

**Toxic Substances Control Act (TSCA)  
Polychlorinated Biphenyls (PCBs)  
Risk-Based Approval Application  
Perth Amboy 1160, LLC  
1160 State Street  
Perth Amboy, New Jersey**

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## **Executive Summary and Introduction**

First Environment, Inc. (First Environment), on behalf of Perth Amboy 1160, LLC (Perth Amboy 1160) and Eport Phase II Urban Renewal, LLC (Bridge), has prepared this Risk-Based Approval Application for the remediation of polychlorinated biphenyl (PCB) contaminated material for the property located at 1160 State Street, Perth Amboy, Middlesex County, New Jersey (the “Site”). The Site is designated as Block 430, Lots 1.02 and 1.03 on the Middlesex County tax map. Lot 1.02 portion of the Site is owned by Bridge; Lot 1.03 portion of the Site is owned by Perth Amboy 1160. This report is based on the United States Environmental Protection Agency (USEPA) May 2017 Facility Approval Streamlining Toolbox (EPA530-F-17-002) Tool 4, TSCA Risk-Based PCB Cleanups Checklist to address the requirements of 40 CFR 761.61(c).

A Current Conditions Report (CCR) was submitted previously to the EPA, as per the recommendation stated in Section II.A of the Facility Approval Streamlining Toolbox, in order to expedite the review of this Application for Risk Based Closure in accordance with 40 CFR 761.61(c). The CCR addressed the information presented in Sections III.B.1 (Executive Summary), III.B.2 (Site Description), III.B.3 (Description of PCB “Cleanup Site”), III.B.4 (Proposed Risk-Based PCB Cleanup Levels), and III.B.5 (Site Characterization and Data Gaps) in the Checklist in Section III of the Facility Approval Streamlining Toolbox. For completeness of this application, these sections have also been included below.

### **Site Address**

The Site is located in a commercial/industrial area at 1160 State Street, Perth Amboy, Middlesex County, New Jersey. The Site is designated as Block 430, Lots 1.02 and 1.03 on the Middlesex County tax map. The Site was previously designated as Block 428 Lot 1.04 and Block 430 Lots 1, 1.01, 2, 3, and 4. The Site subdivision was approved by Middlesex County in April 2018. A Site Location map has been provided as Figure 1; current parcel boundaries are depicted on Figure 2.

### **Owner and/or Operator Name and Contact Information**

The Site is currently owned by Bridge and Perth Amboy 1160. The Lot 1.02 portion of the Site was purchased by Bridge from Perth Amboy 1160 on December 30, 2020. Perth Amboy 1160 retains ownership of the Lot 1.03 portion of the Site.

Owner (Lot 1.02): Eport Phase II Urban Renewal, LLC  
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Owner (Lot 1.03): Perth Amboy 1160, LLC  
Contact: Thomas Roberts, Member; Michael  
Roberts, Member 1515 Des Peres Road,  
Suite 300 Saint Louis, Missouri 63131  
Phone: (314)835-1515, Fax:  
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[mroberts@cdcco.com](mailto:mroberts@cdcco.com)

### **Consultant Name and Contact Information:**

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Email: [rharwood@excelenv.com](mailto:rharwood@excelenv.com)

Consultant (Lot 1.03): First Environment, Inc.  
Contact: Thomas Bambrick, LSRP, Director  
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### **Summary of PCB Impacts (Impacted Media and Maximum PCB Levels)**

During 2010, remedial investigation activities identified PCB impacted material in eight areas of concern (AOCs) at the Site including AOC D4-1: Parting Plant Rubble; AOC D4-2: Copper Tank House Basement; AOC D2-1: Slag Dump; AOC D2-2: NL Industries Baghouse Rubble Outside Southern Fence Line; AOC D2-3: Crushed Building Debris at the South Fence Line; AOC D4-5: Laboratory Building Rubble; AOC E1-1: Former Transformer Enclosure and Electrical Building; and AOC G2: Former Power House. A Self-Implementing Plan (SIP) for the remediation of PCB contamination was submitted to the USEPA on November 4, 2011. This plan was implemented in 2014 and involved the excavation and off-site disposal of PCB impacted material above 100 ppm and the relocation of PCB impacted material between 10 ppm and 100 ppm to an area to be designated as a Low Occupancy Area (LOA). Due to recent redevelopment plans for the property, however, a LOA is not suitable in its original proposed location. Therefore, in 2017

and 2018, additional delineation activities were conducted in AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House (which was the former proposed LOA). Analytical results revealed additional impacted material that exhibit PCB concentrations above 100 ppm.

The source of PCBs for each of these AOCs is unknown. PCB impacts are primarily associated with building rubble/fill from former Site buildings that have been demolished and used as backfill. Further details for each AOC are provided under the “Sources of PCBs and Historic Operations” section below. The impacted media is the fill material and the surrounding soils. To date, 449 sample locations represent current soil conditions with respect to PCBs. These samples were collected during site/remedial investigation activities conducted in 2006 and 2010, delineation activities performed in 2011 and 2013, post-excavation sampling in 2014, and further delineation activities performed in 2017/2018. The sample depths with detectable concentrations of PCBs above 1 ppm range from near surface to 9.0 feet below ground surface (bgs). A summary of the analytical results is provided on Table 1. The soil sample locations are illustrated on Figure 2.

Out of the 449 samples that were collected site-wide, 146 samples (approximately 30 percent of the samples) were determined to be either non-detect (ND) for PCBs or had PCB concentrations below the NJDEP non-residential direct contact soil remediation standard (NRDCSRS) of 1.0 ppm; 129 samples (approximately 29 percent of the samples) revealed concentrations of PCBs between 1.0 and 10 ppm; 151 samples (approximately 34 percent of the samples) revealed PCB concentrations between 10 ppm and 100 ppm; and 22 samples (approximately 5 percent of the samples) revealed PCB concentrations between 100 and 500 ppm. One sample was detected at a concentration above 500 ppm. Samples which revealed PCB concentrations greater than 100 ppm are located on the Lot 1.02 portion of the Site. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm.

In order to assess the leachability of the PCBs identified in the soils, synthetic precipitation leaching procedure (SPLP) was utilized in accordance with the NJDEP “Development of Site-Specific Impact to Groundwater Soil Remediation Standards Using the Synthetic Precipitation Leaching Procedure” guidance document dated November 2013. A total of six soil samples were re-collected from within the 2017/2018 delineation area and submitted for SPLP analysis. Selected samples were of the highest contaminant concentrations and representative of the

different characteristics of the donor material that would affect the mobility of any given contaminant into groundwater (e.g., pH, soil texture, composition of fill). Total PCB concentrations for the six samples that were recollected range from 50 ppm to 250 ppm. The Total PCB leachate concentration was ND in each of the six soil samples that were submitted for SPLP analysis.

In order to evaluate potential groundwater impacts, comprehensive groundwater sampling was conducted in 2018 and 2019. PCB concentrations were not detected above the laboratory reporting limit (ND) for all wells sampled with the exception of MW-23 and MW-12SR, which revealed concentrations of PCBs below the NJDEP Groundwater Quality Standard (GWQS) of 0.5 ppb. These wells are both located along the eastern portion of the Site, along the Arthur Kill. A summary of the analytical results for groundwater is provided as Table 2. The monitoring well locations are illustrated on Figure 3.

## **Proposed Cleanup Summary**

The Site is designated as a Brownfields site and is currently in the process of remediation for other non-PCB related AOCs that have been identified during remedial investigations. The final remedy for soil at the Site will include the establishment of institutional (Deed Notice) and engineering (capping) controls. It should be noted that the engineering controls will include a site-wide cap and a cutoff wall/permeable reactive cell (PRC) funnel gate system to address groundwater contamination and Classification Exception Area (CEA). An institutional control in the form of a Deed Notice will restrict the use of the property to commercial/industrial purposes (i.e., not residential). Current plans call for the Site to be redeveloped for industrial/commercial purposes only. Development plans for the Site include raising the elevation a minimum of four feet to a level above the FEMA flood hazard elevation and construction of an 800,000 square foot warehouse, a 237,000 square foot warehouse, and associated paved driveways and parking areas. A figure depicting redevelopment plans including the cutoff wall/PRC is provided as Figure 4.

In light of the planned remedial action and Site re-development plans, it is proposed that PCB material with concentrations of 500 ppm or less be allowed to remain in place on-site. Samples which revealed PCB concentrations between 100 ppm and 500 ppm are located on the Lot 1.02 portion of the Site. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm and will remain on Lot 1.03. In the unanticipated event that post-excavation sampling reveals PCB concentrations up to 500 ppm on Lot 1.03, Perth Amboy 1160



will leave the PCB impacted material in place and address via capping and deed notice as described below. To support the proposed cleanup level of 500 ppm, a Pathway Analysis Report (PAR) has been prepared by ARM Group, Inc. and is provided as Appendix A.

The PCB material remaining on site will be capped by a minimum of four feet of approved, non-PCB impacted alternative fill overlain by a minimum of six inches of pavement or concrete or two feet of certified clean fill (landscaped areas). As noted, the overall remedy for the Site will include the implementation of institutional (Deed Notice) and engineering (site-wide cap) controls. The deed restriction will be placed for all areas where PCB concentrations are greater than 1 ppm and will encompass the entire Site to address impacts from historic fill. The Deed Notice will include the requirement to maintain the cap in perpetuity. In accordance with 40 CFR § 761.61(a)(8)(i)(B), a certification that the Deed Notice has been recorded will be submitted by Perth Amboy 1160 and Bridge to the EPA Regional Administrator upon completion of the remedy.

All material exhibiting total PCB concentrations above 500 ppm will be excavated and disposed of off-site. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed for Lot 1.02. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm, as such, no excavation or soil sampling is proposed for Lot 1.03. In the unanticipated event that post-excavation sampling reveals PCB concentrations greater than 500 ppm on Lot 1.03 or elsewhere on Lot 1.02, the PCB impacted material will be excavated and disposed of by Perth Amboy 1160 (if on Lot 1.03) or Bridge (if on Lot 1.02) as described below and in the Application and Cleanup Plan section of this report.

A single soil sample, DTP-100 (0.5-1.0) on Lot 1.02 detected a concentration of PCBs greater than 500 ppm. Soil sample DTP-100 (3.5-4.0) revealed PCB concentrations of 21 ppm. Accordingly, Bridge will address DTP-100 (0.5-1.0) by a 20-foot by 20-foot square excavation (400 square feet) with DTP-100 at the center. The excavation will extend to a depth of 4.0 feet bgs, utilizing soil sample DTP-100 (3.5-4.0) as a post excavation base sample. A figure of the proposed excavation is provided as Figure 5.

All soils excavated for off-site disposal will be disposed of in a RCRA Sec. 3004 or 3006 permitted hazardous waste landfill or other approved PCB disposal facility. The transportation

and disposal of the PCB contaminated soils will be tracked under hazardous waste manifest. All equipment utilized in the remediation will be decontaminated in accordance with 40 CFR § 761.79, including swabbing surfaces that have contacted PCBs with acetone and a double wash/rinse as defined in Subpart S. All on-site storage of PCB remediation waste will be in accordance with 40 CFR § 761.65(c)(9).

Following soil removal, post-excavation sampling will be conducted to characterize post-remediation conditions. Post-excavation sampling will be conducted in accordance with the NJDEP "Coordination of NJDEP and USEPA PCB Remediation Policies" dated March 3, 2011. The sampling frequency will be conducted as specified in the NJDEP Technical Guidance for Remedial Action Verification Sampling for Soil dated March 2015; in accordance with 40 CFR Part 761, Subpart O; and in accordance with the sampling protocol as specified in the approved 2011 SIP to document the effectiveness of the remedial action.

As noted previously, PCBs have not been identified in groundwater at concentrations above the NJDEP GWQS. In addition, the Impact to Groundwater pathway has been evaluated through SPLP sampling as discussed previously in this submission. Notwithstanding, it should be noted that site-wide groundwater is being addressed via the cutoff wall/PRC funnel gate system that has been installed to address metals contamination in groundwater. Furthermore, a CEA will be established as an institutional control restricting any use of groundwater at the Site. The CEA will also serve as a Well Restriction Area (WRA). Groundwater monitoring in association with the groundwater system will be performed in perpetuity in accordance with a sampling schedule outlined in a pending Remedial Action Permit.

It is anticipated that the remedial action specified above will be initiated upon approval of this Risk-Based application by the USEPA. The Site will be subsequently developed as shown in Figure 4.

## **State Agency Interests**

The Site is designated as a Brownfields site and is subject to the New Jersey Industrial Site Recovery Act (ISRA) and New Jersey Site Remediation Program (SRP PI No. 003619). Accordingly, Mr. Thomas Bambrick has been retained to provide Licensed Site Remediation Professional (LSRP) services under license No. 573505. A Preliminary Assessment and Site Investigation were conducted in 2007 which identified 155 AOCs. Remedial Investigation Reports (RIR) and Remedial Action Work Plans (RAWP) were submitted to NJDEP in 2010,

2011, and 2013. A RAWP Addendum was submitted to the NJDEP in February 2017. The Site is currently undergoing remediation in accordance with the 2013 RAWP and the 2017 RAWP Addendum to address non-PCB contamination associated with site-wide fill, concrete building debris, a former cooling pond, site groundwater, and sediments of the Arthur Kill. A Waterfront Development Permit, Freshwater Wetland General Permit #4, a Flood Hazard Area Individual Permit, and a Flood Hazard Area Verification were approved by NJDEP Division of Land Use Regulation for the above-referenced remediation and filling activities.

