. The main building extended onto the adjacent property to the west (Lot 6). The Lot 6 structure is in serviceable condition and was used to house sets for film and television companies. The two lots are separated by a shared party wall and a firewall. The general building layout prior to the IRM is presented as **Figure 2**.

1.2 PREVIOUS INVESTIGATIONS

On 28 February 1989, the NYSDEC listed the site as a Class 2 site on the New York State Registry of Inactive Hazardous Waste Sites (The Registry). In 1993, NYSDEC collected and analyzed four shallow soil samples for PCBs from outside the building along 52nd Street. The data indicated the presence of PCBs at concentrations greater than the NYSDEC Surface Soil Cleanup Guidelines (i.e., greater than 1 part per million [ppm]). In 1999, Lawler, Matusky, & Skelly Engineers LLP

conducted a Preliminary Site Assessment (PSA) of the site on behalf of the NYSDEC to determine if contamination remained in the building and whether other media (i.e., soil and groundwater) had also been impacted from site activities. During this assessment, concrete chip samples from the building were observed to contain PCBs at concentrations up to 260,000 ppm, and soil samples collected from beneath the building contained PCBs at concentrations up to 960 ppm. Additionally, PCBs were detected in groundwater collected from a downgradient monitoring well at a concentration of71 micrograms per liter (µg/L) (Lawler, Matusky, & Skelly Engineers LLP 1999).

Historical investigations at the site have documented the presence of widespread PCB impacts throughout the structure. NYSDEC retained Environmental Resources Management (ERM) to complete a Remedial Investigation (RI) at the site in March 2004. ERM completed a Limited Draft RI in February 2007 that included soil borings in and around the structure, groundwater sampling, sub-slab vapor and indoor air sampling, a structural analysis and report, debris removal and disposal, and a PCB immunoassay building material survey with confirmatory sampling (ERM 2007). ERM's draft RI and Building Characterization Report concluded that groundwater at the site had not been fully characterized and that there was poor correlation between the immunoassay survey and the laboratory analytical results.

NYSDEC concluded that building demolition is required to complete the RI at the site. Demolition and offsite disposal of the building structure and foundation components (excluding the perimeter granite block foundation walls) would be completed as an IRM.

From December 2008 through April 2009, EA completed a pre-design investigation (PDI) prior to implementation of the IRM. The objective of the PDI was to provide necessary data to sufficiently characterize building materials for disposal and complete a basis of design (BOD) for the IRM. Per the Toxic Substances Control Act (TSCA) Regulation 40 Codes of Federal Regulations (CFR) 761.60, building materials having PCB concentrations greater than 50 ppm must be disposed of in a TSCA incinerator, TSCA chemical waste landfill, or by an U.S. Environmental Protection Agency (EPA)-approved alternative method. The investigation included laboratory analysis of building material samples, data correlation of EA and ERM data, and building measurements. The NYSDEC issued the IRM Decision Document in September 2012 outlining the basis and description of the IRM to allow the RI to be completed at the site (NYSDEC 2012).

The results of the PDI were presented in the BOD report, which formed the basis of the contract documents (EA 2014).

1.2.1 Pre-Design Building Materials Characterization

EA conducted a pre-IRM design investigation in December 2008 and April 2009. Building material samples were collected from concrete material from structure floors from all building levels, brick material from the interior and exterior walls, and brick material from large structural support pier in the cellar for PCB analysis. Results indicated that PCB concentrations in the upper levels ranged from 3.10 to 3,300 ppm, and PCB concentrations in the cellar slab ranged from 2.0 to 7,900 ppm. Additionally, two representative samples of a grease/oil material that covered

approximately 70 percent of the pier surfaces in the cellar were taken, with results showing this material contained PCB concentrations within the 11,000–26,000 ppm range. Results of this investigation are detailed in the Basis of Design Report (EA 2014).

1.3 INTERIM REMEDIAL MEASURE

The IRM was completed from October 2014 to March 2018, which included the demolition of the site building, limited soil removal, documentation of soil sampling, and backfilling the site to surrounding grades using clean imported backfill material. Details of the IRM are discussed in Sections 2 and 3 of this report.

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2. SUMMARY OF INTERIM REMEDIAL MEASURE

2.1 DESCRIPTION OF INTERIM REMEDIAL MEASURE

The IRM was completed to remove obstructions to complete an RI as directed by NYSDEC in the 2012 Decision Document (NYSDEC 2012).

The following are the components of the IRM:

1. Demolition of site building, including:

   — Pre-demolition asbestos abatement; this scope involved removal of asbestos floor tiles, caulk/mastic, and removal of approximately 11,500 SF of asbestos containing materials (ACM) roofing materials. The work was performed using hand methods to manually scrape/remove ACM; water was used throughout the removal process to minimize fugitive dust emissions. Third-party oversight and air monitoring were performed by Creative Environment Solutions Corp. (CES), Asbestos License Number: 28668.

   — Pre-demolition waste characterization.

   — Removal/management of lead-based paint; this scope involved stripping lead-based paint from nineteen 61 inches wide by 18 inches deep large steel columns that were too large to be cut with a hydraulic shear and needed to be torch cut to meet transportation and disposal sizing requirements.

   — Demolition, removal, temporary replacement, and replacement of all necessary utilities, utility poles, and mounting struts

   — Segregation, handling, and offsite disposal of all waste, including PCB waste resulting from demolition.

2. All necessary site preparation including safety protection of personnel and the general public.

3. Protection and maintenance of clearance for active railway on 1st Avenue.

4. Protection of existing structures and utilities both onsite and offsite.

5. Structural support, preservation, and restoration above and below grade of the party wall, roof structure, and all associated structures including foundation shared by the adjoining structure.

6. Decontamination and surface preparation of interior and top portions of foundation walls and remaining party wall in accordance with Title 40 CFR Part 761.79 and Subpart S.

7. Targeted excavation of sub-slab soils and building debris below cellar floor slab, temporary dewatering, and excavation protection

8. Sampling of soils beneath excavation for site records.

   Backfilling of the site with clean soil from an offsite source, including final grading of the site, and all other appropriate restoration activities.

3. INTERIM REMEDIAL MEASURE ACTIVITIES

The contract to complete IRM activities was released for public bid by the NYSDEC in October 2013. Activities were to be conducted in accordance with the NYSDEC-approved Contract Documents (**Appendix B**). EA provided an Engineer's Estimate of $13,939,900 to the NYSDEC prior to the project being publicly bid (**Appendix B-1**). Bids were first received on 10 December 2013 and publicly opened. Bids were reviewed by the NYSDEC and EA, and the first low bid was calculated incorrectly. The bids were rejected, and the contract was re-released for public bid. On 16 January 2014, bids from five firms were publicly opened.

The following contractors submitted bids:

1. PAL Environmental Services ($11,411,280.51)
2. Posillico Environmental, Inc. ($12,348,050.00)
3. Tully Environmental, Inc. ($12,814,700.00)
4. Gramercy Group ($13,712,362.00)
5. National Environmental Safety Co., Inc. ($14,215,500.00).

PAL Environmental Services (PAL) of Long Island City, New York was notified that they were the apparent low bidder on 17 January 2014, and PAL was notified of the NYSDEC's Intent to Award on 27 January 2014 (**Appendix B-1**). Following receipt of required 5-day and 14-day submittals (**Appendix B-1**), as required by the Contract, PAL was awarded as the Prime Contractor for the IRM by NYSDEC through the New York State competitive bidding process. IRM activities were to be completed at the site by PAL under Contract No. D007630 with the NYSDEC using State Superfund monies. Modifications to the original contract were completed through Request for Information (RFI) documents (**Appendix B-2**), Field Orders (**Appendix B-3**), and Change Orders (**Appendix B-4**) for the Empire Electric site.

3.1 CONTRACTORS AND CONSULTANTS

PAL performed all construction management activities at the site, asbestos abatement, and general construction. EA provided Construction Management services and onsite oversight of the IRM. Applications for Payment are provided in **Appendix C**.

Additionally, as required by the Contract Documents, PAL made good-faith efforts to subcontract work out to New York State Certified Minority Business Enterprises (MBE) and Women Business Enterprises (WBE).

Subcontractors hired by PAL for this IRM included:

- SHJ Construction Inc. (MBE)—Performed portions of party wall repair work
- Russo Development (WBE)—Demolition and excavation

- LoSardo General Contractors—Finished party wall repair work and construction of the retaining wall
- Darryl Alverez and Associates—Demolition engineering services
- Preferred Environmental Services (PES) (WBE)—Completed characterization, post-decontamination, and endpoint sampling
- American Analytical Laboratories—Completed laboratory analysis of samples associated with IRM
- Dimension Land Surveying DPC—Completed surveying at the site
- Geocomp Engineering—Performed noise and vibration monitoring
- US Ecology—Performed TSCA transport and disposal
- Leo Y. Lee, P.E.—Served as certifying engineer for repairs to the party wall
- L.V. Company—Performed non-TSCA transport and disposal
- AMS Safety, LLC—Provided safety services during IRM activities
- Perimeter Security & Investigations, LLC—Provided site security services during IRM activities (October 2014 through October 2016)
- John Shields Detective Agency, LLC—Provided site security services during IRM activities (November 2016 through March 2018)
- Able Rigging Contractors, Inc.—Crane removal of main support roof trusses
- PJP Installers—Scaffold installation and maintenance
- Manor Paving—Asphalt paving for weight scale installation
- Integrated Engineering—Permitting and compliance
- EDM—Electrical installation and maintenance.

3.2 GOVERNING DOCUMENTS

The D007630 Contract Documents served as the governing documents for the IRM at the Empire Electric site. These documents include the main body of the contract, which is included as **Appendix B**, as well as addenda, Engineer's written clarifications in response to Contractor's RFIs, field orders signed by the engineer, change orders, and administrative agreements. The IRM Design was included as part of this Contract in the form of design plans and specifications. The RFI log and associated RFIs are provided in **Appendix B-2**. The Field Order log and associated Field Orders are provided in **Appendix B-3**. The Change Order log and associated Change Orders are included in **Appendix B-4**.

Site work plans were prepared by PAL prior to related site works, unless otherwise noted. These plans are included in **Appendix D** and briefly described in the following sections. All issued permits related to the IRM are included as **Appendix E**.

3.2.1 Demolition Work Plan

The Demolition Work Plan (**Appendix D-1**) was approved by the NYC Department of Buildings (DOB) on 5 October 2015. The Demolition Work Plan lists required permits, safety precautions, and details means, methods, and sequencing of building demolition with associated figures and drawings. The Transportation and Disposal (T&D) Plan (Section 3.1.9), which was approved by EA on 19 January 2016, included information regarding superstructure demolition and associated waste handling, which when applied to the NYC DOB approved Demolition Work Plan, achieves substantial compliance with the Work Plan requirements defined in the Contract Documents. Demolition work for the ground floor slab and below, from the fire wall to the east wall, was covered in Amendment 5 of the T&D Plan, approved by EA on 16 December 2016.

Demolition activities were required to meet the NYC Building Code (BC), specifically BC 3306.5 (4) and BC 3306.9.

3.2.2 Asbestos Abatement Plan

The Asbestos Abatement Plan (**Appendix D-2**) was approved by EA on 3 November 2014. This plan covered abatement of ACM within roofing materials, vinyl asbestos tile (VAT), an electrical panel, and a fire door. The plan detailed methods to be used for abatement, personal protective equipment (PPE) that would be worn by workers throughout work, and safety procedures. Equipment cut sheets and site diagrams were provided with the plan.

Abatement of ACM within roof materials was to be conducted in accordance with Sub Chapter G/NYC Department of Environmental Protection (DEP) Exterior Foam procedure. Abatement of ACM within the building interior was to be conducted in accordance with Sub Chapter G/Interior Foam (for floor tile abatement) and NYC DEP Tent Procedure (for the electrical panel). Asbestos abatement personnel were licensed and certified to perform the work by NYC DEP and NYC Department of Labor (DOL). Personal air monitoring was conducted in compliance with

Occupational Safety and Health Administration (OSHA) requirements. Third-party ACM abatement monitoring is discussed in Section 3.3.5 and ACM abatement/disposal details are provided in Section 3.4.1.

3.2.3 Water and Dewatering Plan

The Water and Dewatering Plan (**Appendix D-3**) was approved by EA on 16 April 2015. This plan focused on management of excavation water resulting from groundwater or stormwater entering open excavations, as well as waste water generated during decontamination activities.

3.2.4 Sampling and Analysis Plan

The Sampling and Analysis Plan (SAP) (**Appendix D-4**) was prepared by PAL and PES in October 2014 and approved by EA on 3 November 2014. Addendum No. 1 was prepared by PES and submitted on 2 April 2015. EA approved Addendum No. 1 on 3 April 2015. The initial approved plan included sample collection procedures for waste characterization, decontamination verification, post-excavation documentation, and equipment before both mobilization to and demobilization from the site. The Addendum covered characterization sampling of areas not originally included in the SAP. A summary of required sampling for the Empire Electric IRM is presented as **Table 1**.

PAL's Project and Compliance Managers were designated to manage and coordinate staff, and subcontractors responsible for sampling and analysis activities. A field crew, consisting of a Field Team Leader/Supervisor, Field Sampling Coordinator, and a team of Geologists and Environmental Scientists from PES conducted field sampling activities. Samples were analyzed by American Analytical Laboratories, LLC, which is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). Quality assurance (QA) is detailed in a separate Quality Assurance Project Plan (QAPP) prepared by PES.

3.2.5 Quality Assurance Project Plan

The QAPP (**Appendix D-5**) was prepared by PES and approved by EA on 3 November 2014. The QAPP describes the specific policies, objectives, organization, functional activities and QA/quality control (QC) activities designed to achieve the project data quality objectives during field sampling and analytical testing activities. A QA officer from PES was responsible for ensuring conformance with NYSDEC policies related to field sampling activities during project planning and the IRM. Confirmation sample results were required to be validated by an independent third-party validator, Environmental Data Services, Inc.