## **Written Certification**

Executed Owner's Certifications are provided as Appendix B.

## Site Description

### Surrounding Land Uses

The Site is located in a commercial/industrial area of Perth Amboy, Middlesex County, New Jersey and is bounded by State Street on the west, a petroleum bulk storage facility on the north, the Arthur Kill on the east, and a former industrial site on the south. A portion of the Site's southern property line is adjacent to Cranes Creek, which is located on the adjacent property. Cranes Creek is a manmade channel which serves as a storm drain and discharge point for groundwater from surrounding properties as well as State Street. The location of the Site is illustrated on a portion of the United States Geologic Survey (USGS) 7.5 Minute Topographic Map (Perth Amboy Quadrangle) provided as Figure 1. A Site Vicinity Map has been provided as Figure 6.

### Current and Planned Future Uses

The Site is currently developed with paved and gravel parking areas on the western portion of the property and paved or slag covered areas over the majority of the eastern portion of the Site. The Site's northeast corner is currently occupied by a marine construction company. No other operations currently exist on-site. The Site was formerly leased to multiple tenants. The most recent operations include the storage of shipping containers, storage of trucks and warehousing, manufacturing of marine fenders, manufacturing and recycling of wooden pallets, marine construction services, marine spill response services, and security services.

Planned future uses for the Site include redevelopment for industrial and/or commercial purposes. Development plans of the Site include raising the elevation a minimum of four feet, the construction of an 800,000 square foot warehouse, a 237,000 square foot warehouse, and associated paved drive and parking areas.

### On-site Buildings

No buildings currently exist on-site as all former buildings have been demolished in anticipation of site redevelopment.

## **Hydrogeology and Depth-to-Groundwater**

The Site depth-to-groundwater has been measured generally from 5.0 to 10.0 feet bgs. At the eastern end of the Site, the groundwater surface elevation generally varies between 2 and 8 feet above mean sea level (msl) and is influenced by tidal effects at some locations. The groundwater surface rises toward the west to approximately 17 feet above msl along State Street. Based on contours previously prepared by First Environment and others, the groundwater flow is generally in the direction of Arthur Kill and Cranes Creek.

## **Proximity to Surface Water**

The Site waterfront is approximately 1,000 feet long along the Arthur Kill, which generally flows north-south. Cranes Creek, located on the adjacent property along the southern portion of the Site, is approximately 2,500 feet long and generally flows west-east.

## **Stormwater Runoff and Any Collection System and Discharges to Surface Water and Other Areas**

The Site generally drains to four distinct stormwater runoff outfalls from the property. A stormwater pipe is located at the southwest corner of the property and outlets to the municipal storm sewer system south of the property. This stormwater pipe conveys runoff from the western portion of the Site that formerly consisted of commercial buildings and paved areas. Post-redevelopment, it is expected that the area that drains to this discharge point will include lawn/landscaped areas and paved parking/access driving areas.

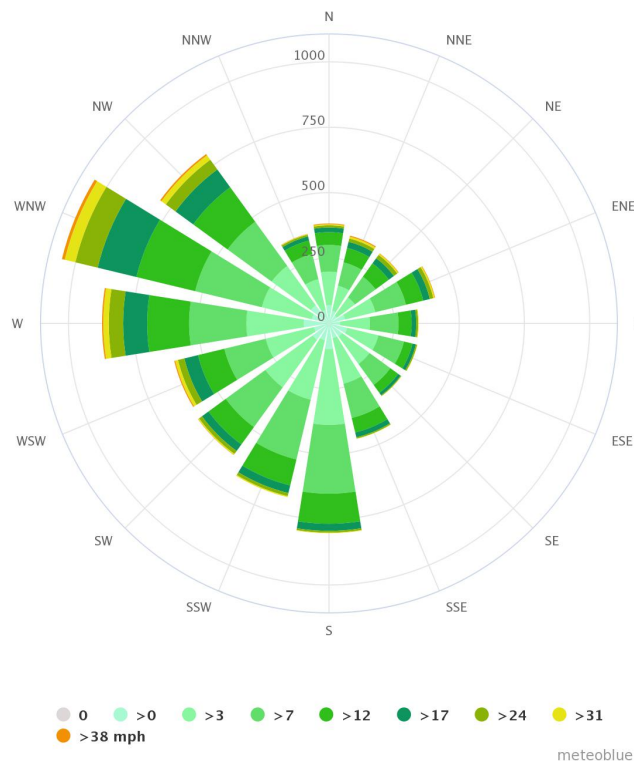
The second runoff outfall is a drainage channel located along the north property boundary that drains the entire length of the property and outlets to the Arthur Kill. The area that drains to this discharge point includes various paved areas. It is expected that post-development the drainage area to this discharge point will be limited to lawn/landscaped areas along the north property line.

The majority of the Site drains through a stormwater outfall to the Arthur Kill. Currently, this outfall drains the runoff from the eastern three-quarters of the Site. It is expected that following redevelopment, the majority of the runoff from the Site will be directed via drainage ditches and closed storm drain systems to an outlet to the Arthur Kill along with a stormwater management basin to help attenuate peak flows from the Site.

The fourth discharge point is runoff which drains the south of the property to the wetland area and Cranes Creek. The area draining to this point includes paved, gravel, and compacted slag areas. Post-redevelopment, the area draining to Cranes Creek will be limited to include only lawn landscaped areas along the south property line.

## Typical Weather Patterns, Climate, and Wind Rose Depicting Wind Direction and Speed

Perth Amboy is located in northern New Jersey and therefore experiences a fairly moderate climate with cold winters and warm, humid summers. According to the National Oceanic and Atmospheric Administration (NOAA, Newark data), average temperature ranges from a July average of 77°F (25°C) to 32°F (0°C) in January. The average annual precipitation is about 46 inches. Average precipitation is approximately 122 days per year and generally ranges from 8.6 days to 11.5 days per month with autumn (September through November) being the drier months. The average annual wind speed is 12.89 miles per hour (mph) and generally blows from a west-northwest direction. A wind rose is provided below.



Perth Amboy, NJ Wind Rose. Source: Meteoblue.com

## **Soil Types and Geological Features and Characteristics at the Site**

The geology of the Site generally consists of a layer of site-wide fill, slag residuals from historical metals refining and other anthropogenic filling underlain by organic rich Holocene Sediments. A thin layer of glacial till is sometimes present. These surface materials are all underlain by the Woodbridge Clay formation. The Woodbridge Clay underlies the entire Site from near the ground surface on the west to depths of more than 30.0 feet bgs on the east.

## **Sources of PCBs and Historic Operations**

Historical Maps indicated that the Site consisted of agricultural land and coastal marshland until 1858. Between 1858 and 1875, a clay pit was opened on the upland portion of the Site. The American Smelting and Refining Company (ASARCO) acquired the operations in 1901 and expanded them until operations ceased in 1976. Between 1981 and 1991, the Site was owned by Neuburne Brown until there was a rescission of sale and ASARCO regained ownership. The property was purchased out of bankruptcy court by Perth Amboy 1160 in September 2009.

Historical operations at the ASARCO facility included the reduction of non-ferrous metal ore to their metallic form. From 1981 to near present day, the Site has been leased to and operated by various tenants. Most recent operations include the storage of shipping containers, storage of trucks and warehousing, manufacturing of marine fenders, manufacturing and recycling of wooden pallets, marine construction services, marine spill response services, and security services.

As discussed previously, the presence of PCBs was confirmed during RI and delineation activities that were conducted at the Site. PCB impacted material was identified in eight AOCs including AOC D4-1: Parting Plant Rubble; AOC D4-2: Copper Tank House Basement; AOC D2-1: Slag Dump; AOC D2-2: NL Industries Baghouse Rubble Outside Southern Fence Line; AOC D2-3: Crushed Building Debris at the South Fence Line; AOC D4-5: Laboratory Building Rubble; AOC E1-1: Former Transformer Enclosure and Electrical Building; and AOC G2: Former Power House. A summary of each AOC impacted by PCBs is provided below. The location of each AOC is provided on **Figure 7**.

### ***AOC D2-1: Slag Dump***

The southeast corner of the Site was designated as the Slag Dump by ASARCO from as early as 1919. This area was leveled between 1940 and 1951, with the surplus slag being relocated to the south side of Cranes Creek. At the same time, Cranes Creek became channelized and

straightened. The former slag dump was then used for the construction of oil bulk storage tanks, the brick storage shed, and the salvage building. Open areas were used for yard storage on the graded slag surface. The slag dump occupied approximately 5.3 acres.

This AOC was investigated concurrently with AOC D4-8 (site-wide fill). One test pit was advanced for every acre of the fill material (six test pits total: K4-TP1, L4-TP1, L5-TP1, M4-TP1, N3-TP1, and N4-TP1). One sample was collected at each location at a depth corresponding to the former plant surface and was analyzed for target analyte list (TAL) metals, semi-volatile organic compounds (SVOCs) plus a forward library search for 15 tentatively identified compounds (SVOC+15), volatile organic compounds (VOCs) plus a forward library search for 10 tentatively identified compounds (VOC +10), and PCBs analyses.

The analytical results of the slag fill material revealed concentrations of PCBs (Aroclor-1254) above the NJDEP impact to groundwater soil screening levels (IGWSSL) of 0.2 ppm. Only N3-TP1 exceeded the PCB NRDCSRS of 1 ppm, with a concentration of 7 ppm. Analytical results also revealed concentrations of several metals and SVOCs above the IGWSSL and/or NRDCSRS.

Only one sample (N3-TP1) collected from this AOC revealed a concentration of PCBs above 1 ppm. This is believed to be a result of a discharge from a transformer that was previously stored in this area. Therefore, in accordance with the USEPA approved 2011 SIP, no excavation, additional sampling, or use restrictions were implemented for this AOC. A site-wide cap will be installed that meets the requirements set forth in 40 CFR Part 761.61(a)(7).

### ***AOC D2-2: NL Industries Baghouse Rubble Outside Southern Fence Line***

Between 1980 and 1990, during the ownership by Neuburne Brown, a large pile of baghouse demolition debris was placed outside the ASARCO fence line and adjacent to the NL right-of-way. The baghouse rubble consists of large pieces of concrete, bricks, rebar, steel beams, and used filter bags. Dutch Boy paint pigment containers were identified in this debris by JMZ Geology (JMZ), confirming the origin was from the NL site. The area occupies approximately 22,000 square feet.

During previous RI activities, three test pits were advanced through the fill material. Two samples were collected from each test pit to characterize the nature of the fill material and to delineate native soils. The soil samples were analyzed for TAL Metals, SVOC+15, VOC+10,



and PCBs. During the completion of the third test pit (O4-TP1), a paint can stockpile was encountered beneath the building rubble.

The soil analytical results from the samples collected from the building rubble revealed concentrations of PCBs above the IGWSSL of 0.2 ppm. Only N4-TP3 (0 to 0.5 feet) exceeded the PCB NRDCSRS of 1 ppm, with a concentration of 15 ppm. Analytical results also revealed concentrations of several metals and SVOCs above IGWSSL and NRDCSRS.

The debris at this location, where concentrations of PCBs exceeded 1.0 ppm but were less than 100 ppm, were crushed and used as backfill within the Copper Tank House Basement and Former Power House excavation areas in accordance with the approved 2011 SIP during the 2014 remediation activities. One post-excavation sample location from this AOC (PEX-121W) exhibited concentrations of PCBs above 100 ppm; therefore, additional materials were excavated for off-site disposal. The analytical results for the final post-excavation samples collected revealed PCB concentrations ranging from 0.1 ppm to 4.4 ppm. A surface cap will be installed where residual concentrations of PCBs exceed 1 ppm. The presence of paint cans identified at this AOC was addressed via excavation and off-site disposal and is the subject of a NJDEP-approved Remedial Action Work Plan (RAWP). The final area excavated is depicted on Figure 7. A summary of the post-excavation sample analytical results is included in Table 1.

### ***AOC D2-3: Crushed Building Debris at the South Fence Line***

At the close of plant demolition in the 1990s, excess crushed building debris from various former buildings was stockpiled along the southern property boundary for future beneficial reuse.

This material was previously sampled at 10 locations (DPS-1 through DPS-10) by JMZ for characterization and eventual on-site reuse. The crushed building debris was sampled by JMZ on June 16, 2006 for Toxicity Characteristic Leaching Procedure (TCLP) VOCs, TCLP SVOCs, PCBs, priority pollutant (PP) metals, TCLP metals, TCLP herbicides, TCLP pesticides, and total petroleum hydrocarbons (TPHC).

PCBs were detected in nine of the samples above the IGWSSL of 0.2 ppm. Six of the locations exceeded the NRDCSRS of 1.0 ppm. Only two locations exceeded 10 ppm, with the highest concentration of 52 ppm detected in sample DPS-9. Analytical results also revealed concentrations of several metals above the IGWSSL and NRDCSRS. Only two sample locations (DPS-9 and DPS-10) exhibited PCBs at a concentration above 10 ppm. As such, the

pile of crushed building debris that these samples were collected from was segregated and relocated for use as backfill within AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House. The remaining material from AOC D2-3, where PCB concentrations were below 10 ppm, has been used for backfill material elsewhere on site with the provision that a surface cap will be installed where residual concentrations of PCBs exceed 1 ppm.

#### ***AOC D4-1: Parting Plant Building Rubble***

The Parting Plant had occupied the same location from 1898 to 1976 for precious metals recovery. During plant shutdown, the Parting Plant was demolished and the rubble was placed into the southeast portion of the former Cooling Pond. This rubble was subsequently covered with clean soil by Bridgeview Management in the 1990s and planted with grass and trees.

The Parting Plant rubble area occupies approximately 24,000 square feet. During 2010 RI activities, four soil borings (D3-F1, E3-3, E3-4, and E4-1) were advanced through the rubble. Two samples were collected from each boring to vertically delineate the extent of fill material for target analyte list/target compound list with a forward library search of 30 compounds (TAL/TCL+30). The fill material generally consisted of building debris mixed with medium- to fine-grained sand with small gravel.

The analytical results for the eight samples of the Parting Plant rubble material revealed PCBs in four of the samples at concentrations ranging from 1.5 to 260 ppm. Only two samples exceeded 10 ppm for total PCBs. PCBs were not detected above the IGWSSLS of 0.2 ppm in the samples collected from the native soil immediately underlying the fill material. Native soils were generally encountered between 9.0 and 14.0 feet bgs.

During the 2014 remedial activities, the soils that exhibited concentrations of PCBs above 100 ppm were excavated for off-site disposal. The soils that exhibited PCB concentrations above 10 ppm but below 100 ppm, were excavated and used as backfill material within AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House. The analytical results for the final post-excavation samples collected revealed PCB concentrations ranging from 0.063 to 8.0 ppm. The final area excavated is depicted on Figure 7. A summary of the post-excavation sample analytical results is included in Table 1.

#### ***AOC D4-2: Copper Tank House Basement***

The 4.5-acre Copper Tank House was formerly evaluated for rehabilitation in the late 1990s. During the evaluation period, the basement of the building was filled with on-site debris and

some structural fill brought from off-site sources in preparation for pouring a concrete floor at grade level. The evaluation showed the Copper Tank House did not meet modern architectural standards and it was subsequently demolished. The filled basement was then covered with crushed building debris and road millings.

During 2010 RI activities, eight test pits/trenches were completed in this area to evaluate the fill materials present. The fill material generally consisted of building debris mixed with medium- to fine-grained sand with small gravel. The fill material was visually evaluated and screened with a photoionization detector (PID). One sample per test pit was collected to characterize the fill, with the exception of G3-TP1 which was sampled at two depths. Samples were biased towards accumulations of fill whose physical characteristics suggested material other than or inconsistent with site derived slag and building rubble or fill that has been affected by a secondary discharge. A total of nine samples were collected for TAL/TCL+30 analyses.

The analytical results for the nine samples of the Copper Tank House basement fill material revealed the presence of PCBs in all nine samples, ranging from 0.5 to 160 ppm. Analytical results also revealed concentrations of several metals and SVOCs above the IGWSSL and/or NRDCSRS. In 2013, additional samples were collected in the vicinity of this AOC, AOC D4-1: Parting Plant Rubble; AOC G2: Former Power House; and AOC D2-2: NL Industries Baghouse Rubble Outside Southern Fence Line in order to further define the PCB impacted areas as well as provide in-situ end points for remediation activities. A total of 137 samples were collected and analyzed for PCBs resulting in concentrations range from ND to 520 ppm.

During 2014 remediation activities, the soils that exhibited concentrations of PCBs above 100 ppm were excavated for off-site disposal. The analytical results for the final post-excavation samples collected revealed PCB concentrations ranging from 0.85 to 98.0 ppm. Material from other AOCs where concentrations of PCBs were greater than 10 ppm but less than 100 ppm was used as backfill. The final area excavated is depicted on Figure 7. A summary of the post-excavation sample analytical results is included in Table 1.

#### ***AOC D4-5: Laboratory Building Rubble***

In 1976, immediately after plant shutdown, ASARCO demolished the laboratory building because it was deteriorated. The building was pushed east, leveling the ground surface at the former building site and bladed to create a gentle slope to the east. The former laboratory site was leased to Koch Asphalt for redevelopment in 1980. The building rubble is buried under soil and

gravel outside the former Koch fence area and is overgrown with trees and brush. Large slabs of concrete are visible on the southern embankment of this fill.

During 2010 RI activities, two test pits were installed in this area (D1-TP1 and D1-TP2) to evaluate the fill materials present and to inspect for possible indications of discharges associated with former laboratory operations. The fill material from each test pit was sampled. No indications of discharges or fill material inconsistent with site-derived materials were encountered. One sample was also collected from each test pit from the native soils beneath the fill material. All four samples were analyzed for TAL/TCL+30 analyses.

Concentrations of PCBs were detected in the two samples of the rubble, ranging from 1.5 to 1.7 ppm. PCBs were not detected above the IGWSSL of 0.2 ppm in the samples collected from the native soil immediately underlying the fill material. Native soils were encountered between 3.5 and 5.0 feet bgs. Analytical results also revealed concentrations of several metals and SVOCs above the IGWSSL and/or NRDCSRS.

The building rubble at this location, which exhibited PCB concentrations above 1 ppm but less than 10 ppm, was excavated, crushed, and put back into place. A surface cap will be installed across the entire area of this AOC occupied by the debris. No additional excavation, sampling, or use restrictions were proposed for this AOC.

### ***AOC E1-1: Former Transformer Enclosure and Electrical Building***

This AOC is located at the west end of the Site, to the west of the former alloy plant. It formerly consisted of a fenced enclosure that contained four transformers and a brick building. The exterior transformers are no longer present nor is the exterior transformer mounting pad. The former enclosure has been covered with crushed brick and graded.

During 2010 RI activities, a series of four shallow test pits (B3-TP1 through B3-TP4) were completed to remove the crushed brick cover and expose the original surface within the formerly enclosed area. A single soil sample was collected from each test pit for diesel range organics (DRO) and PCB analyses. Samples were biased towards areas exhibiting staining, discoloration, or odors indicative of possible contamination. In general, the fill material consisted of wood, brick, and concrete fragments, which extended to 3.0 feet bgs where a concrete pad was encountered. No significant breaches or cracks in the concrete pad were identified. Each sample was analyzed for DRO and PCBs.

The analytical results revealed concentrations of PCBs ranging from ND at the laboratory MDL in sample B3-TP4 (1.5 to 2.0 feet) to 2.6 ppm in sample B3-TP1 (1.0 to 1.5 feet).

Only one sample at this location exhibited concentrations of PCBs above 1 ppm but less than 10 ppm. A surface cap will therefore be installed over the fill material surrounding the former enclosure at this location. No additional sampling or use restrictions were proposed for this AOC.

### ***AOC G2: Former Power House***

The Former Powerhouse was located immediately adjacent to the south side of the Copper Tank House. The Powerhouse used steam to generate the DC electrical current necessary for electrolytic metal refining operations. DC current was used in both the Copper Tank House and the Parting Plant. AC power was purchased from Public Service Electric and Gas. Later site maps show a group of rectifiers located to the west of the powerhouse. The presence of the rectifiers indicates that power conversion was performed on site at that time.

The powerhouse contained a series of steam-powered generators which consisted of a belt-driven dynamo connected to a steam engine. Steam was originally generated in a coal-fired boiler house and pumped to the Powerhouse. This was later replaced (about 1937) by an oil-fired boiler system. In 1976, the Powerhouse was taken out-of-service and the building was slated for demolition.

During 2010 RI activities, four test pits (G3-TP2, G3-TP3, H3-TP1, and H3-TP2) were installed through the location of the Former Powerhouse, which occupied approximately 30,000 square feet. The purpose of the test pits was to evaluate the fill materials present and to inspect for possible indications of impacts associated with the Former Powerhouse operations. One sample was collected from each test pit for TAL/TCL+30 analyses to characterize the fill material.

Concentrations of PCBs were detected ranging from 0.054 ppm to 23 ppm. Analytical results also revealed concentrations of several metals and SVOCs above the IGWSSL and/or NRDCSRS.

In 2013, additional samples were collected in the vicinity of this AOC, AOC D4-1: Parting Plant Rubble; AOC D4-2: Copper Tank House Basement; and AOC D2-2: NL Industries Baghouse

Rubble Outside Southern Fence Line, in order to further define the PCB impacted areas as well as provide in situ end points for remediation activities. A total of 137 samples were collected and analyzed for PCBs resulting in concentrations range from ND to 520 ppm.

During 2014 remediation activities, soils were encountered that exhibited concentrations of total PCBs above 100 ppm and were therefore excavated for off-site disposal. The analytical results for the final post-excavation samples collected revealed PCB concentrations ranging from non-detect (ND) to 70 ppm. The final area excavated is depicted on Figure 7. A summary of the post-excavation sample analytical results is included in Table 1. Material from other AOCs where concentrations of PCBs were greater than 10 ppm but less than 100 ppm was used as backfill to the extent possible.

## **Other Contaminants Present**

Other contaminants present include metals and SVOCs associated with site-wide fill and EPH associated with several specific AOCs. Concentrations of metals including mercury, aluminum, antimony, arsenic, beryllium, cadmium, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc have been detected in the soil and groundwater above their respective IGWSSL and GWQS. Mercury, antimony, arsenic, and lead have also been detected above their respective NJDEP NRDCSRS. Several PAHs including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenzo[a,h]anthracene, and indeno[1,2,3-cd]pyrene have been detected in the soil and groundwater above their respective NJDEP IGWSSL, NRDCSRS and GWQS.

EPH is also present in the soils in the vicinity of 35K AST Fuel Area-AOC A1-37 No. 6 Fuel Area-AOC D5, Total EPH concentration AOC A1-6: Three 10,528-gallon Light Oil Tanks in Tank House South of Lead Refinery/Parting Plant, AOC E5-5 Staining by Building 1, and AOC A1-36: Former Gas Producer House. Total EPH concentrations range from ND to 3,100 ppm.

The above-mentioned contaminants will remain on site and will be addressed via engineering (site-wide cap and groundwater containment system) and institutional controls (Deed Notice and CEA). The mobility of the PCBs is unlikely to be affected by these contaminants. Regardless, engineering and institutional controls which will be implemented for the Site will prohibit the migration of any PCB impacted material off site.

## **Current Site Environmental Conditions and the Extent of PCB Contamination**

Details of previous site investigations and each AOC identified can be found in the 2010 RIR, 2010 RAWP, 2013 RAWP, and 2017 RAWP Addendum. Each of these reports has been submitted to the NJDEP and can be provided upon request. As discussed under “Sources of PCBs and Historic Operations” section above, the presence of PCBs was confirmed during RI and delineation activities that were conducted at the Site. A SIP for the remediation of PCB contamination was submitted to the USEPA on November 4, 2011 SIP. In 2013, additional samples were collected in the vicinity of this AOC; AOC D4-1: Parting Plant Rubble; AOC D4-1: Parting Plant Rubble; and AOC D2-2: NL Industries Baghouse Rubble Outside Southern Fence Line in order to further define the PCB impacted areas as well as provide in situ end points for remediation activities which were completed in 2014. In accordance with the 2011 SIP, materials impacted by PCB concentrations greater than 10 ppm up to 100 ppm were relocated to AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House (which was the former proposed LOA), while materials impacted by PCB concentrations greater than 100 ppm were disposed of off site.

To date, 449 sample locations represent current soil conditions with respect to PCBs. These samples were collected during site/remedial investigation activities conducted in 2006 and 2010, delineation activities performed in 2011 and 2013, and post-excavation sampling in 2014. In 2017 and 2018, additional PCB delineation activities were completed in the vicinity of AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House (which was the former proposed LOA). A figure illustrating the current extent of PCB impacts is provided as Figure 2. A summary of the analytical results is provided as Table 1. All samples described in this application were all collected in accordance with the NJDEP guidance document "Coordination of NJDEP and USEPA PCB Remediation Policies," updated June 25, 2019 the NJDEP Field Sampling Procedures Manual dated August 2005, and the USEPA-approved November 2011 PCB SIP. In-situ post-excavation samples were collected in April and May of 2013. These sample locations were collected in order to further delineate PCB concentrations within the AOCs as well as serve as end-points for the 2014 remediation activities. An excavator was utilized to dig test pits from which soil samples were collected. During 2014 remediation activities, additional post-excavation samples were collected within the excavated areas in accordance with the approved SIP. Samples collected by First Environment were collected from discrete six-inch intervals (grab samples). No composite samples were collected. Samples collected from test pits/excavations were taken directly from the bottom or sidewalls of

the open excavation. All samples were placed in a laboratory cooler that was chilled to 4°C with a completed chain-of-custody. Samples were analyzed by Hampton-Clarke Veritech (HCV) of Fairfield, New Jersey, a NJDEP-certified laboratory. Samples were handled and analyzed in compliance with sample holding times, method detection limits, and precision and accuracy criteria for EPA Method 8082 analysis. No significant events or seasonal variations occurred that may have influenced sampling procedures or analytical results.

## **Other Site Conditions**

### ***Threatened or Endangered Species (Endangered Species Act)***

Findings of the Natural Heritage Request indicate that the Site lies within the Landscape Project 3.1 Species Based Patches for Rare Wildlife Species or Wildlife Habitat for bird species. The species include the Black-crowned Night Heron and the Osprey, which are classified in the State Protection Status as State Threatened species and Peregrine Falcon, a State Endangered species. The remaining species, the Glossy Ibis, Little Blue Heron and Snowy Egret are classified as species of Special Concern. The proposed remediation measures (capping and groundwater containment system) propose to protect these species by preventing contact.