3.2.6 Noise Monitoring Plan

The Noise Monitoring Plan (**Appendix D-6**) was approved by EA on 16 January 2015. The plan was prepared by Geocomp Engineering, Inc. (New York, New York), who was subcontracted to PAL to perform noise monitoring for the duration of the project. The plan identified noise receptor

locations to be monitored, monitoring methods and equipment to be used, reporting, and control methods, which would be used in the event of an exceedance.

3.2.7 Decontamination Plan

The Decontamination Plan (**Appendix D-7**) was approved by EA on 16 April 2015. The plan detailed decontamination pad construction, procedures for decontamination of equipment and personnel prior to relocating onsite from TSCA areas to non-TSCA areas as well as offsite, the standard for post-decontamination samples (10 micrograms [µg]/100 square centimeters [cm^2], and maintenance/demobilization of decontamination facilities. Decontamination completed during this IRM was conducted consistent with requirements defined by 40 CFR 761.79 Subpart S.

3.2.8 Site Specific Health and Safety Plan

The Health and Safety Plan (HASP) (**Appendix D-8**) was prepared by PAL and approved by EA on 17 September 2014. The HASP details safety management personnel and responsibilities, hazards assessment, required training, PPE to be used on the site, and other safety controls that would be put in place during construction to minimize hazards. A Contractor Designated Safety Representative was identified by PAL's Director of Environmental Health and Safety and was responsible for day-to-day safety oversight.

All removal work performed under this IRM was in full compliance with governmental requirements, including site and worker safety requirements mandated by federal OSHA. The HASP was complied with for all removal and invasive work performed at the site.

3.2.9 Transportation and Disposal Plan

The T&D Plan (**Appendix D-9**) was approved with limitations by EA on 19 January 2016; the plan was initially approved only for superstructure waste but did not include a full description of the proposed work sequence or waste segregation for work below and including the ground floor slab. Two interim T&D Plans and six amendments were submitted and approved by EA for the following activities:

- **Interim T&D Plan (Approved 16 October 2015)—**Included T&D of TSCA waste already bagged in 1 cubic yard (CY) super-sacks and staged on the ground floor. This was approved to expedite removal of this material.

- **Revised Interim T&D Plan (Approved November 18, 2015)**—Included T&D of TSCA ACM waste, and TSCA ACM Resource Conservation and Recovery Act (RCRA) waste separately bagged in 1 CY super-sacks staged on the ground floor. This was approved to expedite removal of this material. Addendums to the T&D Plan were submitted throughout the IRM to provide for new waste identified during the IRM, new transporters, and new disposals facilities.

- The following **Addendums** were submitted to the Project Engineer for review and approval:

  — **Addendum No. 1 (Approved April 29, 2016)**—Included additional hazardous (TSCA/RCRA) waste transporters for waste generated during superstructure demolition.

  — **Addendum No. 2 (Approved 13 October 2016)**—Included ground floor slab demolition work, as well as T&D associated with ACM abatement in 5,000 SF area between the party wall and fire wall.

  — **Addendum No. 3 (Approved 13 October 2016)**—Included an additional non-hazardous waste transporter.

  — **Addendum No. 4 (Approved October 24, 2016)**—Included an additional non-hazardous waste transporter.

  — **Addendum No. 5 (Approved December 16, 2016)**—Included removal of ground floor slab, piers, raised slab, and ACM below the raised slab between the fire wall and 1st Avenue.

  — **Addendum No. 6 (Approved December 16, 2016)**—Included addition of new non-hazardous disposal facility.

The following waste streams were managed as part of the IRM:

- Non-TSCA PCB contaminated waste with friable and non-friable ACM
- Non-TSCA PCB contaminated waste
- Non-TSCA PCB contaminated waste with friable and non-friable ACM and RCRA lead
- Non-TSCA PCB contaminated waste with RCRA lead
- TSCA PCB contaminated waste with friable and non-friable ACM
- TSCA PCB contaminated waste with friable and non-friable ACM and RCRA lead
- TSCA PCB contaminated waste and RCRA lead
- TSCA PCB contaminated waste.

Waste was managed at the point of generation, wherever possible, to prevent cross-contamination of materials. Waste transporters that delivered waste to approved disposal facilities were licensed and held valid NYSDEC 6 New York Code Rules and Regulations 364 Waste Transporter Permits. Hazardous waste transporters complied with regulations issued by the U.S. Department of Transportation (DOT) and set forth in 40 CFR 263, 49 CFR Parts 107, Subpart G and 100-180. A combination of truck and rail transporters were used during the IRM. Waste disposal details are provided in Section 3.5.Community Air Monitoring Plan

The Community Air Monitoring Plan (CAMP) (**Appendix D-10**) was prepared by PES and was approved by EA on 15 December 2014. IRM activities including demolition, material handling, excavation, and decontamination were identified as potential dust-generating activities. Dust suppression measures included water spray during demolition/excavation activities, or covering material when not in use, were pre-emptively used to avoid impacting the surrounding community. Real-time monitoring for volatile organic compounds and particulates less than 10 microns in diameter (PM10) was performed in one upwind and three downwind locations daily.

3.2.10 Scarification Work Plan

The Scarification Work Plan (**Appendix D-11**) was prepared by PES and was approved by EA on 15 July 2015. Scarification was completed where PCB concentrations exceeded 1 milligram per kilogram (mg/kg) on building material surfaces. The Work Plan outlined procedures to mitigate dust generated during scarification. Mitigation measures included enclosing the work area, restricting access to the work area, monitoring air quality during scarification work, and a supplemental emergency and fire protection plan.

3.3 INTERIM REMEDIAL MEASURE ELEMENTS

3.3.1 Site Preparation

Numerous permits were required by several city and state agencies prior to the start of associated activities, including the NYC DEP, NYC DOB, Fire Department of New York (FDNY), NYC DOT, and NYS DOL. Permits included:

- NYC DOB:
  - Demolition Permit
  - Mechanical Means Permit
  - Sidewalk Shed Permit
  - Scaffolding Permit
  - Construction Fence Permit
  - Waiver to Leave Foundations in Place.
- NYC DOT:
  - Crossing of the Sidewalk Permit
  - Lane Closure Permit.

Permits are provided in **Appendix E**. All permits were renewed as required throughout the project. Not all recurring permits are included in this Construction Completion Report, but an example of the permit is included for thoroughness. In addition, on 26 September 2014, the NYSDEC received approval from the EPA for offsite disposal of PCB removal at the site (**Appendix E**).

A pre-construction meeting was held at the NYSDEC Central Office in Albany, New York, on 26 June 2014. The meeting was attended by representatives from NYSDEC, EA, and PAL. Various aspects of the Contract were discussed, including introductions and responsibilities, contract times and liquidated damages, progress schedule, coordination, contractor responsibilities, correspondence related to changes in the work, contractor's applications for payment, completion of the work, disputes and claims, Equal Employment Opportunity requirements, a discussion of the status of the project plans, and project shop drawings. Project meeting minutes from the pre-construction meeting and bi-weekly meetings held for the duration of the IRM are provided in **Appendix F**.

A pre-demolition inspection was performed on 12 August 2014 to document existing conditions; further inspection was performed on 14 August 2014 in the neighboring building owned by Premier Atlantic Properties, LLC, which shares the party wall.

PAL mobilized to the Empire Electric site in October 2014. A security fence was installed around two temporary office trailers and generators that were located inside the building. A NYSDEC-approved project sign was placed on the front of the building on 1st Avenue and later moved to the perimeter construction fence, which was installed in March 2015. The project sign remained in place during all phases of the IRM. Other signs, including Danger, Keep Out, and No Smoking signs were installed around the work zone. Equipment, including aerial man lifts, roll-offs, generators, a fork lift, an electric pallet jack, and a small mini excavator with a hammer was mobilized to and demobilized from the site throughout the project. Equipment was wipe sampled for PCBs upon mobilization, as required by the SAP (**Appendix D-4**).

General refuse and debris from the cellar and ground floor was segregated bagged and staged onsite prior to offsite disposal. Personnel, and waste bag decontamination showers and a decontamination wash station were installed on 27 October 2014.

In addition to physical site preparation activities, project preparation activities were required prior to the start of site work. Pre-demolition surveys were completed by Dimension Development Corp on 18–19 November 2014. Dimension Development Corp also placed prisms on the party wall to track deflection and settlement during demolition activities.

3.3.2 General Site Controls

A variety of controls were implemented during the IRM to maintain a safe environment and prevent cross-contamination. The controls employed are described in the following paragraphs.

3.3.2.1 Site Security

PAL was responsible for maintaining a secure site at all times at the Empire Electric Site. A perimeter security fence was installed at the site beginning in March 2015, and the gate was locked daily. Due to the location of the site in an urban area, security guards were required any time the contractor was not present. A security guard was onsite from 1500 to 0700 to cover non-working

hours and 24-hour security was provided on weekends and holidays starting on 27 October 2014. A Detex® security system was installed at the site on 27–28 July 2015 to ensure diligent patrolling by the security guards. The Detex® system involved installation of four checkpoint locations around the site. Guards were required to make contact with each checkpoint every 30 minutes. If a guard failed to contact a checkpoint within the required timeframe, notification was immediately sent to their manager. A security camera was installed at the corner of the site on 27 December 2016 by an adjacent property owner to provide 24-hour security monitoring.

Security issues during the IRM are summarized in Section 3.3.7.

3.3.2.2 Job Site Recordkeeping

Job site records maintained at the site included site entry and exit logs, safety meeting sign-in sheets, and equipment inspection logs. All monitoring records, including CAMP data, noise, and vibration monitoring data were maintained onsite. A set of Contract Drawings were maintained at the site and marked up with redlines to reflect actual conditions. The CAMP data was reviewed during weekly progress meetings.

3.3.2.3 Equipment Decontamination and Residual Waste Management

Equipment did not leave the site without being decontaminated. A decontamination washing area including decontamination showers and a shed was set-up onsite in October 2014. A decontamination pad was constructed on the main floor of the site building in April 2015, following completion of ACM abatement work. Additional decontamination facilities were constructed and relocated onsite throughout the IRM due to the nature of the site work. Decontamination facilities were sized for the specific needs at any given time, depending on the size of equipment requiring cleaning. Pre-mobilization and demobilization wipe samples were collected and analyzed for PCBs through June 2017, when demolition was complete. The first floor of the structure was covered with a sacrificial layer of geotextile and asphalt-based sealer to prevent contamination of equipment and materials placed or stored on the floor.

3.3.3 Nuisance Controls

3.3.3.1 Noise and Vibration Controls

The neighboring studio was designated as a sensitive receptor according to NYC's noise ordinance and work had to be performed in accordance with the city's regulations. Geocomp was retained by PAL to perform continuous noise and vibration monitoring. Background noise level data was obtained prior to beginning work, which indicated background noise was 108 decibels; this exceeded the Work Plan threshold of 85 decibels that was based on NYC's Local Law 113. Noise and vibration monitoring data was maintained on site and was reviewed by the onsite Construction Inspector and Project Engineers.

EA coordinated with the neighboring studio and was notified when noise-sensitive film shoots were taking place. PAL adjusted work activities to accommodate the studio's needs.

3.3.3.2 Dust Controls

PAL performed dust control as needed. Fugitive dust was controlled using a combination of high-efficiency particulate air vacuuming and wet wiping, segregated designated-clean rooms, and water applied to surfaces. A modified wash-station for equipment was installed to prevent settling dust from accumulating on machinery. Sections of steel structural materials designated for torch cutting were stripped of paint in-place to minimize generating lead paint dust.

Areas impacted by fugitive dust from any activity were washed in accordance with the site work plans (**Appendix D**).

3.3.3.3 Asbestos Controls

Asbestos abatement was completed in accordance with the contractor's Asbestos Abatement Plan and NYC regulations (**Appendix D-2**). Dust control was implemented during asbestos abatement. Water was used to prevent dust from migrating offsite. Polyethylene sheeting was used to construct segregated work areas under negative air pressure. In addition, multi-phased decontamination was done during asbestos abatement to help eliminate dust on ACM bags.

3.3.3.4 Odor Controls

Site demolition activities did not result in notable odors emanating to the surrounding community and no active mitigation measures were employed during the IRM.

3.3.3.5 Truck Routing

Trucks were routed to and from the site in a way that would minimize the impacts to general traffic and were within the allowable weight limits for commercial vehicles for the roads and bridges. Trucks routes were included in the T&D Plan (**Appendix D-9**) and were provided to all drivers.

3.3.3.6 Equipment Decontamination

Equipment decontamination consisted of the removal of soils and dust from equipment prior to demobilization from the site. The decontamination pad and wash bay were used for decontamination of equipment and material. Decontamination procedures for PCBs was most commonly completed using diesel fuel saturated cleaning wipes. Equipment decontamination sampling analytical data is provided as **Appendix G.**

3.3.3.7 Responding to complaints

The site representative did not receive any complaints from members of the community for the duration of the IRM.

3.3.4 Community Air Monitoring Plan Results

Four particulate monitors were placed along the 52nd Street and 1st Avenue perimeters of the site during demolition activities. No alarms sounded throughout the project. CAMP and associated air monitoring records were maintained onsite.

3.3.5 Third-Party Asbestos Monitoring

CES was retained by EA to perform air monitoring during asbestos abatement activities in 27 October through 26 November 2014 and from 1 December 2016 through 15 June 2017. Air samples were analyzed by Amerisci Group Inc. New York, an NYSDOH ELAP accredited laboratory for analyses by Phase Contrast Microscopy via the National Institute of Occupational Safety and Health Method 7400. Samples were collected prior to, continuously during, and following, abatement activities. Sample results indicated that abatement achieved re-occupancy criteria. Third-party monitoring reports are provided in electronic format in **Appendix H**.