### ***Historic or Culturally Sensitive Landmarks (National Historic Preservation Act)***

Proposed activities will not adversely affect a property which is listed or is eligible for listing on the New Jersey or National Register of Historic Places.

### ***Potentially Impacted Environments and Receptors***

No additional environments or receptors have been identified.

## **Sensitive Environments**

A freshwater wetlands inventory and assessment report was prepared for the Site by Eastern States Environmental Associates, Inc. in November of 2014 and was included in the permit application that was submitted to the NJDEP Division of Land Use and Regulation in February 2017. The Wetlands Report identified the mean high water/bulkhead of the Arthur Kill as state open water (SOW) and a small tidal wetland area of intermediate resource value along the southeast portion of the property.

As discussed under the “Proximity to Surface Water” section above, the Site waterfront is approximately 1,000 feet long along the Arthur Kill, which generally flows north-south. Cranes Creek, located on the adjacent property along the southern portion of the Site, is approximately



2,500 feet long and generally flows west-east. Cranes Creek is a manmade channel which serves as a storm drain and discharge point for groundwater from surrounding properties.

## **Sensitive Receptors**

The Site is located in an industrial/commercial area of Perth Amboy and will be redeveloped for industrial/commercial purposes only. As such, no sensitive receptors are in the vicinity of the Site.

## **Brief Summary of Comprehensive Site-Specific Conceptual Site Model and Data Quality Objectives**

The Conceptual Site Model (CSM) describes possible migration of potential contaminants through the primary pathways in soil, water, and utilities. Finally, human and ecological exposure pathways are described using: (1) information on chemicals found and their associated migration pathways, (2) understanding of each chemical's fate and transport characteristics, and (3) current and anticipated future uses of the Site.

- (1) PCBs have been identified in the fill/soils associated with eight AOCs on Site. Potential exposure routes include direct contact, ingestion, wind entrainment, leaching, stormwater overland flow, and underground utility corridors.
- (2) PCBs typically have a slow rate of adsorption and desorption between sedimentary particles and surrounding water. They tend to migrate very little from their initial release point and are not likely to leach from surface soils to subsurface soils and groundwater.
- (3) The Site will be redeveloped for commercial/industrial purposes only. The remediation/redevelopment plan includes engineering controls (site-wide cap and groundwater containment/treatment system) and institutional controls (Deed Notice and CEA). These controls will address each of the potential exposure routes listed above by eliminating the potential for direct contact and the migration of PCBs.

The Data Quality Objectives (DQO) includes the need to verify the removal of PCBs with concentrations greater than 500 ppm. Accordingly, following any soil removal, post-excavation sampling will be conducted in accordance with the sampling protocol and frequency as specified in the approved 2011 SIP Description of PCB "Cleanup Site."

As discussed, PCBs have been identified in eight AOCs at various locations on site and, as such, the "Cleanup Site" is essentially the property boundaries currently designated as Block 430 Lots 1.02 and 1.03 on the Middlesex County tax map. Materials exhibiting PCB concentrations above 10 ppm are generally limited to AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House which are centrally located on the Site and together comprise approximately 245,214 square feet.

There is no need for investigations or access beyond the property boundary to address PCB impacts associated with the Site.

## Description of PCB “Cleanup Site”

As discussed, PCBs have been identified in eight AOCs at various locations on site and, as such, the “Cleanup Site” is essentially the property boundaries currently designated as Block 430 Lots 1.02 and 1.03 on the Middlesex County tax map. Materials exhibiting PCB concentrations above 10 ppm are generally limited to AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House which are centrally located on the Site and together comprise approximately 245,214 square feet.

There is no need for investigations or access beyond the property boundary to address PCB impacts associated with the Site.

# Proposed Risk-Based PCB Cleanup Levels

## Description and Justification of PCB Cleanup Goals to be Applied

PCB material revealing concentrations of 500 ppm or less is proposed to remain in place on-site. Soil samples which revealed PCB concentrations between 100 ppm and 500 ppm and a single soil sample, DTP-100 (0.5-1.0) detected at a concentration of PCBs greater than 500 ppm, are located on the Lot 1.02 portion of the Site. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm and will remain on Lot 1.03. In the unanticipated event that post-excavation sampling reveals PCB concentrations up to 500 ppm on Lot 1.03, Perth Amboy 1160 will leave the PCB impacted material in place and addressed via capping and deed notice as described below.

PCBs have been identified in a total of eight AOCs; however, materials impacted by PCB concentrations greater than 10 ppm are generally limited to AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House which are centrally located on the Site on Lot 1.02. This area was originally proposed to be designated as a LOA; however, due to the central location and the proposed redevelopment plans, a LOA is not suitable at this location. Furthermore, NJDEP rules prohibit the relocation of PCB material to an area of the property where there are no PCBs impacts (“Like-on-Like” rule). As such, relocating the LOA to a more suitable area on Site is not an option as this time.

A single soil sample, DTP-100 (0.5-1.0), on Lot 1.02 detected a concentration of PCBs greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed for Lot 1.02 or 1.03. In the unanticipated event that post-excavation sampling reveals PCB concentrations greater than 500 ppm on Lot 1.03 or elsewhere on Lot 1.02, the PCB impacted material will be excavated and disposed of by Perth Amboy 1160 (if on Lot 1.03) or Bridge (if on Lot 1.02) as described below and in the Application and Cleanup Plan section of this report.

Bridge will address soil sample DTP-100 (0.5-1.0) by a 20-foot by-20-foot square excavation (400 square feet) with DTP-100 at the center. The excavation will extend to a depth of 4.0 feet bgs. A figure of the proposed excavation is provided as Figure 5. Post-excavation sampling will

be conducted by Bridge as described in the Sampling and Analysis Plan (SAP) section of this report.

As part of the site remediation/redevelopment plan, a site-wide cap will be installed consisting of a minimum of two feet of certified clean fill for landscaped areas, or six inches of asphalt for parking lots/roadways, or six inches of concrete for building slabs. Further, the grade of majority of the Site will be raised a minimum of four feet utilizing non-PCB impacted alternative fill as approved by the NJDEP. As such, areas impacted by total PCB concentrations greater than 10 ppm and less than 500 ppm will be capped with a minimum of four feet of alternative fill in addition to the cap components as described above. A groundwater containment system comprised of a cutoff wall and a PRC has been installed to address groundwater impacts associated with non-PCB contaminants (primarily metals). The groundwater containment system will also address any potential PCB impacts to groundwater. Finally, institutional controls will be implemented for the Site including a Deed Notice to ensure ongoing protectiveness of the site-wide cap and a groundwater CEA and associated groundwater monitoring which will continue in perpetuity. The Site will only be redeveloped and utilized for commercial and/or industrial purposes only.

In light of the planned remedial action and Site redevelopment plans, as described above, the proposed risk-based cleanup level is 500 ppm as remediation and development plans will not pose a risk to human health or the environment. Furthermore, based on discussions with the NJDEP, a maximum cleanup level of 500 ppm would be acceptable given the engineering and institutional controls as described above. To support the proposed cleanup level of 500 ppm, a Pathway Analysis Report (PAR) has been prepared by ARM Group, Inc. and is provided as Appendix A.

## Site Characterization and Data Gaps

### Detailed Comprehensive Site-Specific Conceptual Site Model and Data Quality Objectives

The Conceptual Site Model (CSM) describes possible migration of potential contaminants through the primary pathways in soil, water, and utilities. Finally, human and ecological exposure pathways are described using: (1) information on chemicals found and their associated migration pathways, (2) understanding of each chemical's fate and transport characteristics, and (3) current and anticipated future uses of the Site.

#### ***Potential Sources and Migration Pathways***

Sources of contamination include past industrial operations by ASARCO and others. Details of previous site investigations and each AOC identified can be found in the 2010 RIR, 2010 RAWP, 2013 RAWP, and 2017 RAWP Addendum. Each of these reports has been submitted to NJDEP and can be provided upon request. PCBs have been identified in the soils in eight AOCs and a description of each of these eight AOCs is discussed under the "Sources of PCBs and Historic Operations" section, above. As detailed in the PAR, a complete exposure pathway from the contaminated medium to the potential receptors must exist in order for exposure to humans or ecological receptors to occur. The following potential exposure routes and primary chemical migration pathways have been identified:

- Direct dermal contact with surface soil, subsurface soils, surface water, and groundwater.
- Ingestion of soil and subsurface soils.
- Wind entrainment of dust-size particles from surface soils to the atmosphere or to surface water.
- Leaching from soil to groundwater by infiltrating precipitation.
- Migration from groundwater to surface water through direct discharge.
- Transport of soil or sediment to surface water with overland flow of stormwater.
- Transport of contaminants throughout the site via underground utility corridors.

PCBs typically have a slow rate of adsorption and desorption between sedimentary particles and surrounding water. They tend to migrate very little from their initial release point and are not likely to leach from surface soils to subsurface soils and groundwater. As discussed in the "Description and Justification of PCB Cleanup Goals to be Applied" section above, engineering controls (site-wide cap and groundwater containment/treatment system) and institutional

controls (Deed Notice and CEA) will be implemented as part of the Site remediation/redevelopment plan. These controls will address each of the potential exposure routes listed above by eliminating the potential for direct contact and the migration of PCBs.

### ***Data Quality Objectives (DQO)***

DQO have been developed in accordance with the EPA Guidance on Systematic Planning Using the Data Quality Objectives Process (February 2006). Seven steps, as presented in the guidance document, are as follows:

1. The problem: verification for removal of PCBs greater than 500 ppm.
2. Goals of the study: characterize post-excavation conditions.
3. Information inputs: collect and analyze post-excavation soil samples.
4. Boundaries of the study: excavations where PCBs greater than 500 ppm have been removed.
5. Analytic approach: samples will be collected in accordance with previously approved sampling frequency and analyzed for PCBs.
6. Performance or acceptance criteria: samples will be collected in accordance with the sampling protocol as specified in the approved 2011 SIP.
7. Plan for obtaining data: following any soil removal, post-excavation sampling will be conducted to characterize post-remediation conditions and verify that materials impacted by PCB concentrations greater than 500 ppm have been removed.

## **Sampling and Analysis Plan (SAP)**

### ***Justification for Sampling Approaches to be Followed***

As previously stated, the objective of the Site, with respect to PCBs, is to leave in place materials impacted by PCBs at concentrations less than or equal to 500 ppm and removal of any material impacted by PCBs at concentrations greater than 500 ppm. PCBs were detected in one sample (sample DTP-100) on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed. Following the soil removal, post-excavation sampling will be conducted to characterize post-remediation conditions and verify that materials impacted by PCB concentrations greater than 500 ppm have been removed.

In order to achieve this goal, all sampling will be conducted in accordance with the NJDEP "Coordination of NJDEP and USEPA PCB Remediation Policies" dated March 3, 2011. The sampling frequency will be conducted as specified in the NJDEP Technical Guidance for

Remedial Action Verification Sampling for Soil dated March 2015; in accordance with 40 CFR Part 761, Subpart O; and in accordance with the sampling protocol as specified in the approved 2011 SIP to document the effectiveness of the remedial action. Specifically, for excavations less than 20 feet in perimeter, at least one bottom and one sidewall sample will be collected biased in the direction of surface runoff. For excavations 20 to 300 feet in perimeter, one sample will be collected from the bottom of each sidewall for every 30 linear feet of sidewall, and one sample from the excavation bottom for every 400 square feet of bottom area. The final number and locations of post-excavation soil samples will be determined in the field based on the final excavation dimensions and biased to the suspected location of greatest contamination.

Please note that in order to better comply with EPA PCB sampling requirements, the number of base samples is proposed to be increased from one sample per 900 square feet of excavation (as specified in the “NJDEP Technical Guidance for Remedial Action Verification Sampling for Soil” document) to one base sample per 400 square feet of excavation. This sampling frequency is consistent with previous SIP approvals obtained by our office including the original Perth Amboy 1160 LLC SIP; Veterans Field SIP; and ELT Harmony, LLC, SIP. This sampling frequency affords a feasible approach to effectively provide a complete verification sampling program.

### ***Description of Sampling Methods for PCB Remediation Waste***

Perth Amboy 1160 will be responsible for all subsurface sampling work on the Lot 1.03 portion of the Site. Bridge will be responsible for all subsurface sampling work on the Lot 1.02 portion of the Site. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed.

All subsurface work will be conducted in a manner that produces reliable information of subsurface conditions. A degreed hydrogeologist, geologist, engineer, or equivalent will supervise all soil sampling procedures. Sampling gloves will be worn during all sample collection activities.

Soil samples will be collected from discrete six-inch intervals (grab samples) directly from the bottom or sidewalls of the excavation/test pits and samples will be transferred into dedicated glass jars via pre-cleaned plastic scoops. No composite samples will be collected. All samples



will be placed in a laboratory cooler chilled to 4°C with a completed chain-of-custody. Samples will be analyzed by a NJDEP-certified laboratory and handled and analyzed in compliance with sample holding times, method detection limits, and precision and accuracy criteria for EPA Method 8082A analysis.

All equipment utilized in the remediation will be decontaminated in accordance with 40 CFR § 761.79, including swabbing surfaces that have contacted PCBs with acetone and a double wash/rinse as defined in subpart S. All on-site storage of PCB remediation waste will be in accordance with 40 CFR § 761.65(c)(9).

### ***Cleanup Levels and Detection Limits***

The proposed cleanup level for this Site is 500 ppm. Reporting limits will be at or below regulatory criteria or screening level (NJDEP IGWSSL and RDCSRS of 0.2 ppm), in accordance with NJDEP Data of Known Quality Protocols Technical Guidance document dated April 2014. This detection limit will allow for both the comparison of the analytical results for both the cleanup level as well as the standard regulatory criteria.

### ***Description of Methods and Procedures***

#### **Laboratory Methods for Sample Extraction and Procedures for Cleanup of Sample Extracts**

Samples will be analyzed by a NJDEP-certified laboratory and handled and analyzed in compliance with sample holding times, method detection limits, and precision and accuracy criteria for PCB EPA Method 8082A via extraction Method 3550B analysis.

#### **Sample Collection Methods for Cleanup Verification Samples**

Soil samples will be collected from discrete six-inch intervals (grab samples) directly from the bottom or sidewalls of the excavation. The samples will be placed in laboratory-supplied glassware and will have the following information recorded on it:

- Job Name and Location,
- Sample Location,
- Time and Date of Sampling,
- Depth of Sampling,
- Analysis,
- Boring Number.

The sample container will then be placed in a cooler and kept at 4°C until transported to the laboratory.

## **Types of Quality Control Samples That Will Be Used for the Analyses**

### **Field Duplicates**

Field Duplicate samples are collected to evaluate the field laboratory's performance by comparing two separate samples that were collected from the same location. The number of duplicates will, at a minimum, equal five percent of the samples collected for that media. For each duplicate, a pre-cleaned plastic scoop will be utilized to transfer a six-inch interval of soil from the acetate liner to a properly decontaminated stainless steel mixing bowl. The recovered soil will then be thoroughly mixed and placed into two separate glass jars. The duplicate sample will be labeled as "DUP" and will include the data of collection.

### **Field Blanks**

Field Blanks will be collected in accordance with the 2005 NJDEP Field Sampling Procedures Manual and as a mechanism of control on sample equipment handling, preparation, storage, and shipment. Field Blanks will be collected for PCB analysis and will be performed at a rate of 10 percent of the total number of PCB samples collected throughout the remediation project, not to exceed one sample per day.

Field Blank water will be analyte free water provided by the analytical laboratory. The Field Blank water will be transported to the field in bottles that are of the same type as that which is used to contain the Field Blank sample. All Field Blank and sample containers will be transported to and from the field and handled in a manner that is identical, in every practical aspect, to the manner in which environmental samples and sample containers are handled.

### ***Tables and Figures Summarizing the Number/Location of Samples***

The final number and locations of post-excavation soil samples will be determined in the field based on the final excavation dimensions and biased to the suspected location of greatest contamination. Based on current Site data, one soil sample, DTP-100 (0.5-1.0) exhibited concentrations of total PCBs exceeding 500 ppm.

### ***Description of PCB Aroclors That Will be Used for Site Characterization and/or Cleanup Verification***

Total PCBs will be used for site characterization and cleanup verification. Specific Aroclors identified at the Site primarily consist of Aroclor-1254 with some Aroclor-1242 and fewer Aroclor-1260.

### ***Description of Laboratory Analytical Data Validation Methods***

Precision, accuracy, representativeness, comparability, completeness, and sensitivity of the laboratory data will be evaluated based upon adherence to sample holding times and the analysis of QA/QC samples (i.e., duplicates, spikes, and blanks). Data validation of non-CLP full data deliverables will be based upon method-specific QC criteria similar to the criteria of Section 8 of the USEPA 600 series methods provided in 40 CFR Part 136.

### **Vertical and Horizontal Extent of PCB Contamination**

Soil samples used to characterize the Site with respect to PCBs were collected during 2006 preliminary assessment activities, 2010 RI activities, 2011 delineations, 2013 delineation/in-situ post-excavation samples, 2014 post-excavation samples, and 2017/2018 delineation samples as shown on Figure 2.

As discussed under the “Sources of PCBs and Historic Operations” section above, PCB impacted material was identified in eight AOCs during 2010 RI sampling activities. Remedial activities were conducted in accordance with the approved 2010 SIP which relocated materials impacted by PCB concentrations greater than 10 ppm up to 100 ppm to AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House (which was the former proposed LOA). As such, PCBs at concentrations above 10 ppm are primarily located at AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House while PCBs at concentrations of 10 ppm and below remain in place at the respective AOCs. Post-excavation samples were collected in accordance with the sampling protocol as specified in the approved 2012 SIP. Specifically, for excavations 20 to 300 feet in perimeter, one sample was collected from the bottom of each sidewall for every 30 linear feet of sidewall, and one sample from the excavation bottom for every 400 square feet of bottom area. Final post-excavation results revealed total PCB concentrations of 10 ppm or less.

In 2017 and 2018, additional delineation activities were conducted in the vicinity of AOC D4-2: Copper Tank House Basement and AOC G2: Former Power House to further characterize PCB impacts in this area in light of the proposed redevelopment plans. Soil samples were collected at nodes along a grid pattern established on 50-foot centers with additional step outs collected at 15 to 20 feet intervals. The investigated area covers approximately 245,214 square feet. The extent of PCB impacts were delineated to samples revealing a total PCB concentration of 10 ppm or less in all directions with the exception of several samples along the northern extent

and a few samples along the southern extent (which were delineated up to 100 ppm). The vertical extent of the contamination varies from near surface (0.5-1.0 feet bgs) to 9.5-10.0 feet bgs.

In 2018, an additional 16 soil samples were collected at eight locations along the northern property boundary in order to assess the soil conditions for potential relocation of the PCB impacted material. Samples were spaced linearly at 200-foot spacing along the proposed access road as shown on Figure 2. Two samples were collected at each location at the surface (0.0-0.5 feet bgs) and 2.0-2.5 feet bgs. The sample results revealed concentrations of PCBs above the NJDEP IGWSSL/RDCSRS of 0.2 ppm in five samples at three locations (NAC-1, NAC-2 and NAC-7), four of which exceeded the NRDCSRs of 1.0 ppm. One sample (NAC-7 (0-0.5')) revealed concentrations of PCBs above 10 ppm.

A depiction of all sample locations that remain on site is provided as Figure 2 and a depiction of the 2017/2018 soil delineation is proved as Figure 8. A summary of the analytical results is provided as Table 1. Samples which revealed PCB concentrations greater than 100 ppm are located on the Lot 1.02 portion of the Site. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm.

In order to assess the leachability of the PCBs identified in the soils, synthetic precipitation leaching procedure (SPLP) was utilized in accordance with “Development of Site-Specific Impact to Groundwater Soil Remediation Standards Using the Synthetic Precipitation Leaching Procedure” guidance document dated November 2013. A total of six soil samples were re-collected from within the 2017/2018 delineation area and submitted for SPLP analysis. Selected samples were of the highest contaminant concentrations and representative of the different characteristics of the donor material that would affect the mobility of any given contaminant into groundwater (e.g., pH, soil texture, composition of fill).” Total PCB concentrations for the six samples that were re-collected range from 50 ppm to 250 ppm. The leachate concentration was ND in each of the six soil samples that were submitted for SPLP analysis.

In order to assess groundwater conditions with respect to PCBs, groundwater samples were collected in October 2018 and January 2019. All sampling activities were performed in accordance with the NJDEP Field Sampling Procedures Manual dated August 2005 and the

NJDEP Groundwater Technical Guidance for Site Investigation, Remedial Investigation, and Remedial Action Performance Monitoring dated April 3, 2012. The groundwater samples were transferred into laboratory containers using dedicated Teflon bailers. All samples were placed into a cooler with ice and submitted to Hampton Clarke-Veritech (HCV) of Fairfield, New Jersey, a NJDEP-certified laboratory (No. 07010), under proper chain-of-custody procedures for analysis for PCBs.

Concentrations of PCBs were not detected in any of the samples with the exception of samples collected from MW-23, which revealed concentrations of PCB at 0.38 parts per billion (ppb) in January, and MW-12SR which revealed a concentration of total PCBs at 0.46 ppb in October, and 0.42 ppb in January, which is below the NJDEP Groundwater Quality Standard (GWQS) of 0.5 ppb. Monitoring well locations are provided on Figure 3. A summary of the groundwater analytical results is provided as Table 2.

## **Identification and Description of Data Gaps**

The vertical and horizontal extent of the PCB contamination has been defined to extent practical based on the Site conditions consisting of pockets of subsurface building rubble/fill material historically utilized as fill at the Site. Generally, PCB concentrations have been delineated to total PCB concentrations of less than 10 ppm; however, in several areas it has been delineated to total PCB concentrations of less than 100 ppm. PCB impacts are primarily associated with former buildings that were historically used as fill on site; therefore, it is unlikely that PCB contamination has migrated off site. As previously discussed, engineering and institutional controls will be implemented at the Site and include a site-wide cap, groundwater cutoff/PRC system, Deed Notice, and CEA. In light of this information, continuing delineation beyond the proposed cleanup level of 500 ppm does not appear to be necessary. As such, no further action is proposed.

## Application and Cleanup Plan

### Inclusion and Notification of PCB Activity Form required in 40 CFR 761, Subpart K

A Notification of PCB Activity Form is attached as Appendix C.

### Description of Storage for Disposal Activities

Bridge will oversee all PCB related activities pertaining to Lot 1.02 portion of the Site; Perth Amboy 1160 will oversee all PCB related activities pertaining to Lot 1.03 portion of the Site. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed for Lot 1.02. All PCB samples located on the Lot 1.03 portion of the Site revealed concentrations below 100 ppm, as such, no excavation or soil sampling is proposed for Lot 1.03. In the unanticipated event that post-excavation sampling reveals PCB concentrations greater than 500 ppm on Lot 1.03 or elsewhere on Lot 1.02, the PCB impacted material will be excavated and disposed of by Perth Amboy 1160 (if on Lot 1.03) or Bridge (if on Lot 1.02) as described below.

Excavated material (i.e., material above 500 ppm) will be containerized in roll-off bins and/or cubic yard (or cubic meter) boxes and kept on site pending waste characterization and profiling. Containers of PCB remediation waste with PCBs > 500 ppm will be marked with large PCB mark-ML labels as required by 40 CFR 761.45 and identified as remediation derived waste soil pending analysis. The transportation and disposal of the PCB contaminated soils will be tracked under hazardous waste manifest as instructed under 40 CFR 761, Sections 207 and 208.

Description of Disposal Methods In accordance with 40 CFR 761.61(a)(5)(i)(B)(2)(iii), soils excavated for off-site disposal that exhibit PCB concentrations above 500 ppm will be disposed of in a RCRA Sec. 3004 or 3006 permitted hazardous waste landfill. Soils that exhibit PCB concentrations of 500 ppm or below will remain on site.

## **Description and Evaluation of Cleanup Alternatives**

The following is a description and evaluation of cleanup alternatives. Bridge will oversee all PCB related activities pertaining to Lot 1.02 portion of the Site as described below; Perth Amboy 1160 will oversee all PCB related activities pertaining to Lot 1.03 portion of the Site as described below. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No other excavation or soil sampling is proposed.

### ***Soils***

#### **Preferred Cleanup Alternative**

As defined under Tool 2: PCB Sites Cleanup Framework of the EPA PCB FAST document, alternate cleanup approaches are alternatives identified in the event that the cleanup objectives are unable to be met. Alternatives could include capping PCBs in place when it is infeasible to reach desired cleanup goal, Deed Notices, etc.

As discussed above, the current cleanup objective is to excavate/dispose of PCB materials greater than 500 ppm and to leave in place PCB materials with concentrations less than or equal to 500 ppm with engineering controls (site-wide cap and groundwater treatment system) and institutional controls (Deed Notice and CEA). As discussed in the attached Pathway Analysis Report, the proposed remedy of capping and institutional controls will address all potentially complete exposure pathways for future workers. By eliminating the potential for direct contact exposure to impacted soil, sensitive habitats (wetlands, surface waters, etc.) will also be protected. Furthermore, the groundwater treatment system which has been installed in accordance with the RAWP, will prohibit the migration of groundwater contaminants from migrating off site.

#### **Cleanup Verification Sampling Methods and SAP**

Confirmation sampling for soil excavations and a SAP have been provided under the “Sampling and Analysis Plan” section, above.

#### **Methods for Evaluating Cleanup Verification Sample Results**

If total PCBs are present at concentrations greater than 500 ppm, the excavation will be expanded three feet laterally and expanded one foot vertically unless refusal is met due to existing concrete slab of the basement of the former site buildings. The excavation will continue

to be expanded in this manner until verification sample results reveal total PCB concentrations of 500 ppm or less.

### **Methods for Demonstrating Compliance with Cleanup Goals**

The cleanup goal will be demonstrated through confirmation samples.

### **Engineering Controls, Long-term Inspections, Maintenance, and Repairs**

Engineering controls at the Site include a site-wide cap and a cutoff wall/PRC funnel gate system to address groundwater contamination. The site-wide cap will consist of the buildings, driveways, parking areas, and landscaped areas associated with the redevelopment of the property. A figure depicting proposed redevelopment plans, including the cutoff wall/PRC, is provided as Figure 4.