3.3.6 Reporting

Daily construction inspection was performed by EA personnel during IRM activities. The onsite inspector prepared daily observation reports that were uploaded to the Sharepoint site for access by the NYSDEC and EA Project Manager. Daily observation reports consisted of descriptions of daily site activities, photographs, site sketches, and project issues. All daily observation reports are included in electronic format in **Appendix I**. Additionally, project meetings were held bi-weekly during the IRM and all meeting minutes were included as **Appendix F**.

3.3.7 Project Issues

3.3.7.1 Site Security

Five security-related incidents occurred during the IRM and are as follows:

1. Two youths were identified playing on top of a tool trailer on 12 July 2015; police were notified, and a report was filed.

2. Three youths were identified jumping the fence on 1st Avenue on the weekend of 12–13 March 2016; security removed the trespassers, and called PAL and the New York Police Department (NYPD)

3. There was a break-in of the EA office trailer on 3 April 2016; the trespasser was chased by the guard. A report was filed with the NYPD. Two laptops, one digital camera, and a portable hard drive were stolen. Lights were added to the site, and valuables were no longer left at the site.

4. The security fence was hit by a Department of Sanitation truck on 23 April 2016. An incident report was filed with the NYPD.

5. On 4 August 2017, a section of the security fence blew over and hit a car. The fence was repaired, and the incident was reported.

Additional information is provided in Daily Observation Reports (**Appendix I**) and meeting minutes (**Appendix F**).

3.3.7.2 Floor Failure

On 17 October 2016, PAL was notified that a portion of the main floor was observed to be sagging. The following day, the floor had deflected approximately 5 ft. Onsite workers were notified of the danger, which was cordoned off using caution tape and barriers. PAL did not operate heavy equipment in this area and employed steel plates and mud mats as shoring for any equipment near the area.

3.3.7.3 Project Schedule

There were numerous delays to the project schedule, which extended the expected 400-day project to more than 1,200 days. Reasons for delays included PAL's failure to procure required and appropriate permits in a timely manner, PAL's failure to submit and secure DOB approval of required plan documents in a timely manner, a violation regarding scaffolding, PAL's poor scheduling of offsite transportation of waste materials, and PAL's failure to repair a floor failure, which delayed repair of the party wall. PAL was charged liquidated damages for schedule delays. A summary of schedule delays and the associated change order is presented below:

- **Change Order No. 1—**120-day time extension to address unexpected ACM in sub-basement rubble.

- **Change Order No. 2—**303-day time extension and assessment of $180,000 in liquidated damages due to schedule delays. The delay is primarily associated with permitting process; the Contractor had been unable to secure a demolition permit from NYC DOB to commence demolition on schedule. After failing to secure the demolition permit, PAL retained a new demolition engineer to oversee the permit process. This required new demolition drawings and re-started the permit process.

- **Change Order No. 4—**206-day time extension and assessment of $37,500 in liquidated damages due to multiple schedule delays associated with demolition and to resolve historic Environmental Control Board violations, and to prepare additional drawings and filing documents required to satisfy requirements of the NYC DOB/DEP Asbestos Technical Review Unit.

- **Change Order No. 5–**137-day time extension due to ACM associated with sub-basement rubble.

- **Change Order No. 6—**213-day time extension due to difficulties in attaining backfill material that met contract specifications, to address unexpected site conditions (unforeseen

granite foundation components), to perform additional sampling requested by EPA, and to perform additional scarification for areas of the remaining concrete slab where PCB concentrations exceeded 100 mg/kg.

- **Change Order No. 7—**60-day time extension due to excessive cold weather conditions which delayed concrete structural work and project completion.

3.4 BUILDING DEMOLITION

Demolition of the former Empire Electric Building began in October 2014 and the last of impacted material including IDW was transported offsite for disposal on 29 June 2017. During the IRM, 12,596.25 tons of impacted material was removed from the site.

3.4.1 Asbestos Abatement

Asbestos abatement was conducted at the Empire Electric site in three phases. Roof, window caulk, and floor tile abatement was completed from October to November 2014. Additional ACM was identified in cellar in October 2014. Abatement of ACM from below the raised cellar slab near the party wall was completed in December 2016 and January 2017. Abatement of additional ACM debris from below the raised cellar slab around the piers was completed in June 2017. Material from below the raised cellar slab was discovered during pre-demolition activities and required a change order (Change Order 4, **Appendix B-3**). The NYC DEP and NYSDOL were notified and NYC DEP asbestos work permits were obtained as required prior to each asbestos abatement activity (**Appendix D**). An asbestos variance application was filed and approved with NYC DEP allowing for excavation of ACM below the raised cellar slab. Air monitoring was conducted by CES during the 2014 abatement activities, and from 1 December 2016 through 15 June 2017, as discussed in Section 3.3.5.

3.4.2 Structure Demolition

The structural demolition was scheduled to occur following initial ACM abatement. The demolition permit application to the NYC DOB was filed in November 2014. An additional alteration permit application was filed in April 2015 to remove a structural component to complete repairs to the party wall. The first alteration permit was withdrawn and a second permit application to repair the party wall was filed in July 2015. PAL's structural engineer, (Leo E. Lee, P.E.) makes several unsuccessful attempts to secure a demolition permit in the fall of 2014 and spring of 2015. In July 2015, PAL selected Darrell Alvarez & Associates, PC and Integrated Companies to prepare demolition and asbestos abatement plans. January 22, 2016; New York City Department of Buildings (DOB) issues demolition permit for hand and mechanical demolition of the Empire Electric building.

Building demolition began in February 2016. Structural demolition as completed in phases in accordance with the approved Demolition Work Plan (**Appendix D-1**). Phase 1 Structure Demolition included glass removal, roof material removal, removal of mezzanines, and separation of the party wall above grade and the structure. Offsite transportation of waste, including ACM,

was completed simultaneously with ongoing demolition. Phase 2 Demolition included the removal of the roof structure, building walls, flooring, and subgrade material. Demolition of the structure to grade was completed in October 2016.

3.4.3 Subgrade Demolition and Excavation

Demolition was completed to the raised cellar slab, which was then removed. Rubble, ACM containing waste, and soil was removed from the subgrade to the building foundation, which consisted of concrete and granite blocks. The demolition and removal of the brick foundation piers below the ground floor slab and the raised cellar slab were completed from November 2016 through April 2017. Brick was removed from the piers and segregated based characterization sampling results for disposal. The outer layer of brick was disposed of as TSCA waste. The remaining granite blocks, which formed the foundation of the brick-faced piers was sampled for PCBs. Granite blocks, which were observed to be impacted were chipped or scarified to remove impacted material and resampled. Granite blocks, which were not impacted or had impacted material removed were left in place or staged for reuse as approved backfill.

In January 2017, PAL completed removal of piers, ACM abatement, soil excavation, and waste disposal from a 5,000 SF area adjacent to the party wall so that the remaining repairs to the party wall could be completed. In June 2017, PAL completed removal of piers, ACM abatement, and waste disposal from the remainder of the site footprint.

3.4.4 Party Wall Construction Alterations

Existing damage to the party wall was observed during the IRM. Damage and structural weaknesses included diagonal cracks, penetrations through the wall, and damaged foundational structures. LoSardo completed the following repairs to the party wall to ensure that the building was not further damaged by IRM activities:

- Installation of structural steel corner braces that connected the Party Wall to the remaining exterior wall (studio side)
- Diagonal cracks were injected with epoxy to strengthen the wall
- Penetrations through the party wall such as doorways, coal chutes, pipe chases, etc., were filled with rebar and concrete
- A cast-in-place retaining wall was completed in accordance with PAL's structural engineers' design to provide support against lateral pressure of backfill. Concrete buttresses, which were connected to the party wall above grade, were integrated to provide permanent bracing.
- Party wall repairs and alterations were completed in January 2018.

3.5 BUILDING MATERIALS DISPOSAL

Demolition activities were phased in accordance with the Demolition Work Plan and work areas were determined based on characterization results to mitigate comingling of waste. Building materials were characterized for disposal based on type (e.g., roof material, brick facing, window caulk, etc.) location, and analytical results. The building materials were dismantled and staged for disposal. During the IRM, a total of 13,223.83 tons of material were transported offsite and disposed. The total quantities of each waste type, the weight disposed, and the disposal facilities are summarized in **Table 2**.

Waste streams were segregated based on characterization results and transported to approved facilities based on allowable disposal quantities. Waste was generated primarily from building materials containing asbestos, brick and concrete impacted with PCBs, and materials such as lead-painted steel, unpainted steel, and wood debris. Additional material included soil and miscellaneous rubble. PAL and their subcontractor, PES, collected waste characterization samples from 2014 through 2017. Samples were collected in accordance with the approved SAP (**Appendix D-4**).

PES collected samples from soil, structural components, and building materials, which were submitted for laboratory analysis. Asbestos analysis for waste characterization was completed by Enviroscience Consultants, Inc. (Enviroscience) of Ronkonkoma, New York. Laboratory analysis for building materials including concrete, brick, paint, roofing material, and steel was completed by American Analytical Laboratories of Farmingdale, New York.

A summary of the samples collected to characterize the waste, and associated analytical results are summarized on the following figures provided in **Appendix J.** Figures depicting sample locations and exceedances were generated by PES and are provided as **Appendix J-1**. Analytical Data was submitted to the Project Engineer for review. Raw analytical data reports are provided electronically in **Appendix J-2.** DUSRs are provided electronically in **Appendix J-3.**

Change Order No. 3, issued 17 February 2016, added Bid Item 25 for the disposal of non-TSCA, RCRA, and Bid Item-26 for the disposal of TSCA, and RCRA debris. Change Order No. 4, Issued 8 September 2016, added Bid Item-28 for the disposal of TSCA, non-RCRA ACM debris, and Bid Item-29 for the disposal of non-TSCA, RCRA debris.

Waste disposal information is provided in **Appendix K**. Waste profiles were generated by PAL and reviewed by the Project Engineer and submitted to disposal facilities for acceptance. Waste profiles and approval letters from permitted disposal facilities are provided as **Appendix K-1**. Disposal facility permits are provided in **Appendix K-2**. A list of waste transportation companies and their permits are included as **Appendix K-3**.

Manifests and bills of lading are included in electronic format in **Appendix L.**

3.5.1 Additional Soil Removal

Following substantial completion of the IRM, independent confirmation sampling was completed by Environmental Assessments and Remediations (EAR) of Patchogue, New York. The complete Investigation Summary Report and analytical results are discussed in Section 3.8.1 and is provided as **Appendix M**. Initial samples collected in July 2017 identified soil beneath the cellar slab with PCB concentrations greater than 9,000 milligrams per kilogram.

As a result of the July 2017 sampling, EAR was tasked by the NYSDEC to complete additional excavation to remove PCB-impacted material from accessible areas (e.g., not beneath the granite smoke stack foundation, granite piers, public roadway, etc.). From October 2017 through December 2017, EAR excavated approximately 650 tons of soil impacted by PCBs. Soil was transported offsite for disposal as TSCA waste by waste haulers under PAL's contract. Waste manifests are included in **Appendix L**

3.5.2 Onsite Reuse

Uncontaminated granite foundation blocks remained in place or were relocated within the building footprint onsite for backfill.

3.6 REMEDIAL VERIFICATION SAMPLING

From September 2016 through June 2017, during the IRM and prior to placing backfill, PES as a subcontractor to PAL, collected samples from soil, structural components, and building materials which were submitted for laboratory analysis for IRM verification sampling. Samples were collected in accordance with the approved SAP and SAP Addendum (**Appendix D-4**). Laboratory analysis for PCBs by EPA Method 8082 was completed by American Analytical Laboratories of Farmingdale, New York.

The samples collected for verification, associated QA/QC samples, and analytical results are summarized on **Tables 3 through 7**:

- **Table 3**– PCBs in Remaining Granite Piers Verification Samples
- **Table 4**– PCBs in Remaining Granite Foundation Verification Samples
- **Table 5–**PCBs in Remaining Concrete Verification Samples
- **Table 6**–PCBs in Remaining Soil Verification Samples
- **Table 7–**PCBs in Remaining Party Wall Verification Sample Summary.

Sample locations and results are provided as **Figure 3**. Analytical Data was submitted to the project engineer for review (**Appendix N**). Raw analytical data reports are provided electronically in **Appendix N-1.** The DUSRs are included electronically in **Appendix N-2**.

3.7 IMPORTED BACKFILL

Approximately 8,331 CY of imported backfill was placed at the site following the demolition and excavation. The imported backfill material was sourced from Liberty Stone and Aggregates, LLC (Liberty) and the NYC Clean Soil Bank (CSB). All imported materials were inspected and approved by the onsite EA Construction Inspector prior to placement. Imported backfill information is provided in **Appendix O**. Additional backfill was imported to complete the supplemental PCB soil excavation completed from October to December 2017 by EAR. Liberty processes virgin rock sources in various gradations of use on construction projects. Liberty's certifications and initial laboratory analysis of backfill is provided as **Appendix O-1**. Additional samples were collected and analyzed for analytical methods prior to acceptance. Laboratory analytical results are provided as **Appendix O-1**.

The NYC CSB is a non-profit and no-cost soil exchange operated by the NYC Mayor's Office of Environmental Remediation that enables clean native soil excavated from deep below the ground surface during construction of new buildings in NYC to be directly transferred to nearby construction projects that need soil. All soil provided through the NYC CSB is sampled and chemically tested for a broad range of environmental contaminants prior to excavation and transport. EA's review provided analytical data compared to allowable constituent levels for imported fill. All incoming soil loads to the site were provided with a haul ticket from the NYC CSB certifying that the soil contained only clean native soil with no visual olfactory, or photoionization detector evidence of contamination. The haul tickets are provided as **Appendix O-2**.

On 18 September 2017, two loads of backfill soil impacted with petroleum were inadvertently delivered to the site from the NYC CSB. The material was delivered to the site, but not placed due to the observed impacts. The soil was segregated and covered with plastic sheeting until disposal could be coordinated. In October 2017, three samples were collected for waste characterization. The soil was characterized as TSCA regulated waste and shipped to the U.S. Ecology Facility Wayne Disposal, Inc. (MID048090633) located in Bellville, Michigan, for disposal. A memorandum was submitted to the NYSDEC in January 2018 which details the characterization and disposal and is included as **Appendix P**.

Approximately 8,879 CY of backfill was placed at the site following excavation and offsite disposal. Approximately 773 CY of crushed stone was imported from Liberty and the remaining 8,106 CY was sourced from the NYC CSB**.**

3.8 CONTAMINATION REMAINING AT THE SITE

The IRM for this site involved the demolition of the site building, offsite disposal of building debris including asbestos and PCB waste, excavation and offsite disposal of sub-slab soil exceeding the NYSDEC Part 375 Soil Cleanup Objective for Commercial Use of 1 part per million (ppm) of PCBs, and re-grading of the excavation with clean backfill. PCB contamination remains onsite.

3.8.1 Soil and Concrete Sampling

A post-IRM subsurface investigation was completed from July through October 2017 by a stand-by call-out contractor to the NYSDEC, Environmental Assessment and Remediations (EAR). This investigation included collection of concrete, soil, and groundwater samples to further characterize the remaining contamination. PCB concentrations in excess of 50 parts per billion (ppb) were found in soil at all depth intervals between 0 and 24 ft below the excavation surface (35 ft below the final site surface following backfill placement). The Investigation Summary Report provides details of the results from this sampling event and is included in **Appendix M** (EAR 2018) and relevant figures are reproduced as described below, which also includes data collected by PES during the IRM (Section 3.6).

Figure 3 shows concentrations of PCBs in samples collected from concrete slabs remaining in place. **Figure 4** shows concentrations of PCBs in samples collected from walls, additional locations on the concrete basement floor slab, granite foundation, and soil from beneath the basement floor slab. Some areas where concentrations of PCBs exceeded 50 ppb were further excavated or scarified, depending on material, and resampled. Subsequent results are shown below the prior results on both **Figures 3 and 4**; in these instances, remaining contamination is represented by the bottom result only.

Figures 5 and 6 show contamination remaining in soil near the former smoke stack foundation, at various depths, below the basement slab. A cross section is included as **Figure 7**.

3.8.2 Groundwater Sampling

Onsite and downgradient groundwater was not treated as part of the IRM. Although the primary source of contamination has been removed, groundwater contamination is expected to remain until all areas with soil contamination are remediated. The 7 temporary onsite groundwater monitoring wells and 10 offsite monitoring wells were sampled between July and October 2017, approximately 1 to 3 months after completion of the IRM. Groundwater samples were collected and analyzed for volatile organic compounds, semi-volatile organic compounds, metals, pesticides, PCBs, and perfluorinated compounds. Complete analytical results are provided in the EAR Investigation Summary Report (**Appendix M**).

PCBs were present in the onsite and downgradient groundwater with concentrations ranging from 5 µg/L (offsite) to 1,000 µg/L (onsite). PCB concentrations in groundwater in excess of the NYSDEC Technical and Operational Guidance Series 111 Class GA Standard of 5 µg/L were detected in 6 of the 7 onsite temporary monitoring wells: SB-13_GW (290 µg/L), SB-15_GW (1,000 µg/L), SB-18_GW (7.3 µg/L), SB-36 (8.8 µg/L), SB-37S (24 µg/L), SB-37D (16 µg/L). Concentrations of PCBs greater than the Class GA standard were detected in 2 of the 10 offsite groundwater monitoring wells, monitoring well (MW)-05R (6.9 µg/L) and monitoring well MW-10 (5 µg/L).

Figure 8 summarizes the PCB concentrations detected in the results of the October 2017 groundwater sampling event.

The EPA completed an onsite inspection on 17 August 2017 at the request of the NYSDEC. Meeting minutes are provided as **Appendix Q**. Following the inspection, the EPA requested updated groundwater data and a vertical profile of the extent of soil contamination in/around the trapezoid area where the PCB concentrations were determined to be greatest. The NYSDEC provided historical and current groundwater contaminant concentrations and cross sections in October 2017.

During the post-IRM summary investigation, as summarized in Sections 3.8.1 and 3.8.2, PCB concentrations of 5,500 ppm were documented in soils within the groundwater table, at a depth of 24 ft below the former basement slab, which is approximately 36 ft below the sidewalk elevation. It is clear from this data that a substantial volume of PCB impacted soil, at concentrations greater than cleanup objectives and immersed deep within the groundwater table, will remain after the removal action due to physical constraints at the site. Based on discussions with the EPA (**Appendix Q**), an RI/feasibility study will be completed and present a path forward to manage impacts from remaining PCB impacts.

3.8.3 Contract Closeout

The date for Substantial Completion was determined to be 15 February 2018 and the date for Final Completion was determined to be 30 March 2018. Completion letters are provided in **Appendix R.**

3.8.4 Engineering and Institutional Controls

The IRM was completed to facilitate a RI/feasibility study to address remaining subsurface impacts, including the deeper contamination recently identified within the groundwater table, and evaluate remedial options.

Since contaminated soil and groundwater remains beneath the site after completion of the IRM, Engineering and institutional controls will be required to protect human health and the environment. Engineering controls onsite include approximately 50 CY of flowable fill cement representing an approximately 14-inch layer over clean crushed stone at the base of the excavation, followed by 10 to 15 ft of backfill to the surface. The completed surface includes geotextile fabric and additional stone to provide a barrier to contact with subsurface soil. The site is enclosed with a locked chain-link fence. These engineering and institutional controls are further described in the Site Management Plan as approved by the NYSDEC.

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4. REFERENCES

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Figures

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0 125 250 500
Feet

N

Legend

Empire Site Boundary

Site Location

Figure 1
General Site Location
Empire Electric Company Site (224015)
Brooklyn, New York

Map Date: 5/29/2018
Projection:

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

EA

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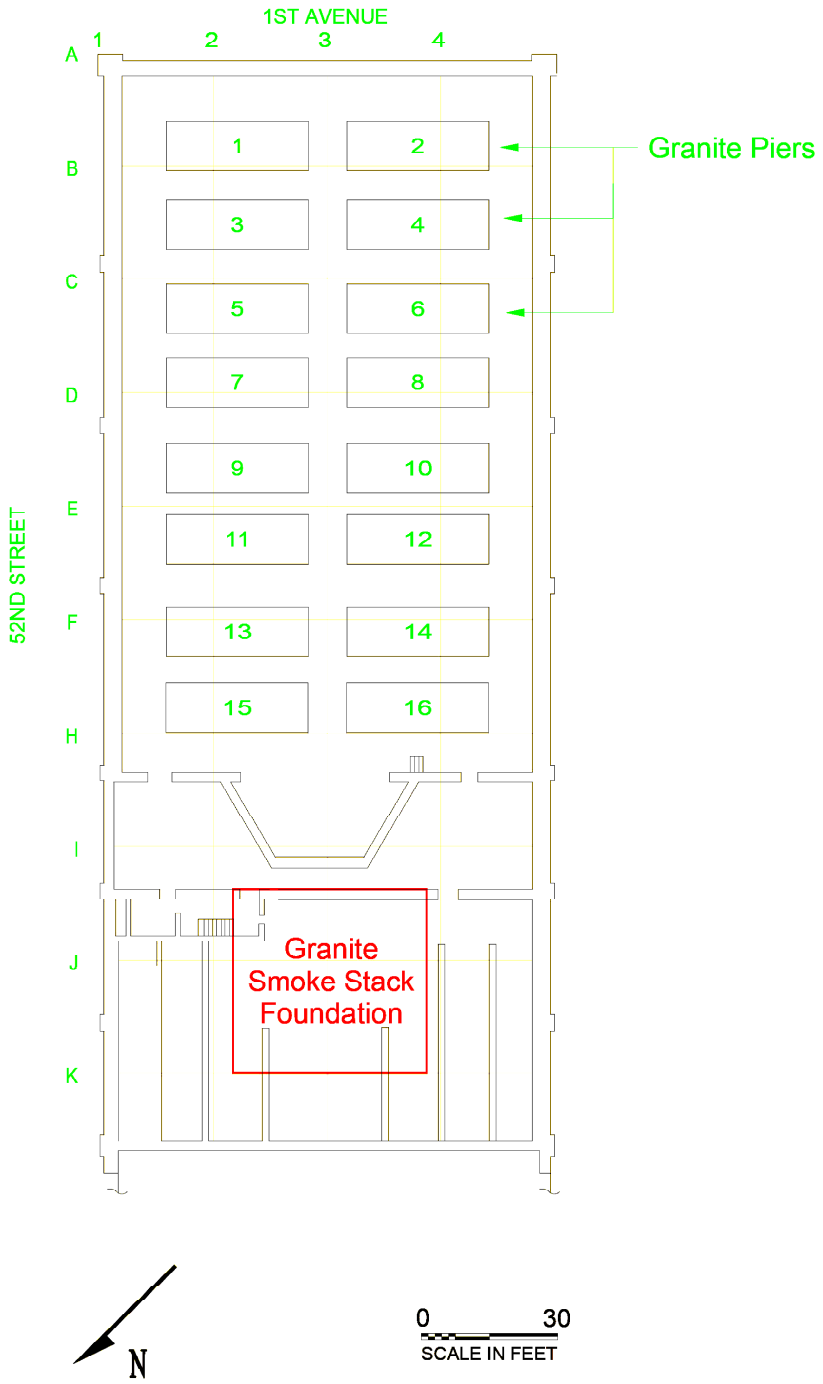

Legend

Empire Location

Figure 2
Historic Site Layout
Empire Electric Company Site (224015)
Brooklyn, New York

Map Date: 5/30/2018
Projection:

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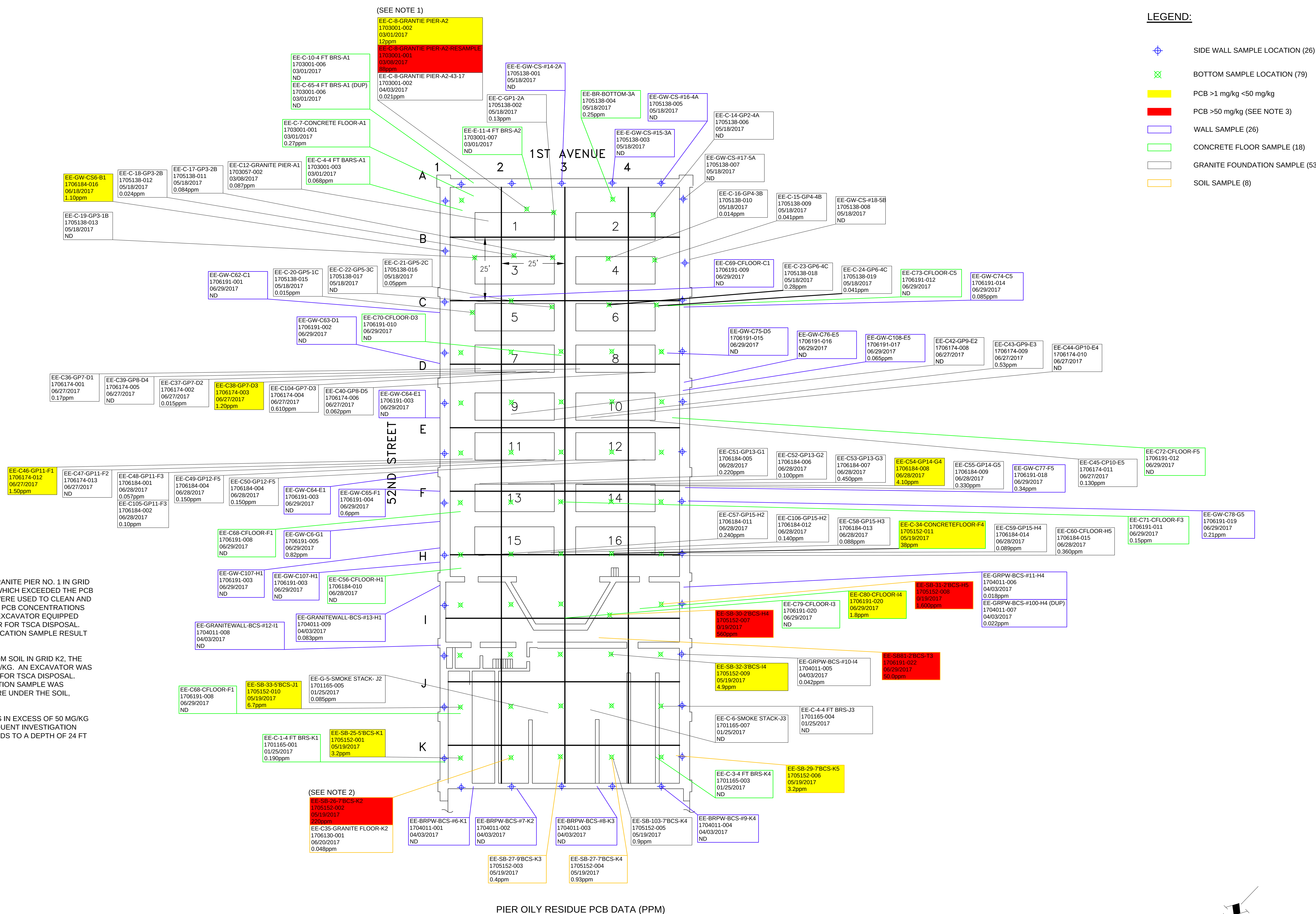

PIER OILY RESIDUE PCB DATA (PPM)

LEGEND:

- SIDE WALL SAMPLE LOCATION (26)
- BOTTOM SAMPLE LOCATION (79)
- PCB >1 mg/kg <50 mg/kg
- PCB >50 mg/kg (SEE NOTE 3)
- WALL SAMPLE (26)
- CONCRETE FLOOR SAMPLE (18)
- GRANITE FOUNDATION SAMPLE (53)
- SOIL SAMPLE (8)

NOTES:

1. THE INITIAL PCB SAMPLE COLLECTED FROM GRANITE PIER NO. 1 IN GRID A2 HAD A PCB CONCENTRATION OF 12 MG/KG WHICH EXCEEDED THE PCB CLEANUP GOAL OF 1 MG/KG SO HAND TOOLS WERE USED TO CLEAN AND ABRADE THE PIER. AFTER CLEANING THE PIER PCB CONCENTRATIONS INCREASED TO 88 MG/KG AT WHICH POINT AN EXCAVATOR EQUIPPED WITH A HYDRAULIC RAM DEMOLISHED THE PIER FOR TSCA DISPOSAL. FOLLOWING PIER DEMOLITION, THE PCB VERIFICATION SAMPLE RESULT WAS 0.021 MG/KG.