Engineering and institutional control monitoring will be completed and submitted to NJDEP and EPA on a biennial basis. Bridge will oversee all PCB related monitoring activities pertaining to Lot 1.02 portion of the Site as described below; Perth Amboy 1160 will oversee all PCB related monitoring activities pertaining to Lot 1.03 portion of the Site as described below. Monitoring will include an inspection and certification that the engineering and institutional controls are being properly maintained and continue to be protective of public health and safety and of the environment.

A groundwater monitoring program will also be established to demonstrate the hydraulic control and the effectiveness of the PRCs. Perth Amboy 1160 will oversee all PRC related groundwater monitoring activities as described below. The monitoring program will consist of establishing a baseline through quarterly gauging and sampling of six monitoring wells installed on the upgradient, midpoint, and downgradient side of the PRC for a two-year period after installation of the funnel-and-gate system. In addition to the collection of field parameters, the groundwater will be analyzed by a NJDEP certified laboratory for TAL Metals and other parameters to monitor the effectiveness of the reducing environment (sulfate, sulfide, and total organic carbon). Following the establishment of baseline groundwater data, the monitoring program will be reduced in frequency to once annually. The number of sampled wells may also be reduced based on an evaluation of the stability of COC concentrations. The water-level monitoring will also be reduced to semiannual. It is expected that the groundwater monitoring program will continue into perpetuity, with frequency of sampling and gauging events revisited periodically, if necessary, based on analytical results or field observations. Groundwater



monitoring data will assist in identifying when the PRC media requires replacement. Reporting will be conducted periodically in accordance with the NJDEP Remedial Action Permits for Groundwater Guidance (Version 0.0, 2/24/2010).

In addition, MW-23 and MW-12SR, which revealed concentrations of PCBs close to but less than the regulated standard of 0.5 ppb, will be sampled and analyzed for PCBs in the first year of sampling.

Financial assurance will be established to ensure funds exist for long-term operation and maintenance of the engineering controls. Perth Amboy 1160 will be responsible for the establishment of all financial assurance obligations associated with work on the Lot 1.03 portion of the Site. Bridge will be responsible for the establishment of all financial assurance obligations associated with work on the Lot 1.02 portion of the Site. The Financial assurance will designate EPA (LCRD Division Director) as the beneficiary.

### **Land Use Covenants**

An institutional control in the form of a Deed Notice will restrict the use of the property to commercial/industrial purposes (i.e., not residential). The Deed Notice will provide information regarding the Site, presence of contaminants and compliance monitoring requirements, including the requirement to maintain the cap in perpetuity. In accordance with 40 CFR § 761.61(a)(8)(i)(B), a certification that the Deed Notice has been recorded will be submitted to the EPA Regional Administrator upon completion of the remedy. Perth Amboy 1160 will be responsible for the recordation of the Deed Notice and submission of the Deed Notice to EPA for work on the Lot 1.03 portion of the Site. Bridge will be responsible for the recordation of the Deed Notice and submission of the Deed Notice to EPA for work on the Lot 1.02 portion of the Site.

A CEA will also be established site wide to address groundwater contamination at the Site. This is to ensure that the uses of the aquifer are restricted.

### ***Stormwater Runoff Collection Systems***

A description of the current and proposed stormwater runoff at the Site is presented under the “Stormwater Runoff and Any Collection System and Discharges to Surface Water and Other Areas” section above. No sampling and analysis of sediments in stormwater drains and/or soils around storm drain inlets is proposed. The installation of the cap and redevelopment of the

property will prohibit PCB-impacted material from coming into contact with stormwater and will therefore be protective of surrounding receptors. Prior to capping, limited areas where PCB concentrations exceed 500 ppm will be excavated and disposed of off site. Accordingly, excavated material will be containerized in roll-off bins and/or cubic yard (or cubic meter) boxes, and appropriate erosion and sediment control measures will be implemented to prohibit contact and/or migration of PCB impacted material through stormwater discharges. Bridge will oversee all PCB related excavation and disposal activities pertaining to Lot 1.02 portion of the Site. Perth Amboy 1160 will oversee all PCB related excavation and disposal activities pertaining to Lot 1.03 portion of the Site.

### ***Surface Water***

As discussed under the “Proximity to Surface Water” section above, the Arthur Kill is located along the eastern portion of the Site and Cranes Creek is located on the adjacent property along the southern portion of the Site. The limited excavation areas are not in close proximity to either of these waterbodies. As such, no additional measures for surface water protection will be implemented beyond appropriate erosion and sediment control measures.

### ***Buildings and Non-Building Structures***

No buildings or structures currently exist on site as all former buildings have been demolished in anticipation of Site redevelopment. Future site development plans include the construction of industrial and/or commercial buildings (warehouse, office space, etc.). As discussed in the attached PAR, a potential exists for future worker exposure through migration of vapor into proposed future buildings on the Site.

Although this pathway is considered insignificant, due to the low volatility of PCBs and the expected attenuation from the proposed soil cap and building floor slab, sub-slab soil gas (SSSG) sampling will be conducted following the construction of the building slab to verify post-construction soil gas concentrations and the insignificance of this pathway. SSSG sampling will be targeted towards where the proposed building slab overlaps the soil containing PCBs greater than 10 ppm up to a concentration of 500 ppm.

The proposed SSSG sampling will be conducted following the removal of soil containing PCBs greater than 500 ppm, following soil grading and filling activities that are intended to raise the Site grade to an elevation of 21 feet above mean sea level, and following the construction/ placement of the proposed building slab. Specific procedures for collection of the SSSG

samples will be detailed in a SSSG Sampling Plan and Quality Assurance Project Plan (QAPP) following the Uniform Federal Policy (UFP) QAPP manual and worksheets to be submitted to the EPA for review and approval before the SSSG sampling is conducted.

Based on the total area of overlap of approximately 290,000 square feet and using the NJDEP's May 2021 Vapor Intrusion Technical Guidance (VITG), a total of 10 SSSG samples will be collected as outlined in Table 3-2 of the VITG for buildings ranging in size from 250,001 to 1,000,000 square feet. These samples will be collected from pre-installed sampling ports as part of the planned vapor barrier and sub-slab depressurization system (exact locations to be determined during the design of the vapor barrier system, however, sample locations will be biased on top of or near areas with higher concentrations of PCBs).

As discussed under the "Soils" sub-section above, the site-wide cap will partially consist of future Site buildings associated with the redevelopment of the property. As such, the Deed Notice will include the slabs of future Site buildings as a component of the cap that requires maintenance and repair as needed based on biennial inspections.

## Decontamination of Tools, Equipment, and Movable Equipment

Bridge will oversee all PCB related decontamination activities pertaining to Lot 1.02 portion of the Site; Perth Amboy 1160 will oversee all PCB related decontamination activities pertaining to Lot 1.03 portion of the Site. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No excavation or sampling is proposed for Lot 1.03.

The selected contractor, under the direct supervision of First Environment and/or Excel Environmental Resources, Inc., will follow procedures outlined in 40 CFR 761.79 regarding the decontamination of remedial equipment. Specifically, the contractor will follow the procedures listed in 40 CFR 761.79(c)(2) which states that:

“Any person decontaminating movable equipment contaminated by PCBs, tools, and sampling equipment may do so by: (i) Swabbing surfaces that have contacted PCBs with a solvent; (ii) A double wash/rinse as defined in subpart S of this part; or (iii) Another applicable decontamination procedure in this section.”

All materials used for decontamination will be disposed of as “decontamination waste and residues” according to 40 CFR 761.79(g).

## **Waste Disposal – PCB Remediation Waste and Cleanup Wastes**

Bridge will oversee all PCB waste disposal activities pertaining to Lot 1.02 portion of the Site; Perth Amboy LLC will oversee all PCB waste disposal activities pertaining to Lot 1.03 portion of the Site. PCBs were detected in one sample on Lot 1.02 at a concentration greater than 500 ppm. Accordingly, Bridge will be responsible for the excavation, disposal, and post-excavation sampling of the material represented by this sample. No excavation or sampling is proposed for Lot 1.03.

All wastes generated from the planned removal action excavations will be non-liquid soil with small amounts of miscellaneous debris (rags, PPE, etc.). Soil will be contained in roll-off bins and cubic yard boxes. Containerized soils will be kept on site for final profiling and disposal site approval. Equipment will be decontaminated with wet wipes and a minimal amount of liquid detergent, as necessary, with wipes and rinsate placed into soil containers.

In accordance with 40 CFR 761.61(a)(5)(i)(B)(2)(iii), soils excavated for off-site disposal that exhibit concentrations above 500 ppm will be disposed of in a RCRA Sec. 3004 or 3006 permitted hazardous waste landfill. Soils that exhibit concentrations of 500 ppm or below will remain on site. The transportation and disposal of the PCB contaminated soils will be tracked under hazardous waste manifest as instructed under 40 CFR 761, Sections 207 and 208.

# PCB Cleanup Completion Report

Upon the completion of remedial action activities at the Site, including the redevelopment of the property/installation of the site-wide cap, a PCB Cleanup Completion Report will be submitted to the EPA. A general outline of the PCB Cleanup Completion Report is presented below:

## REPORT

- 1.0 INTRODUCTION
- 2.0 SITE BACKGROUND
- 3.0 REMEDIAL ACTION ACTIVITIES AND RESULTS
  - 3.1 SITE PREPARATION
  - 3.2 SOIL EXCAVATION
  - 3.3 CONFIRMATION SAMPLING
  - 3.4 AIR MONITORING
  - 3.5 BACKFILLING
  - 3.6 WASTE CHARACTERIZATION AND DISPOSAL
  - 3.7 WASTE DISPOSAL
  - 3.8 SITE-WIDE CAP

## 4.0 SUMMARY

## FIGURES

- 1. SITE LOCATION MAP
- 2. FINAL EXCAVATION AREAS AND CONFIRMATION SAMPLING LOCATIONS
- 3. SITE-WIDE CAP

## APPENDICES

- A. USEPA APPROVALS (TSCA PCB RISK BASED CLEANUP, OTHER)
- B. CONFIRMATION SAMPLING RESULTS
- C. PERIMETER AIR MONITORING RESULTS
- D. OCCUPATIONAL EXPOSURE MONITORING REPORT
- E. SOIL BIN AND BOX CONTENTS CONFIRMATION SAMPLING RESULTS
- F. WASTE PROFILE SHEETS
- G. WASTE MANIFESTS- HAZARDOUS, TSCA, NON-HAZARDOUS
- H. FILED DEED NOTICE

Bridge will provide the PCB Cleanup Completion Report pertaining to Lot 1.02 portion of the Site; Perth Amboy LLC will provide the PCB Cleanup Completion Report pertaining to Lot 1.03 portion of the Site.

## Land Use Restrictions

A model Deed Notice prepared by the NJDEP will be utilized for the preparation of the land use restriction for the Site. Subsequent to the redevelopment of the property, two Deed Notices will be completed and filed with Middlesex County. Bridge will complete and file a Deed Notice for the Lot 1.02 portion of the Site; Perth Amboy LLC will complete and file a Deed Notice for the Lot 1.03 portion of the Site. The Deed Notices will include a detailed property description (Exhibit A to the Deed Notice), a description of the type, concentrations, specific location of contamination, and the existing engineering controls (Exhibit B to the Deed Notice), a description of institutional/engineering controls and proposed maintenance program (Exhibit C to the Deed Notice). A copy of the model Deed Notice that will be used has been included as Appendix D.

A certified full copy of the recorded Deed Notices (including all exhibits and attachments) will be submitted to EPA once available.