2. THE INITIAL PCB SAMPLE WAS COLLECTED FROM SOIL IN GRID K2, THE PCB CONCENTRATION IN THE SOIL WAS 220 MG/KG. AN EXCAVATOR WAS USED TO REMOVE THE SOIL IN THE GRID AREA FOR TSCA DISPOSAL. FOLLOWING SOIL REMOVAL THE PCB VERIFICATION SAMPLE WAS COLLECTED FROM GRANITE BLOCKS THAT WERE UNDER THE SOIL, SAMPLE RESULT 0.048 MG/KG.

3. IN GRID AREAS H1 TO I4 PCB CONCENTRATIONS IN EXCESS OF 50 MG/KG WERE IDENTIFIED IN SUB-SLAB SOILS. SUBSEQUENT INVESTIGATION CONFIRMED THAT PCB CONTAMINATION EXTENDS TO A DEPTH OF 24 FT BELOW THE CELLAR SLAB.

GRAPHIC SCALE IN FEET (20 10 0 20 40)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NO.	DATE	DESCRIPTION
0	10/13	FOR BIDS DUE
1	3/18	MINOR REVISIONS

REVISIONS

PCB VERIFICATION SAMPLE LOCATIONS

FORMER EMPIRE ELECTRIC SITE NO. 224015
CONTRACT # D007630
BROOKLYN, NEW YORK

PREPARED BY:
EA ENGINEERING, P.C.
AND ITS AFFILIATE
EA SCIENCE AND
TECHNOLOGY

CARRS#	
EA #	1490706
DESIGN #	
FILE	1490706 Contract.dwg
DRAWN BY	JRM/DPA
DATE	MARCH 2018
SCALE	AS SHOWN
SS	

SHEET #
FIGURE 3

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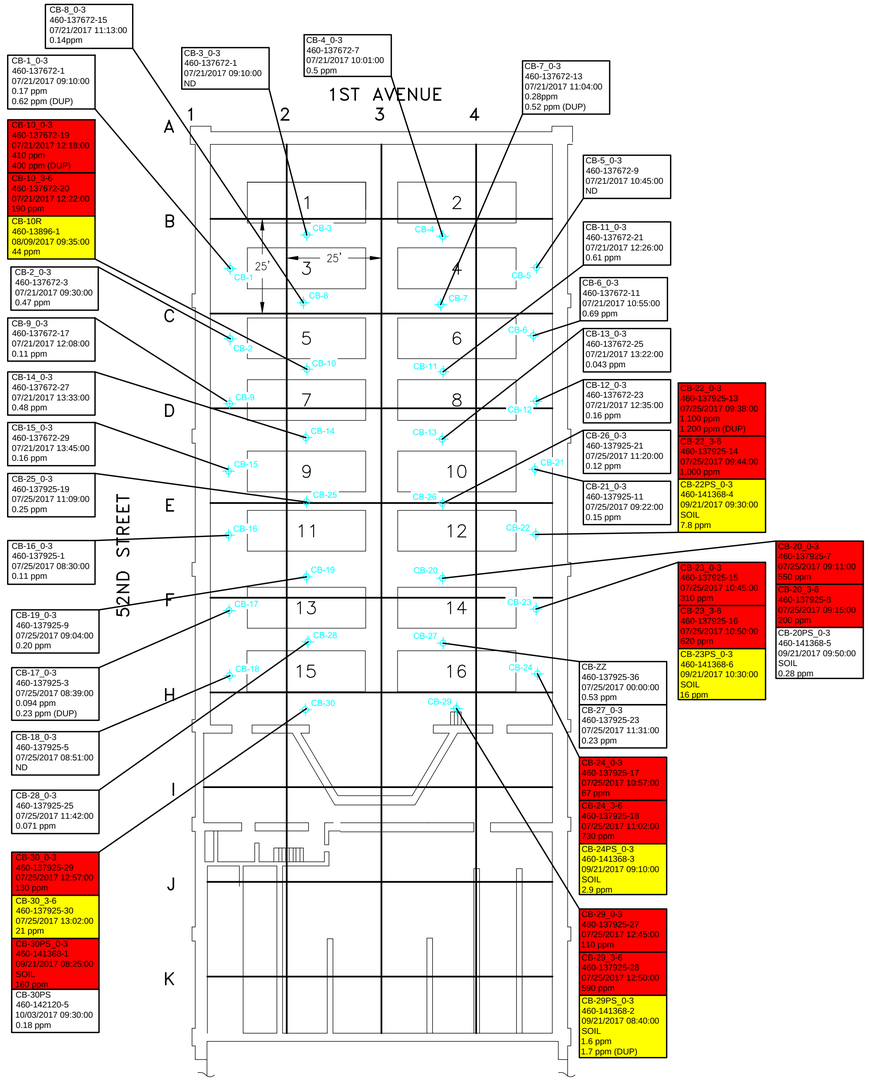

LEGEND:

- CONCRETE SAMPLE LOCATION (SEE NOTES 1-4)
- PCB <1 mg/kg
- PCB >1 mg/kg <50 mg/kg
- PCB >50 mg/kg

NOTES:

1. CONCRETE SAMPLES COLLECTED BY NYSDEC STANDBY CONTRACTOR ENVIRONMENTAL ASSESSMENT & REMEDIATION (EAR) USING A HAMMER DRILL.
2. ALL SAMPLES COLLECTED FROM 0 TO 3 INCHES BELOW CONCRETE SURFACE. SOME SAMPLES COLLECTED FROM 3 TO 6 INCHES BASED ON OBSERVED STAINING.
3. AREAS WITH PCB CONTAMINATION EXCEEDING 50 MG/KG WERE SCARIFIED BY PAL ENVIRONMENTAL SERVICES USING ELECTRIC JACK HAMMERS. SCARIFICATION REMOVED 3 TO 6 INCHES OF CONCRETE FROM THE ENTIRE CONCRETE SURFACE BETWEEN THE CONTAMINATED SAMPLE AND THE ADJACENT CLEAN SAMPLE.
4. FOLLOWING SCARIFICATION, A REPRESENTATIVE OF EAR COLLECTED POST SCARIFICATION (PS) OR RE-SAMPLES (R) FROM A LOCATION IN THE GENERAL VICINITY OF THE IMPACTED SAMPLE.

20 10 0 20 40
GRAPHIC SCALE IN FEET

Department of Environmental Conservation
NEW YORK STATE OF OPPORTUNITY

NO.	DATE	DESCRIPTION
0	10/13	FOR BIDS DUE
1	3/18	MINOR REVISIONS

REVISIONS

CONCRETE CELLAR SLAB PCB SAMPLE LOCATIONS

FORMER EMPIRE ELECTRIC SITE NO. 224015
CONTRACT # D007630
BROOKLYN, NEW YORK

PREPARED BY:
EA ENGINEERING, P.C.
AND ITS AFFILIATE
EA SCIENCE AND
TECHNOLOGY

CARRS#	
E.A #	1490706
DESIGN #	
FILE	1490706 Contract.dwg
DRAWN BY	JRM/DPA
DATE	MARCH 2018
SCALE	AS SHOWN
SS	

SHEET #
FIGURE 4

FILE PATH: \\BROOKS\WORK\EP\PROJECTS\1490706 - EMPIRE ELECTRIC\CAD\PCB REMEDIATION CONFIRMATION SAMPLING-AUG 2017.DWG [PEC CONCRETE LOCATIONS] ALLEN, DANIEL 3/28/2018 2:58 PM

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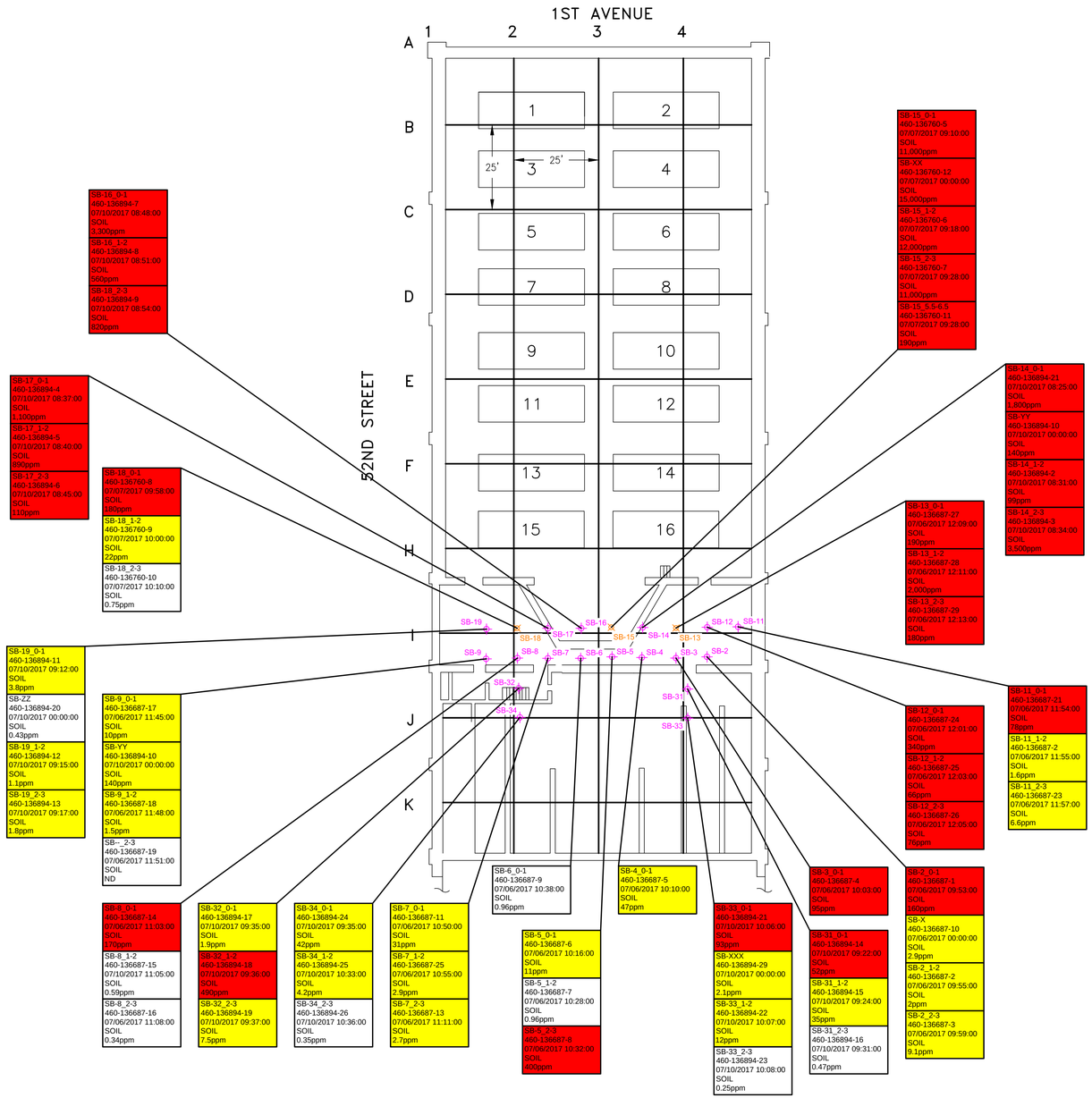
LEGEND:

- SAMPLE LOCATION COLLECTED WITH A HAND AUGER TO THE DEPTH SPECIFIED BY THE NYSDEC ONSITE REPRESENTATIVE. SAMPLES ARE TO BE COLLECTED ON A 1 FT INTERVAL ALONG THE FULL DEPTH OF THE BORING.
- GROUNDWATER AND SOIL SAMPLING LOCATION
- PCB <1 mg/kg
- PCB >1 mg/kg <50 mg/kg
- PCB >50 mg/kg



20 10 0 20 40

GRAPHIC SCALE IN FEET

Department of Environmental Conservation

NEW YORK STATE OF OPPORTUNITY

NO.	DATE	DESCRIPTION
0	10/13	FOR BIDS DUE

REVISIONS

PCB SOIL SAMPLE LOCATIONS

FORMER EMPIRE ELECTRIC SITE NO. 224015
CONTRACT # D007630
BROOKLYN, NEW YORK

PREPARED BY:
EA ENGINEERING, P.C.
AND ITS AFFILIATE
EA SCIENCE AND
TECHNOLOGY

CARRS#	
E.A #	1490706
DESIGN #	
FILE	1490706 Contract.dwg
DRAWN BY	JRM
DATE	OCTOBER 2013
SCALE	AS SHOWN
SS	

SHEET #

FIGURE 5

FILE PATH: \\BRWNCVA\BRWNCVPP\PROJECTS\1490706 - EMPIRE ELECTRIC\CAD\FOR REMEDIATION CONFIRMATION SAMPLING-AUG 2017.DWG [PCB SOIL LOCATIONS] ALLEN, DANIEL 1/29/2018 1:49 PM

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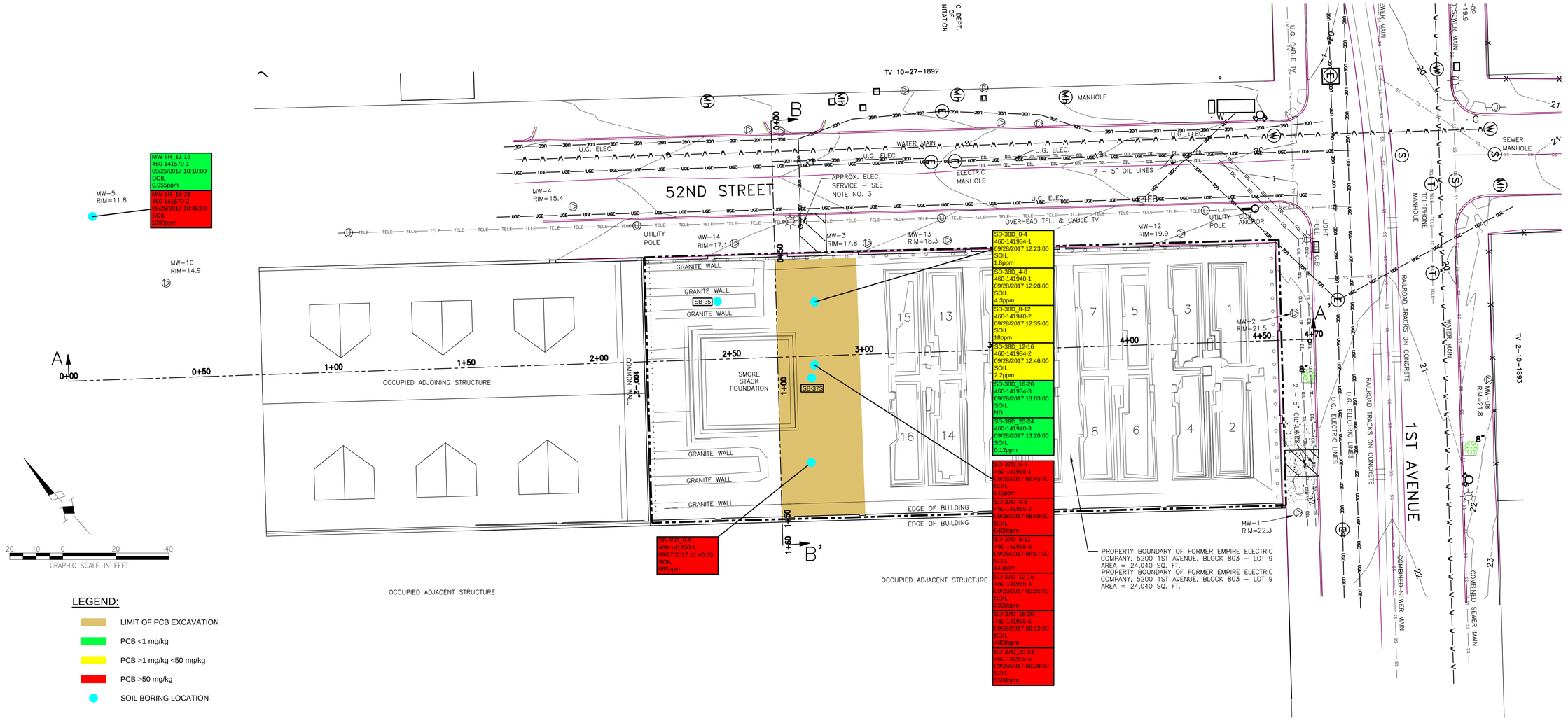

LEGEND:

- LIMIT OF PCB EXCAVATION
- PCB <1 mg/kg
- PCB >1 mg/kg <50 mg/kg
- PCB >50 mg/kg
- SOIL BORING LOCATION

DRAWING NAME: F:\State & Local\State\NDEC\Empire electric company\144726\Figures\From Syracuse\Revised figures\August 2017\1490706-MW location-OCT 2017.dwg
DATE: 10/03/2017 TIME: 1:54 DRAWN BY: rbeckman

Department of Environmental Conservation

NEW YORK STATE OF OPPORTUNITY

NO.	DATE	DESCRIPTION
		REVISIONS

REMAINING PCB CONTAMINATION OF SUB-SLAB SOILS

FORMER EMPIRE ELECTRIC SITE NO. 224015
CONTRACT # D007630
BROOKLYN, NEW YORK

PREPARED BY:
EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY

CARRS#	
EA #	1490706
DESIGN #	
FILE	1490706 Contract.dwg
DRAWN BY	JRM/DPA
DATE	MARCH 2018
SCALE	AS SHOWN
SS	

SHEET #

FIGURE 6

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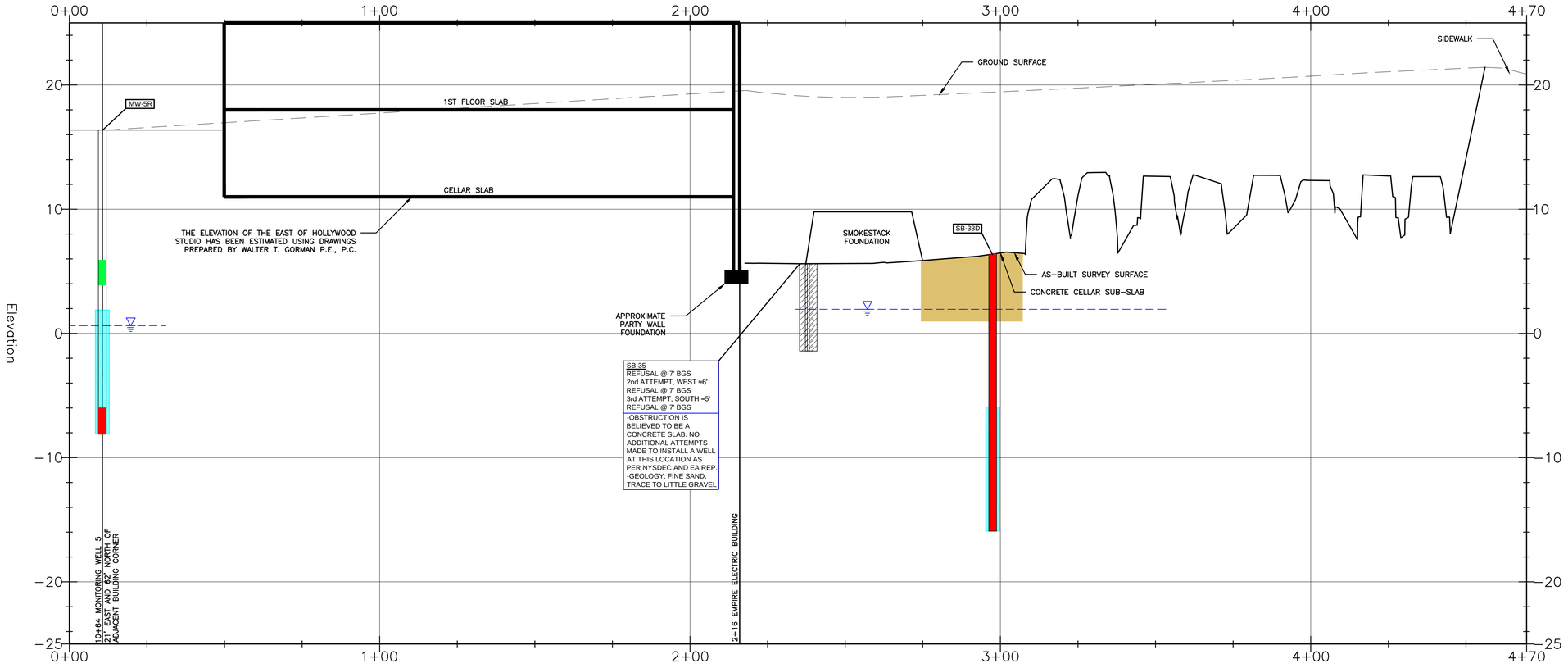


HORIZONT SCALE: 1" = 20'

40 20 0 40 80

GRAPHIC SCALE IN FEET

VERTICAL SCALE: 1" = 5'

8 4 0 8 16

GRAPHIC SCALE IN FEET

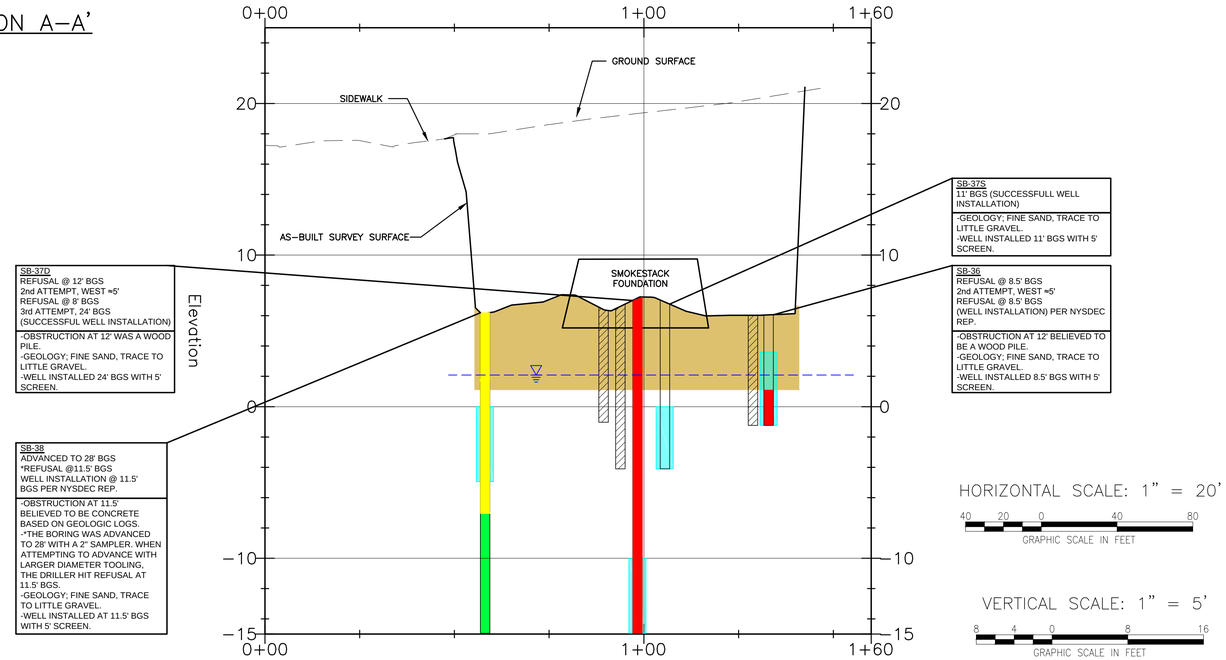
LEGEND:

- NOT SAMPLED
- PCB <1 mg/kg
- PCB >1 mg/kg <50 mg/kg
- PCB >50 mg/kg
- SOIL BORING ADVANCED TO REFUSAL
- WELL SCREEN
- LIMIT OF PCB EXCAVATION (SEE NOTE 1)
- APPROXIMATE GROUND WATER ELEVATION

NOTE:

1. BETWEEN NOVEMBER 14, 2017 AND DECEMBER 12, 2017 APPROXIMATELY 653 TONS OF PCB CONTAMINATED SOIL WAS EXCAVATED FROM 30FT X 100FT AREA UNDERNEATH EMPIRE ELECTRIC. THE EXCAVATION DEPTH WAS LIMITED TO 6FT BELOW THE CONCRETE CELLAR SUB-SLAB DUE TO GROUNDWATER INTRUSION AND LARGE GRANITE OR CONCRETE BLOCKS THAT WERE TOO LARGE TO HOIST WITH THE EXCAVATOR.

SECTION A–A'



SECTION B–B'

HORIZONTAL SCALE: 1" = 20'

40 20 0 40 80

GRAPHIC SCALE IN FEET

VERTICAL SCALE: 1" = 5'

8 4 0 8 16

GRAPHIC SCALE IN FEET

Department of Environmental Conservation

NEW YORK STATE OF OPPORTUNITY

NO.	DATE	DESCRIPTION
		REVISIONS

SECTIONS A–A' AND B–B'