## TABLES

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				<i>ppm</i>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>NA</b>	<b>NA</b>
<b>NJDEP IGWSRS</b>				<i>ppm</i>	<b>NA</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>NA</b>	<b>NA</b>
DPS-1	745597	6/16/2006	Soil	<i>ppm</i>	<b>0.99</b>	ND	ND	ND	ND	ND	<b>0.99</b>	ND	ND	ND
DPS-2	745598	6/16/2006	Soil	<i>ppm</i>	<b>1.1</b>	ND	ND	ND	ND	ND	<b>1.1</b>	ND	ND	ND
DPS-3	745599	6/16/2006	Soil	<i>ppm</i>	<b>3.1</b>	ND	ND	ND	ND	ND	<b>3.1</b>	ND	ND	ND
DPS-4	745600	6/16/2006	Soil	<i>ppm</i>	<b>0.97</b>	ND	ND	ND	ND	ND	<b>0.97</b>	ND	ND	ND
DPS-5	745601	6/16/2006	Soil	<i>ppm</i>	<b>4.1</b>	ND	ND	ND	ND	ND	<b>4.1</b>	ND	ND	ND
DPS-6	745602	6/16/2006	Soil	<i>ppm</i>	<b>2.5</b>	ND	ND	ND	ND	ND	<b>2.5</b>	ND	ND	ND
DPS-7	745603	6/16/2006	Soil	<i>ppm</i>	<b>0.42</b>	ND	ND	ND	ND	ND	<b>0.42</b>	ND	ND	ND
DPS-8	745604	6/16/2006	Soil	<i>ppm</i>	0.17	ND	ND	ND	ND	ND	0.17	ND	ND	ND
A5-3 (2-2.5)	AC50749-003	4/2/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
F5-1 (2.5-3')	AC50800-007	4/6/2010	Soil	<i>ppm</i>	0.048	ND	ND	ND	ND	ND	0.048	ND	ND	ND
G4-2 (2-2.5')	AC50800-009	4/6/2010	Soil	<i>ppm</i>	0.18	ND	ND	ND	ND	ND	0.18	ND	ND	ND
D3-F1 (5-5.5)	AC50822-007	4/7/2010	Soil	<i>ppm</i>	<b>0.44</b>	ND	ND	ND	ND	ND	<b>0.44</b>	ND	ND	ND
D3-F1 (9-9.5)	AC50822-006	4/7/2010	Soil	<i>ppm</i>	0.063	ND	ND	ND	ND	ND	0.063	ND	ND	ND
E3-3 (12-12.5)	AC50822-008	4/7/2010	Soil	<i>ppm</i>	<b>1.5</b>	ND	ND	ND	ND	ND	<b>1.5</b>	ND	ND	ND
E3-3 (14-14.5)	AC50822-009	4/7/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
K3-2 (5-5.5)	AC50935-010	4/13/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
K4-2(6.5-7)	AC51053-013	4/16/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B6-1 (2.0-2.5)	AC51072-010	4/18/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B6-1 (7.0-7.5)	AC51072-011	4/18/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
I4-8 (6.5-7)	AC51142-006	4/21/2010	Soil	<i>ppm</i>	0.15	ND	ND	ND	ND	ND	0.15	ND	ND	ND
I4-9 (8.5-9)	AC51142-005	4/21/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B3-TP1 (1.0-1.5')	AC51524-001	5/7/2010	Soil	<i>ppm</i>	<b>2.6</b>	ND	ND	ND	ND	ND	<b>2.6</b>	ND	ND	ND
B3-TP2 (0.5-1.0')	AC51524-002	5/7/2010	Soil	<i>ppm</i>	<b>0.35</b>	ND	ND	ND	ND	ND	ND	ND	<b>0.35</b>	ND
B3-TP3 (0.5-1.0')	AC51524-003	5/7/2010	Soil	<i>ppm</i>	<b>0.22</b>	ND	ND	ND	ND	ND	<b>0.22</b>	ND	ND	ND
B3-TP4 (1.5-2.0')	AC51524-004	5/7/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
D1-TP1 (1.5-2')	AC51594-004	5/11/2010	Soil	<i>ppm</i>	<b>1.5</b>	ND	ND	ND	ND	ND	<b>1.5</b>	ND	ND	ND
D1-TP1 (4.5-5')	AC51594-006	5/11/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
D1-TP2 (1.5-2')	AC51594-009	5/11/2010	Soil	<i>ppm</i>	<b>1.7</b>	ND	ND	ND	ND	ND	<b>1.7</b>	ND	ND	ND
D1-TP2 (3.5-4')	AC51594-007	5/11/2010	Soil	<i>ppm</i>	0.13	ND	ND	ND	ND	ND	0.13	ND	ND	ND
M4-TP1 (0.5-1)	AC51759-001	5/18/2010	Soil	<i>ppm</i>	0.074	ND	ND	ND	ND	ND	0.074	ND	ND	ND
M4-TP1 (14-14.5)	AC51759-002	5/18/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N3-TP1 (0.5-1)	AC51759-005	5/18/2010	Soil	<i>ppm</i>	<b>7</b>	ND	ND	ND	ND	ND	<b>7</b>	ND	ND	ND
N4-TP1 (0.5-1)	AC51759-004	5/18/2010	Soil	<i>ppm</i>	0.092	ND	ND	ND	ND	ND	0.092	ND	ND	ND
N4-TP1 (9-9.5)	AC51759-003	5/18/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
I4-TP2 (1.5-2.0')	AC51785-007	5/19/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G2-TP1(3-3.5')	AC51812-007	5/20/2010	Soil	<i>ppm</i>	<b>12</b>	ND	ND	ND	ND	ND	<b>12</b>	ND	ND	ND
G2-TP2(2-2.5')	AC51812-008	5/20/2010	Soil	<i>ppm</i>	<b>54</b>	ND	ND	ND	ND	ND	<b>54</b>	ND	ND	ND
H3-TP1(1-1.5')	AC51812-004	5/20/2010	Soil	<i>ppm</i>	<b>9.9</b>	ND	ND	ND	ND	ND	<b>9.9</b>	ND	ND	ND
H3-TP2(0.5-1')	AC51812-002	5/20/2010	Soil	<i>ppm</i>	<b>14</b>	ND	ND	ND	ND	ND	<b>14</b>	ND	ND	ND
H3-TP2(8.5-9')	AC51812-003	5/20/2010	Soil	<i>ppm</i>	0.054	ND	ND	ND	ND	ND	0.054	ND	ND	ND
J3-TP1(0.5-1')	AC51812-001	5/20/2010	Soil	<i>ppm</i>	<b>0.46</b>	ND	ND	ND	ND	ND	<b>0.46</b>	ND	ND	ND
I2-TP1(1.0-1.5')	AC51865-002	5/21/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G3-TP2 (0.5-1.0')	AC51876-003	5/24/2010	Soil	<i>ppm</i>	<b>23</b>	ND	ND	ND	ND	ND	<b>23</b>	ND	ND	ND
G3-TP3 (0.5-1.0')	AC51876-004	5/24/2010	Soil	<i>ppm</i>	<b>16</b>	ND	ND	ND	ND	ND	<b>16</b>	ND	ND	ND
F2-TP1 (2.5-3.0')	AC51900-002	5/25/2010	Soil	<i>ppm</i>	<b>7</b>	ND	ND	ND	ND	ND	<b>7</b>	ND	ND	ND
F2-TP2 (1-1.5')	AC51900-001	5/25/2010	Soil	<i>ppm</i>	<b>1.1</b>	ND	ND	ND	ND	ND	<b>1.1</b>	ND	ND	ND
F3-TP2 (2-2.5')	AC51950-008	5/26/2010	Soil	<i>ppm</i>	<b>97</b>	ND	ND	ND	ND	ND	<b>97</b>	ND	ND	ND
L5-TP1 (1-1.5')	AC51950-005	5/26/2010	Soil	<i>ppm</i>	<b>0.21</b>	ND	ND	ND	ND	ND	<b>0.21</b>	ND	ND	ND
N4-TP2 (0-0.5')	AC51950-001	5/26/2010	Soil	<i>ppm</i>	<b>0.4</b>	ND	ND	ND	ND	ND	<b>0.23</b>	ND	ND	0.17
N4-TP2 (12.5-13')	AC51950-002	5/26/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O4-TP1 (0-0.5')	AC51950-003	5/26/2010	Soil	<i>ppm</i>	0.13	ND	ND	ND	ND	ND	0.13	ND	ND	ND
O4-TP1 (9.5-10')	AC51950-004	5/26/2010	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E2-TP2 (1-1.5')	AC51988-001	5/27/2010	Soil	<i>ppm</i>	<b>0.5</b>	ND	ND	ND	ND	ND	<b>0.5</b>	ND	ND	ND
I3-TP2 (0.5-1')	AC51988-002	5/27/2010	Soil	<i>ppm</i>	<b>0.84</b>	ND	ND	ND	ND	ND	<b>0.84</b>	ND	ND	ND
K4-TP1 (1-1.5')	AC52042-005	5/28/2010	Soil	<i>ppm</i>	<b>0.7</b>	ND	ND	ND	ND	ND	<b>0.7</b>	ND	ND	ND

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				<i>ppm</i>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>NA</b>	<b>NA</b>
<b>NJDEP IGWSRS</b>				<i>ppm</i>	<b>NA</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>NA</b>	<b>NA</b>
F2-GP1(2-2.5')	AC57846-013	3/16/2011	Soil	<i>ppm</i>	<b>4.8</b>	ND	ND	ND	ND	ND	<b>4.8</b>	ND	ND	ND
F2-GP1(6-6.5')	AC57846-014	3/16/2011	Soil	<i>ppm</i>	<b>20</b>	ND	ND	ND	ND	ND	<b>20</b>	ND	ND	ND
F3-GP1(2.5-3')	AC57846-001	3/16/2011	Soil	<i>ppm</i>	<b>17</b>	ND	ND	ND	ND	ND	<b>17</b>	ND	ND	ND
F3-GP1(6-6.5')	AC57846-002	3/16/2011	Soil	<i>ppm</i>	<b>17.4</b>	ND	ND	ND	<b>6.4</b>	ND	<b>11</b>	ND	ND	ND
F3-GP2(2-2.5')	AC57846-003	3/16/2011	Soil	<i>ppm</i>	<b>2.6</b>	ND	ND	ND	ND	ND	<b>2.6</b>	ND	ND	ND
F3-GP2(6.5-7')	AC57846-004	3/16/2011	Soil	<i>ppm</i>	<b>32</b>	ND	ND	ND	ND	ND	<b>32</b>	ND	ND	ND
F3-GP3(6-6.5')	AC57846-010	3/16/2011	Soil	<i>ppm</i>	<b>39</b>	ND	ND	ND	ND	ND	<b>39</b>	ND	ND	ND
F3-GP4(4.5-5')	AC57846-011	3/16/2011	Soil	<i>ppm</i>	<b>0.5</b>	ND	ND	ND	0.19	ND	<b>0.31</b>	ND	ND	ND
F3-GP4(6.5-7')	AC57846-012	3/16/2011	Soil	<i>ppm</i>	<b>4.3</b>	ND	ND	ND	ND	ND	<b>4.3</b>	ND	ND	ND
G2-GP2(4.5-5')	AC57846-006	3/16/2011	Soil	<i>ppm</i>	<b>25</b>	ND	ND	ND	ND	ND	<b>25</b>	ND	ND	ND
G2-GP2(7-7.5')	AC57846-007	3/16/2011	Soil	<i>ppm</i>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
G2-GP3(3-3.5')	AC57846-008	3/16/2011	Soil	<i>ppm</i>	<b>4.2</b>	ND	ND	ND	<b>0.4</b>	ND	<b>3.8</b>	ND	ND	ND
G2-GP3(9.5-10')	AC57846-009	3/16/2011	Soil	<i>ppm</i>	<b>36</b>	ND	ND	ND	ND	ND	<b>36</b>	ND	ND	ND
G3-GP1(2.5-3')	AC57846-015	3/16/2011	Soil	<i>ppm</i>	<b>71</b>	ND	ND	ND	ND	ND	<b>71</b>	ND	ND	ND
PE-1 (2-2.5)	AC72112-001	4/29/2013	Soil	<i>ppm</i>	<b>18</b>	ND	ND	ND	ND	ND	<b>18</b>	ND	ND	ND
PE-2 (2-2.5)	AC72112-002	04/29/2013	Soil	<i>ppm</i>	<b>5.2</b>	ND	ND	ND	ND	ND	<b>5.2</b>	ND	ND	ND
PE-23 (2-2.5)	AC72112-019	04/29/2013	Soil	<i>ppm</i>	<b>14</b>	ND	ND	ND	ND	ND	<b>14</b>	ND	ND	ND
PE-24 (2-2.5)	AC72112-020	04/29/2013	Soil	<i>ppm</i>	<b>38</b>	ND	ND	ND	ND	ND	<b>38</b>	ND	ND	ND
PE-3 (2-2.5)	AC72112-003	04/29/2013	Soil	<i>ppm</i>	<b>18</b>	ND	ND	ND	ND	ND	<b>18</b>	ND	ND	ND
PE-4 (2-2.5)	AC72112-004	4/29/2013	Soil	<i>ppm</i>	<b>47</b>	ND	ND	ND	ND	ND	<b>47</b>	ND	ND	ND
PE-5 (2-2.5)	AC72112-005	4/29/2013	Soil	<i>ppm</i>	<b>16</b>	ND	ND	ND	ND	ND	<b>16</b>	ND	ND	ND
PE-8 (4-4.5)	AC72112-008	4/29/2013	Soil	<i>ppm</i>	0.16	ND	ND	ND	ND	ND	0.16	ND	ND	ND
PE-9 (2.5-3)	AC72112-009	4/29/2013	Soil	<i>ppm</i>	<b>0.64</b>	ND	ND	ND	ND	ND	<b>0.64</b>	ND	ND	ND
PE-25 (2-2.5)	AC72135-001	04/30/2013	Soil	<i>ppm</i>	<b>8.9</b>	ND	ND	ND	ND	ND	<b>8.9</b>	ND	ND	ND
PE-30 (2-2.5)	AC72135-006	04/30/2013	Soil	<i>ppm</i>	<b>4</b>	ND	ND	ND	ND	ND	<b>4</b>	ND	ND	ND
PE-31 (2-2.5)	AC72135-007	04/30/2013	Soil	<i>ppm</i>	<b>4.5</b>	ND	ND	ND	ND	ND	<b>4.5</b>	ND	ND	ND
PE-32 (2-2.5)	AC72135-008	04/30/2013	Soil	<i>ppm</i>	<b>0.85</b>	ND	ND	ND	ND	ND	<b>0.85</b>	ND	ND	ND
PE-33 (2-2.5)	AC72135-009	04/30/2013	Soil	<i>ppm</i>	<b>5.3</b>	ND	ND	ND	ND	ND	<b>5.3</b>	ND	ND	ND
PE-34 (2-2.5)	AC72135-010	04/30/2013	Soil	<i>ppm</i>	<b>1.56</b>	ND	ND	ND	<b>0.46</b>	ND	<b>1.1</b>	ND	ND	ND
PE-35 (2-2.5)	AC72135-011	04/30/2013	Soil	<i>ppm</i>	<b>8.4</b>	ND	ND	ND	ND	ND	<b>8.4</b>	ND	ND	ND
PE-36 (2-2.5)	AC72135-012	04/30/2013	Soil	<i>ppm</i>	<b>3.19</b>	ND	ND	ND	<b>0.49</b>	ND	<b>2.7</b>	ND	ND	ND
PE-37 (2-2.5)	AC72135-013	04/30/2013	Soil	<i>ppm</i>	<b>2.13</b>	ND	ND	ND	<b>0.33</b>	ND	<b>1.8</b>	ND	ND	ND
PE-38 (2-2.5)	AC72135-014	4/30/2013	Soil	<i>ppm</i>	<b>10</b>	ND	ND	ND	<b>1.2</b>	ND	<b>8.8</b>	ND	ND	ND
PE-39 (2-2.5)	AC72135-015	4/30/2013	Soil	<i>ppm</i>	<b>6.2</b>	ND	ND	ND	ND	ND	<b>6.2</b>	ND	ND	ND
PE-40 (2-2.5)	AC72135-016	4/30/2013	Soil	<i>ppm</i>	<b>1.3</b>	ND	ND	ND	ND	ND	<b>1.3</b>	ND	ND	ND
PE-41 (2-2.5)	AC72135-017	4/30/2013	Soil	<i>ppm</i>	<b>1.1</b>	ND	ND	ND	ND	ND	<b>1.1</b>	ND	ND	ND
PE-42 (2-2.5)	AC72135-018	4/30/2013	Soil	<i>ppm</i>	<b>0.32</b>	ND	ND	ND	ND	ND	<b>0.32</b>	ND	ND	ND
PE-43 (1.5-2)	AC72135-019	4/30/2013	Soil	<i>ppm</i>	<b>21</b>	ND	ND	ND	ND	ND	<b>21</b>	ND	ND	ND
PE-44 (1.9-2.4)	AC72135-020	4/30/2013	Soil	<i>ppm</i>	<b>13</b>	ND	ND	ND	ND	ND	<b>13</b>	ND	ND	ND
PE-45 (0.5-1)	AC72192-001	05/01/2013	Soil	<i>mg/Kg</i>	<b>36</b>	ND	ND	ND	ND	ND	<b>36</b>	ND	ND	ND
PE-47 (0.5-1)	AC72192-003	05/01/2013	Soil	<i>mg/Kg</i>	<b>27</b>	ND	ND	ND	ND	ND	<b>27</b>	ND	ND	ND
PE-49 (0.5-1)	AC72192-005	05/01/2013	Soil	<i>mg/Kg</i>	<b>35</b>	ND	ND	ND	ND	ND	<b>35</b>	ND	ND	ND
PE-50 (0.5-1)	AC72192-006	05/01/2013	Soil	<i>mg/Kg</i>	0.12	ND	ND	ND	ND	ND	0.12	ND	ND	ND
PE-51 (0.5-1)	AC72192-007	05/01/2013	Soil	<i>mg/Kg</i>	<b>16</b>	ND	ND	ND	ND	ND	<b>16</b>	ND	ND	ND
PE-52 (0.5-1)	AC72192-008	05/01/2013	Soil	<i>mg/Kg</i>	<b>1.3</b>	ND	ND	ND	ND	ND	<b>1.3</b>	ND	ND	ND
PE-53 (0.5-1)	AC72192-009	05/01/2013	Soil	<i>mg/Kg</i>	<b>6.8</b>	ND	ND	ND	ND	ND	<b>6.8</b>	ND	ND	ND
PE-54 (0.5-1)	AC72192-010	05/01/2013	Soil	<i>mg/Kg</i>	<b>1.2</b>	ND	ND	ND	ND	ND	<b>1.2</b>	ND	ND	ND
PE-55 (0.5-1)	AC72192-011	05/01/2013	Soil	<i>mg/Kg</i>	<b>13</b>	ND	ND	ND	ND	ND	<b>13</b>	ND	ND	ND
PE-56 (2-2.5)	AC72192-012	05/01/2013	Soil	<i>mg/Kg</i>	<b>0.55</b>	ND	ND	ND	ND	ND	<b>0.55</b>	ND	ND	ND
PE-57 (2-2.5)	AC72192-013	05/01/2013	Soil	<i>mg/Kg</i>	<b>5.6</b>	ND	ND	ND	ND	ND	<b>5.6</b>	ND	ND	ND
PE-58 (2-2.5)	AC72192-014	05/01/2013	Soil	<i>mg/Kg</i>	<b>53</b>	ND	ND	ND	ND	ND	<b>53</b>	ND	ND	ND
PE-59 (2-2.5)	AC72192-015	05/01/2013	Soil	<i>mg/Kg</i>	<b>5.1</b>	ND	ND	ND	ND	ND	<b>5.1</b>	ND	ND	ND