FORMER EMPIRE ELECTRIC SITE NO. 224015
CONTRACT # D007630
BROOKYLN, NEW YORK

PREPARED BY:
EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY

CARRS#	
EA #	1490706
DESIGN #	
FILE	1490706 Contract.dwg
DRAWN BY	JRM/DPA
DATE	MARCH 2018
SCALE	AS SHOWN
SS	

SHEET #

FIGURE 7

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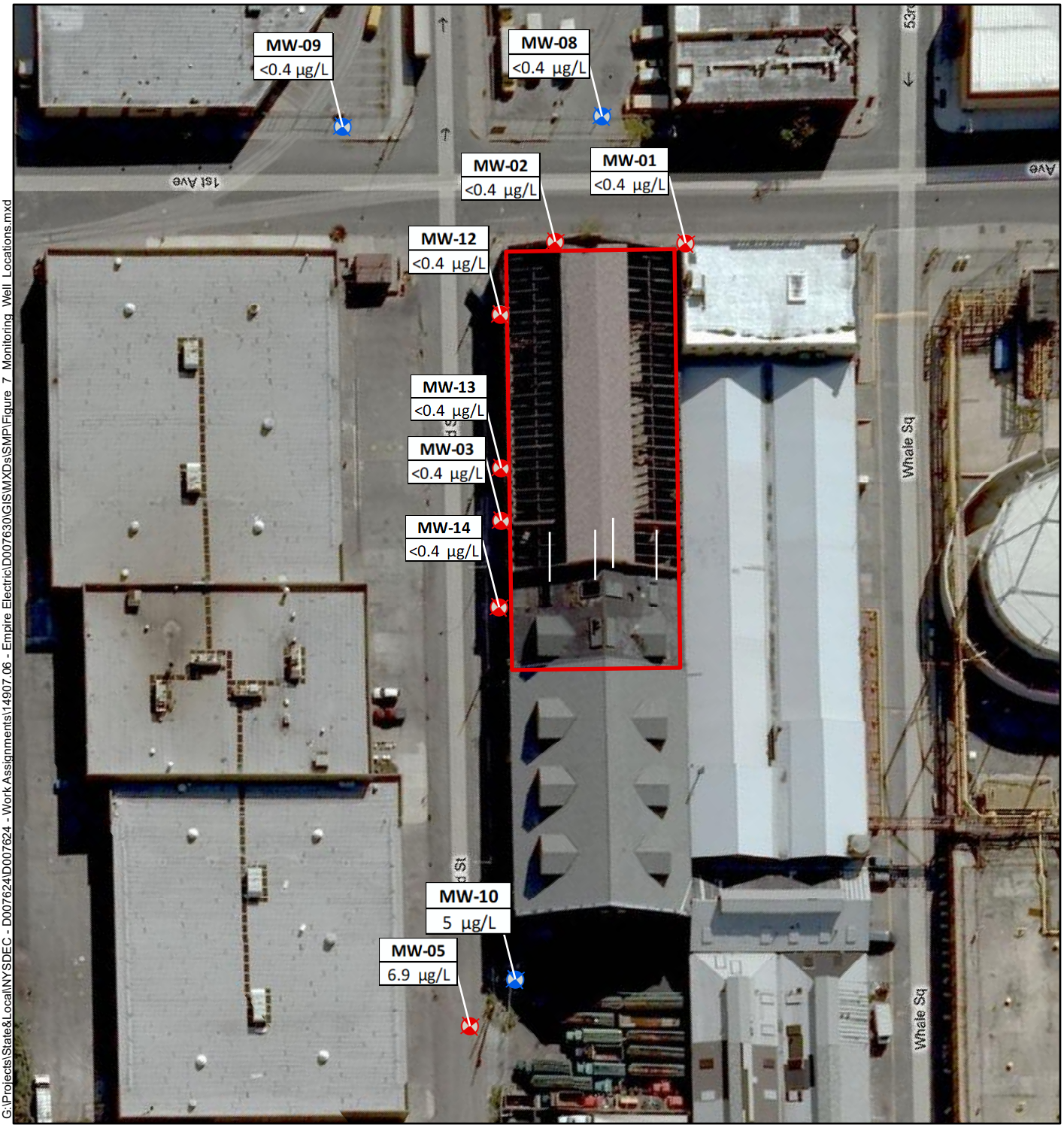
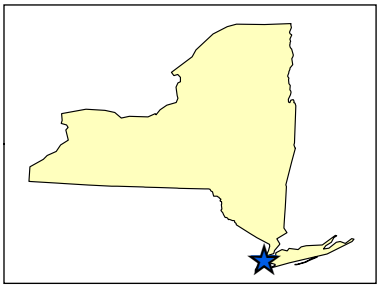


G:\Projects\State&Local\NYSDEC - D007624\D007624 - Work Assignments\14907.06 - Empire Electric\D007630\GIS\MXDs\SMP\Figure 7 Monitoring Well Locations.mxd



0 37.5 75 150
Feet

N

Legend

- Building Footprint
- Existing Monitoring Wells
- Monitoring Wells Installed by EA

Notes: Concentrations are in micrograms per liter (µg/L)
J: Result is less than the reporting limit but greater than or equal to the minimum detection limit and the concentration is an approximate value.
U: Indicates the analyte was analyzed for but not detected.

Figure 8
Remaining PCB Contamination in Groundwater

Empire Electric Site (224015)
Brooklyn, New York

Map Date: 5/30/2018
Projection: NAD83/ New York Long Island

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

EA

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Tables

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Table 1 – Summary of Required Analytical Sampling

Materials Sampled	PCBs	Asbestos	Lead in Paint	Disposal Facility Waste Characterization
Brick Piers	x			x
Granular Fill and Brick	x			x
Steel Covered Concrete Columns	x			x
Insulation		x		
Mixed Brick, Rubble, Test Pits	x			x
Wall Composites				x
Concrete Slabs				x
Paint Chips	x		x	
Unpainted Steel Wipe Samples	x			
Brick Party Wall	x			
Roofing Materials	x	x		
Asbestos Window Putty		x		
Premobilization Equipment Wipe Samples	x			
Demobilization Wipe Samples	x			
Soil Confirmation/Documentation Samples	x			
NOTES: PCB = Polychlorinated biphenyl				

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Table 2 Summary of Waste Streams and Disposal Quantities

Waste Profile	Landfill Destination	Landfill Weight (Tons)
Non-TSCA PCB Remediation Waste	Tullytown Resource Recovery Facility, Tullytown, Pennsylvania	3,434.85
Non-TSCA PCB Remediation Waste with ACM	Seneca Meadows in Waterloo, New York and Fairless Landfill in Morrisville, Pennsylvania	2,706.15
Non-TSCA PCB Remediation Waste with RCRA Lead	Michigan Disposal Waste Treatment Plant in Belleville, Michigan	2,018.61
RCRA ACM	Michigan Disposal Waste Treatment Plant in Belleville, Michigan	557.94
TSCA PCB Remediation Waste	Wayne Disposal in Belleville, Michigan	2,677.08
TSCA PCB Remediation Waste with ACM	Wayne Disposal in Belleville, Michigan	19.75
TSCA PCB Remediation Waste with RCRA Lead	US Ecology Grand View, Idaho	274.90
TSCA PCB Remediation Waste with RCRA Lead and ACM	US Ecology Grand View, Idaho	1,534.55
	Total	13,223.83

NOTES:
ACM = Asbestos containing materials
PCB = Polychlorinated biphenyl
RCRA = Resource Conservation and Recovery Act
TSCA = Toxic Substance Control Act

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Table 3 PCBs in Remaining Granite Piers Verification Samples

Analyte	Sample ID	EE-C-5-Smoke Stack-J2		EE-C-6-Smoke Stack-J3		EE-C-8-Granite Pier-A2		EE-C8-Granite Pier-A2-resample		EE-C12-Granite Pier-A1		EE-GranitePier-A2-43-17		EE-C-13-GP1-2A		EE-C-14-GP2-4A		EE-C-15-GP4-4B		EE-C-16-GP4-3B	
	Laboratory ID	1701165-005A		1701165-007A		1703001-002A		1703057-001A		1703057-002A		1704011-010A		1705138-002A		1705138-006A		1705138-009A		1705138-010A	
	Sample Date	1/25/2017		3/1/2017		3/1/2017		3/8/2017		3/8/2017		4/3/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017	
	Building Grid	J2		J3		A2		A2		A1		A2		A2		A4		B4		B3	
	Sample Type	Smoke Stack		Smoke Stack		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier	
PCBs by EPA Method 8082																					
AROCLOR 1016	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1221	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1232	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1242	ppb	(< 10)	U	(< 10)	U	12000		(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1248	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1254	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1260	ppb	85		(< 10)	U	(< 10)	U	88000		87		21		(< 9.8)	U	(< 10)	U	410		14	J
AROCLOR 1262	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	130		(< 10)	U	(< 9.9)	U	(< 9.9)	U
AROCLOR 1268	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 21000)	U	(< 9.7)	U	(< 10)	U	(< 9.8)	U	(< 10)	U	(< 9.9)	U	(< 9.9)	U
Total PCBs																					
Total PCBs	ppm	0.085		ND		**12**		**88**		0.087		0.021		0.13		ND		0.41		0.014	
Total Solids/Percent Moisture by ASTM D2974																					
PERCENT MOISTURE	%	0.190	J	0.200	J	0.200	J	2.94		0.320	J	2.08		--		--		--		--	

NOTES:
ID = Identification
NYSDEC = New York State Department of Environmental Conservation
USEPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Reporting Level.
U = Analyte was analyzed for, but not detected below the laboratory detection limit.
Analytical data results provided by American Analytical Laboratories
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-C104-GP7-D3 is a field duplicate of EE-C38-GP7-D3
EE-C48-GP11-F3 is a field duplicate of EE-C105-GP11-F3
EE-C57-GP15-H2 is a field duplicate of EE-C106-GP15-H2

Table 3 PCBs in Remaining Granite Piers Verification Samples

Analyte	Sample ID	EE-C-17-GP3-2B		EE-C-18-GP3-2B		EE-C-19-GP3-1B		EE-C-20-GP5-1C		EE-C-21-GP5-2C		EE-C-22-GP5-3C		EE-C-23-GP6-4C		EE-C-24-GP6-4C		EE-C-102-GP4-3B		EE-C36-GP7-D1		EE-C37-GP7-D2		EE-C38-GP7-D3	
	Laboratory ID	1705138-011A		1705138-012A		1705138-013A		1705138-015A		1705138-016A		1705138-017A		1705138-018A		1705138-019A		1705138-021A		1706174-001A		1706174-002A		1706174-003A	
	Sample Date	5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		6/27/2017		6/27/2017		6/27/2017	
	Building Grid	B2		B2		B1		C1		C2		C3		C4		C4		B3		D1		D2		D3	
	Sample Type	Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier	
PCBs by EPA Method 8082																									
AROCLOR 1016	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
AROCLOR 1221	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
AROCLOR 1232	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
AROCLOR 1242	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	1200	J
AROCLOR 1248	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
AROCLOR 1254	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
AROCLOR 1260	ppb	84		24		(< 9.7)	U	15	J	50		(< 9.9)	U	(< 9.6)	U	41		19	J	(< 9.6)	U	15	J	(< 190)	U
AROCLOR 1262	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	280		(< 9.8)	U	(< 9.8)	U	170	J	(< 9.7)	U	(< 190)	U
AROCLOR 1268	ppb	(< 9.9)	U	(< 9.9)	U	(< 9.7)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.6)	U	(< 9.8)	U	(< 9.8)	U	(< 9.6)	U	(< 9.7)	U	(< 190)	U
Total PCBs																									
Total PCBs	ppm	0.084		0.024		ND		0.015		0.05		ND		0.28		0.041		0.019		0.17		0.015		**1.2**	
Total Solids/Percent Moisture by ASTM D2974																									
PERCENT MOISTURE	%	--		--		--		--		--		--		--		--		--		--		--		--	

NOTES:
ID = Identification
NYSDEC = New York State Department of Environmenta
USEPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Repo
U = Analyte was analyzed for, but not detected below the l
Analytical data results provided by American Analytical L
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-C104-GP7-D3 is a field duplicate of EE-C38-GP7-D3
EE-C48-GP11-F3 is a field duplicate of EE-C105-GP11-F
EE-C57-GP15-H2 is a field duplicate of EE-C106-GP15-H

Table 3 PCBs in Remaining Granite Piers Verification Samples

Analyte	Sample ID	EE-C104-GP7-D3		EE-C39-GP8-D4		EE-C40-GP8-D5		EE-C41-GP9-E1		EE-C42-GP9-E2		EE-C43-GP9-E3		EE-C44-GP10-E4		EE-C45-GP10-E5		EE-C46-GP11-F1		EE-C47-GP11-F2		EE-C48-GP11-F3		EE-C105-GP11-F3	
	Laboratory ID	1706174-004A		1706174-005A		1706174-006A		1706174-007A		1706174-008A		1706174-009A		1706174-010A		1706174-011A		1706174-012A		1706174-013A		1706184-001A		1706184-002A	
	Sample Date	6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/27/2017		6/28/2017		6/28/2017	
	Building Grid	D3		D4		D5		E1		E2		E3		E4		E5		F1		F2		F3		F3	
	Sample Type	Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier	
PCBs by EPA Method 8082																									
AROCLOR 1016	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1221	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1232	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1242	ppb	610	J	(< 9.9)	U	(< 9.9)	U	520	J	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1248	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1254	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1260	ppb	(< 190)	U	(< 9.9)	U	62	J	(< 200)	U	(< 9.7)	U	530	J	(< 9.9)	U	130	J	1500		(< 9.7)	U	57	J	100	J
AROCLOR 1262	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	0	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
AROCLOR 1268	ppb	(< 190)	U	(< 9.9)	U	(< 9.9)	U	(< 200)	U	(< 9.7)	U	(< 9.7)	U	(< 9.9)	U	(< 9.9)	U	(< 9.8)	U	(< 9.7)	U	(< 9.9)	U	(< 9.8)	U
Total PCBs																									
Total PCBs	ppm	0.61		ND		0.062		0.52		ND		0.53		ND		0.13		**1.5**		ND		0.057		0.1	
Total Solids/Percent Moisture by ASTM D2974																									
PERCENT MOISTURE	%	--		--		--		--		--		--		--		--		--		--		--		--	

NOTES:
ID = Identification
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EE-C57-GP15-H2 is a field duplicate of EE-C106-GP15-H

Table 3 PCBs in Remaining Granite Piers Verification Samples

Analyte	Sample ID	EE-C49-GP12-F4		EE-C50-GP12-F5		EE-C51-GP13-G1		EE-C52-GP13-G2		EE-C53-GP13-G3		EE-C54-GP14-G4		EE-C55-GP14-G5		EE-C57-GP15-H2		EE-C106-GP15-H2		EE-C58-GP15-H3		EE-C59-GP15-H4	
	Laboratory ID	1706184-003A		1706184-004A		1706184-005A		1706184-006A		1706184-007A		1706184-008A		1706184-009A		1706184-011A		1706184-012A		1706184-013A		1706184-014A	
	Sample Date	6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017		6/28/2017	
	Building Grid	F4		F5		G1		G2		G3		G4		G5		H2		H2		H3		H4	
	Sample Type	Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier		Pier	
PCBs by EPA Method 8082																							
AROCLOR 1016	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1221	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1232	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1242	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1248	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1254	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1260	ppb	16	J	150		220		100		450	J	4100		330		240	J	140	J	88		89	
AROCLOR 1262	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
AROCLOR 1268	ppb	(< 9.7)	U	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	U	(< 9.5)	U
Total PCBs																							
Total PCBs	ppm	0.016		0.15		0.22		0.1		0.45		**4.1**		0.33		0.24		0.14		0.088		0.089	
Total Solids/Percent Moisture by ASTM D2974																							
PERCENT MOISTURE	%	--		--		--		--		--		--		--		--		--		--		--	

NOTES:
ID = Identification
NYSDEC = New York State Department of Environmenta
USEPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Repo
U = Analyte was analyzed for, but not detected below the l
Analytical data results provided by American Analytical L
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-C104-GP7-D3 is a field duplicate of EE-C38-GP7-D3
EE-C48-GP11-F3 is a field duplicate of EE-C105-GP11-F
EE-C57-GP15-H2 is a field duplicate of EE-C106-GP15-H

Table 4 PCBs in Remaining Granite Foundation Verification Samples

Analyte	Sample ID	EE-C-1-4 ft brs-K1		E-C-2-4 ft brs-J1		EE-C-3-4 ft brs-K4		EE-C-4-4ft brs-J4		EE-C-9-4 ft brs-A1		EE-C-10-4 ft brs-A1		EE-C-65-4 ft brs-A1		EE-C-11-4 ft brs-A2		EE-GRPW-BCS-#10-I4		EE-GRPW-BCS-#11-H4		EE-GRPW-BCS-#100-H4		EE-GraniteWall-BCS-#12-I1	
	Laboratory ID	1701165-001A		1701165-002A		1701165-003A		1701165-004A		1703001-003A		1703001-005A		1703001-006A		1703001-007A		1704011-005A		1704011-006A		1704011-007A		1704011-008A	
	Sample Date	1/25/2017		1/25/2017		1/25/2017		1/25/2017		3/1/2017		3/1/2017		3/1/2017		3/1/2017		4/3/2017		4/3/2017		4/3/2017		4/3/2017	
	Building Grid Location	K1		J1		K4		J4		A1		A1		A1		A2		I4		H4		H4		I1	
	Sample Type	Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall	
PCBs by EPA Method 8082																									
AROCLOR 1016	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1221	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1232	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1242	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1248	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1254	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1260	ppb	190		(< 10)	U	(< 10)	U	(< 10)	U	68		(< 9.8)	U	(< 10)	U	(< 10)	U	42		18	J	22	J	(< 10)	U
AROCLOR 1262	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
AROCLOR 1268	ppb	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 9.7)	U	(< 9.8)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U	(< 10)	U
Total PCBs																									
Total PCBs	ppm	0.190		ND		ND		ND		0.068		ND		ND		ND		0.042		0.018		0.022		ND	
Total Solids/Percent Moisture by ASTM D2974																									
PERCENT MOISTURE	%	0.560	J	0.200	J	0.290	J	0.290	J	0.210	J	0.110	J	0.220	J	0.210	J	0.210	J	0.310	J	0.110	J	0.550	J

NOTES:
ID = Identification
NYSDEC = New York State Department of Environmental Conservation
EPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Reporting Level.
U = Analyte was analyzed for, but not detected below the laboratory detection limit.
Analytical data results provided by American Analytical Laboratories
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-GW-C67-H1 is a field duplicate of EE-GW-C107-H1
EE-GW-C76-E5 is a field duplicate of EE-GW-C108-E5

Table 4 PCBs in Remaining Granite Foundation Verification Samples

Analyte	Sample ID	EE-GraniteWall-BCS-#13-H1		EE-GW-CS-#14-2A		EE-GW-CS-#15-3A		EE-GW-CS-#16-4A		EE-GW-CS-#17-5A		EE-GW-CS-#18-5B		EE-GW-CS-#101-2A		EE-C35-Granite Footer-K2		EE-GW-CS61-B1		EE-GW-C62-C1	
	Laboratory ID	1704011-009A		1705138-001A		1705138-003A		1705138-005A		1705138-007A		1705138-008A		1705138-020A		1706130-001A		1706184-016A		1706191-001A	
	Sample Date	4/3/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		5/18/2017		6/20/2017		6/28/2017		6/29/2017	
	Building Grid Location	H1		A2		A3		A4		A5		B5		A2		K2		B1		C1	
	Sample Type	Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Floor		Foundation Wall		Foundation Wall	
PCBs by EPA Method 8082																					
AROCLOR 1016	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1221	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1232	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1242	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1248	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1254	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1260	ppb	83		(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	48		1100	J	(< 9.5)	U
AROCLOR 1262	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
AROCLOR 1268	ppb	(< 10)	U	(< 9.9)	U	(< 9.8)	U	(< 9.9)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.6)	U	(< 9.8)	U	(< 9.5)	U
Total PCBs																					
Total PCBs	ppm	0.083		ND		ND		ND		ND		ND		ND		0.048		1.1		ND	
Total Solids/Percent Moisture by ASTM D2974																					
PERCENT MOISTURE	%	0.220	J	--		--		--		--		--		--		--		--		--	

NOTES:
ID = Identification
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EPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Repor
U = Analyte was analyzed for, but not detected below the la
Analytical data results provided by American Analytical La
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-GW-C67-H1 is a field duplicate of EE-GW-C107-H1
EE-GW-C76-E5 is a field duplicate of EE-GW-C108-E5

Table 4 PCBs in Remaining Granite Foundation Verification Samples

Analyte	Sample ID	EE-GW-C63-D1		EE-GW-C64-E1		EE-GW-C65-F1		EE-GW-C6-G1		EE-GW-C67-H1		EE-GW-C107-H1		EE-GW-C74-C5		EE-GW-C75-D5		EE-GW-C76-E5		EE-GW-C108-E5		EE-GW-C77-F5		EE-GW-C78-G5	
	Laboratory ID	1706191-002A		1706191-003A		1706191-004A		1706191-005A		1706191-006A		1706191-007A		1706191-014A		1706191-015A		1706191-016A		1706191-017A		1706191-018A		1706191-019A	
	Sample Date	6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017	
	Building Grid Location	D1		E1		F1		G1		H1		H1		C5		D5		E5		E5		F5		G5	
	Sample Type	Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall		Foundation Wall	
PCBs by EPA Method 8082																									
AROCLOR 1016	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1221	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1232	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1242	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1248	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1254	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1260	ppb	(< 9.8)	U	(< 9.8)	U	600	J	820		110		120		85	J	(< 9.8)	U	(< 9.9)	UJ	65		340		210	
AROCLOR 1262	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
AROCLOR 1268	ppb	(< 9.8)	U	(< 9.8)	U	(< 9.8)	U	(< 9.7)	U	(< 9.8)	U	(< 9.7)	U	(< 9.7)	U	(< 9.8)	U	(< 9.9)	UJ	(< 9.8)	U	(< 9.6)	U	(< 9.8)	U
Total PCBs																									
Total PCBs	ppm	ND		ND		0.6		0.82		0.11		0.12		0.085		ND		ND		0.065		0.34		0.21	
Total Solids/Percent Moisture by ASTM D2974																									
PERCENT MOISTURE	%	--		--		--		--		--		--		--		--		--		--		--		--	

NOTES:
ID = Identification
NYSDEC = New York State Department of Environmental
EPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND = Not Detected
PCB = Polychlorinated biphenyl
J = Result is estimated concentration; detected below Repor
U = Analyte was analyzed for, but not detected below the la
Analytical data results provided by American Analytical Lal
Bold = Value exceeds cleanup objective of 1 mg/kg
EE-GW-C67-H1 is a field duplicate of EE-GW-C107-H1
EE-GW-C76-E5 is a field duplicate of EE-GW-C108-E5

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Table 5 PCBs in Remaining Concrete Verification Samples

Analyte	Sample ID	EE-C-7-Concrete Floor-A1		EE-BR-BOTTOM-3A		EE-C-34-ConcreteFloor-F4		EE-C56-CFloor-H1		EE-C60-CFloor-H5		EE-C68-CFloor-F1		EE-C69-CFloor-C1		EE-C70-CFloor-D3		EE-C71-CFloor-F3		EE-C72-CFloor-E5		EE-C73-CFloor-C5		EE-C79-CFloor-I3		EE-C80-CFLOOR-I4	
	Laboratory ID	1703001-001A		1705138-004A		1705152-011A		1706184-010A		1706184-015A		1706191-008A		1706191-009A		1706191-010A		1706191-011A		1706191-012A		1706191-013A		1706191-020A		1706191-021A	
	Sample Date	3/1/2017		5/18/2017		5/19/2017		6/28/2017		6/28/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017		6/29/2017	
	Building Grid	A1		A3		F4		H1		H5		F1		C1		D3		F3		E5		C5		I3		I4	
	Sample Type	Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor		Floor	
PCBs by EPA Method 8082																											
AROCLOR 1016	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1221	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1232	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1242	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1248	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1254	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1260	ppb	270		250		38000		(< 9.8)	UJ	360	J	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	15	J	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	1800	
AROCLOR 1262	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
AROCLOR 1268	ppb	(< 10)	U	(< 9.9)	U	(< 1000)	U	(< 9.8)	UJ	(< 9.6)	U	(< 9.7)	UJ	(< 9.7)	UJ	(< 9.8)	UJ	(< 9.6)	UJ	(< 9.6)	UJ	(< 9.7)	UJ	(< 9.9)	U	(< 9.8)	U
Total PCBs																											
Total PCBs	ppm	0.27		0.25		38		ND		0.36		ND		ND		ND		0.015		ND		ND		ND		1.8	
Total Solids/Percent Moisture by ASTM D2974																											
PERCENT MOISTURE	%	0.660	J	--		0.390	J	--		--		--		--		--		--		--		--		--		--	

NOTES:
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EPA = United States Environmental Protection Agency
ppb = Parts per billion = microgram(s) per kilogram
ppm = Parts per million = milligram(s) per kilogram
ND= Not Detected
PCB = Polychlorinated biphenyl
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Bold = Value exceeds cleanup objective of 1 mg/kg

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Table 6 PCBs in Remaining Soil Verification Samples

Analyte	Sample ID	EE-SB-25-5'BCS-K1		EE-SB-26-7'BCS-K2		EE-SB-27-9'BCS-K3		EE-SB-28-7'BCS-K4		EE-SB-103-7'BCS-K4		EE-SB-29-7'BCS-K5		EE-SB-30-2'BCS-H4		EE-SB-31-2'BCS-H5		EE-SB-32-3'BCS-I4		EE-SB-33-5'BCS-J1		EE-SB81-2'BCS-T3	
	Laboratory ID	1705152-001A		1705152-002A		1705152-003A		1705152-004A		1705152-005A		1705152-006A		1705152-007A		1705152-008A		1705152-009A		1705152-010A		1706191-022A	
	Sample Date	5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		5/19/2017		6/29/2017	
	Building Grid	K1		K2		K3		K4		K4		K5		H4		H5		I4		J1		J3	
PCBs by EPA Method 8082																							
AROCLOR 1016	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1221	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1232	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1242	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1248	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1254	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1260	ppb	3200		220000		400		930		900		3200		560000		1600000	J	4900		6700		50000	
AROCLOR 1262	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
AROCLOR 1268	ppb	(< 260)	U	(< 1400)	U	(< 13)	U	(< 120)	U	(< 130)	U	(< 250)	U	(< 11000)	U	(< 11000)	U	(< 1100)	U	(< 1200)	U	(< 11)	UJ
Total PCBs																							
Total PCBs	ppm	3.2		220		0.4		0.93		0.9		3.2		560		1600		4.9		6.7		50	
Total Solids/Percent Moisture by ASTM D2974																							
PERCENT MOISTURE		26.8		31.5		25.0		22.3		21.6		21.4		10.2		6.64		7.38		14.2		12.1	

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Table 7 PCBs in Remaining Party Wall Verification Sample Summary

Analyte	Sample ID	EE-BRPW#1 1st FL K1		EE-BRPW#2 1st FL K2		EE-BRPW #3 1st FL K3		EE-BRCS-Party Wall #3		EE-BRCS-Party Wall #4		EE-BRPW-#1-Cellar-K1		EE-BRPW-#2-Cellar-K2		EE-BRPW-#5-Cellar-K2 (DUP)		EE-BRPW-#3-Cellar-K3		EE-BRPW-#4-Cellar-K4		EE-BRPW-BCS-#6-KI		EE-BRPW-BCS-#7-K2		EE-BRPW-BCS-#8-K3		EE-BRPW-BCS-#9-K4	
	Laboratory ID	1504123-001		1504123-002A		1504123-003A		1508217-001A		1508217-002A		1609153-001A		1609153-002A		1609153-003A		1609153-004A		1609153-005A		1704011-001A		1704011-002A		1704011-003A		1704011-004A	
	Sample Date	4/14/2015		4/14/2015		4/14/2015		8/28/2015		8/28/2015		9/20/2016		9/20/2016		9/20/2016		9/20/2016		9/20/2016		4/3/2017		4/3/2017		4/3/2017		4/3/2017	
	Building Level	Ground Floor		Ground Floor		Ground Floor		Ground Floor		Ground Floor		Cellar		Cellar		Cellar		Cellar		Cellar		Below Cellar Slab		Below Cellar Slab		Below Cellar Slab		Below Cellar Slab	
	Building Grid	K1		K2		K3		K4		K4		K1		K2		K2		K3		K4		K1		K2		K3		K4	
PCBs by USEPA Method 8082																													
AROCLOR 1016	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1221	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1232	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1242	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1248	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1254	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1260	ppb	34		120		400		280		260		70		330		150		480		140		(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1262	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
AROCLOR 1268	ppb	(< 11.8)	U	(< 11.2)	U	(< 10.1)	U	(< 10.7)	U	(< 10.7)	U	(< 11)	U	(< 10)	U	(< 10)		(< 10)	U	(< 11)	U	(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
Total PCBs																													
Total PCBs	ppm	0.034		0.12		0.4		0.28		0.26		0.07		0.33		0.15		0.48		0.14		(< 11)	U	(< 10)	UJ	(< 10)	U	(< 12)	U
Total Solids/Percent Moisture by ASTM D2974																													
PERCENT MOISTURE	%	16		11		2		6.44		6.94		10.90		2.12		2.52		1.91		11.60		6.13		3.63		3.19		15.7	

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