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				ppm	1	1	1	1	1	1	1	1	NA	NA
<b>NJDEP IGWSRS</b>				ppm	NA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	NA	NA
PE-60 (2-2.5)	AC72192-016	05/01/2013	Soil	mg/Kg	1.4	ND	ND	ND	ND	ND	1.4	ND	ND	ND
PE-61 (2-2.5)	AC72192-017	05/01/2013	Soil	mg/Kg	7.7	ND	ND	ND	ND	ND	7.7	ND	ND	ND
PE-62 (2-2.5)	AC72192-018	05/01/2013	Soil	mg/Kg	42.4	ND	ND	ND	2.4	ND	40	ND	ND	ND
PE-63(2-2.5)	AC72192-019	05/01/2013	Soil	mg/Kg	15	ND	ND	ND	ND	ND	15	ND	ND	ND
PE-64 (0.5-1)	AC72193-001	5/2/2013	Soil	ppm	1.5	ND	ND	ND	ND	ND	1.5	ND	ND	ND
PE-65 (0.5-1)	AC72193-002	5/2/2013	Soil	ppm	20	ND	ND	ND	ND	ND	20	ND	ND	ND
PE-66 (0.5-1)	AC72193-003	5/2/2013	Soil	ppm	5	ND	ND	ND	ND	ND	5	ND	ND	ND
PE-67 (0.5-1)	AC72193-004	5/2/2013	Soil	ppm	22	ND	ND	ND	ND	ND	22	ND	ND	ND
PE-68 (0.5-1)	AC72193-005	5/2/2013	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND
PE-69 (0.5-1)	AC72193-006	5/2/2013	Soil	ppm	0.096	ND	ND	ND	ND	ND	0.096	ND	ND	ND
PE-70 (0.5-1)	AC72193-007	5/2/2013	Soil	ppm	3.9	ND	ND	ND	ND	ND	ND	3.9	ND	ND
PE-71 (0.5-1)	AC72193-008	5/2/2013	Soil	ppm	20	ND	ND	ND	ND	ND	20	ND	ND	ND
PE-72 (0.5-1)	AC72193-009	5/2/2013	Soil	ppm	8.2	ND	ND	ND	ND	ND	8.2	ND	ND	ND
PE-73 (0.5-1)	AC72193-010	5/2/2013	Soil	ppm	0.86	ND	ND	ND	ND	ND	0.86	ND	ND	ND
PE-74 (0.5-1)	AC72193-011	5/2/2013	Soil	ppm	8.5	ND	ND	ND	ND	ND	8.5	ND	ND	ND
PE-76 (0.5-1)	AC72193-013	5/2/2013	Soil	ppm	69	ND	ND	ND	ND	ND	69	ND	ND	ND
PE-77 (0.5-1)	AC72193-014	5/2/2013	Soil	ppm	33	ND	ND	ND	ND	ND	33	ND	ND	ND
PE-78 (0.5-1)	AC72193-015	5/2/2013	Soil	ppm	37	ND	ND	ND	ND	ND	37	ND	ND	ND
PE-79 (3-3.5)	AC72208-001	5/3/2013	Soil	ppm	12	ND	ND	ND	ND	ND	12	ND	ND	ND
PE-80 (4-4.5)	AC72208-002	5/3/2013	Soil	ppm	0.91	ND	ND	ND	ND	ND	0.91	ND	ND	ND
PE-81 (3.5-4)	AC72208-003	5/3/2013	Soil	ppm	13	ND	ND	ND	ND	ND	13	ND	ND	ND
PE-84 (3-3.5)	AC72208-006	5/3/2013	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND
PE-85 (3-3.5)	AC72208-007	5/3/2013	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
PE-86 (3-3.5)	AC72208-008	5/3/2013	Soil	ppm	12	ND	ND	ND	ND	ND	12	ND	ND	ND
PE-87 (3-3.5)	AC72208-009	5/3/2013	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
PE-88 (3-3.5)	AC72208-010	5/3/2013	Soil	ppm	41	ND	ND	ND	ND	ND	41	ND	ND	ND
PE-100(4-4.5)	AC72239-012	05/06/2013	Soil	ppm	0.058	ND	ND	ND	ND	ND	0.058	ND	ND	ND
PE-101(4-4.5)	AC72239-013	05/06/2013	Soil	ppm	0.088	ND	ND	ND	ND	ND	0.088	ND	ND	ND
PE-102(4-4.5)	AC72239-014	05/06/2013	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PE-103(4-4.5)	AC72239-015	05/06/2013	Soil	ppm	43	ND	ND	ND	ND	ND	43	ND	ND	ND
PE-104(4-4.5)	AC72239-016	05/06/2013	Soil	ppm	9.6	ND	ND	ND	ND	ND	9.6	ND	ND	ND
PE-90 (4-4.5)	AC72239-002	5/6/2013	Soil	ppm	13	ND	ND	ND	ND	ND	13	ND	ND	ND
PE-91 (4-4.5)	AC72239-003	5/6/2013	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
PE-93 (4-4.5)	AC72239-005	5/6/2013	Soil	ppm	84	ND	ND	ND	ND	ND	84	ND	ND	ND
PE-96 (4-4.5)	AC72239-008	5/6/2013	Soil	ppm	1.7	ND	ND	ND	ND	ND	1.7	ND	ND	ND
PE-97 (4-4.5)	AC72239-009	5/6/2013	Soil	ppm	14	ND	ND	ND	ND	ND	14	ND	ND	ND
PE-98 (4-4.5)	AC72239-010	5/6/2013	Soil	ppm	0.53	ND	ND	ND	ND	ND	0.53	ND	ND	ND
PE-99 (4-4.5)	AC72239-011	5/6/2013	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PE-113(5.5-6)	AC72272-005	5/7/2013	Soil	ppm	2.5	ND	ND	ND	ND	ND	2.5	ND	ND	ND
PE-114(5.5-6)	AC72272-006	5/7/2013	Soil	ppm	1	ND	ND	ND	ND	ND	1	ND	ND	ND
PE-115(5.5-6)	AC72272-007	5/7/2013	Soil	ppm	0.42	ND	ND	ND	ND	ND	0.42	ND	ND	ND
PE-117(0-0.5)	AC72272-009	5/7/2013	Soil	ppm	0.53	ND	ND	ND	ND	ND	0.53	ND	ND	ND
PE-123(0-0.5)	AC72272-014	5/7/2013	Soil	ppm	0.41	ND	ND	ND	ND	ND	0.41	ND	ND	ND
PE-125(4.5-5)	AC72422-001	5/14/2013	Soil	ppm	0.56	ND	ND	ND	ND	ND	0.56	ND	ND	ND
PE-128(4-4.5)	AC72422-004	5/14/2013	Soil	ppm	2.1	ND	ND	ND	ND	ND	2.1	ND	ND	ND
PE-133(2-2.5)	AC72422-009	5/14/2013	Soil	ppm	52	ND	ND	ND	ND	ND	52	ND	ND	ND
PE-134(2-2.5)	AC72422-010	5/14/2013	Soil	ppm	69	ND	ND	ND	ND	ND	69	ND	ND	ND
PE-135(2-2.5)	AC72422-011	5/14/2013	Soil	ppm	12	ND	ND	ND	ND	ND	12	ND	ND	ND
PE-136(2-2.5)	AC72422-012	5/14/2013	Soil	ppm	20	ND	ND	ND	ND	ND	20	ND	ND	ND
PE-137(2-2.5)	AC72422-013	5/14/2013	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND
PE-138(0.5-1)	AC72442-001	05/15/2013	Soil	ppm	6.5	ND	ND	ND	ND	ND	6.5	ND	ND	ND
PE-148(4-4.5)	AC72442-011	05/15/2013	Soil	ppm	0.08	ND	ND	ND	ND	ND	0.08	ND	ND	ND
PE-149(4-4.5)	AC72442-012	05/15/2013	Soil	ppm	0.7	ND	ND	ND	ND	ND	0.7	ND	ND	ND
PE-139 (0.5-1)	AC72442-002	5/16/2013	Soil	ppm	5.6	ND	ND	ND	ND	ND	5.6	ND	ND	ND

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				ppm	1	1	1	1	1	1	1	1	NA	NA
<b>NJDEP IGWSRS</b>				ppm	NA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	NA	NA
PE-140 (0.5-1)	AC72442-003	5/17/2013	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
PE-141 (0.5-1)	AC72442-004	5/18/2013	Soil	ppm	81	ND	ND	ND	ND	ND	81	ND	ND	ND
PE-142 (0.5-1)	AC72442-005	5/19/2013	Soil	ppm	74	ND	ND	ND	ND	ND	74	ND	ND	ND
PE-143 (0.5-1)	AC72442-006	5/20/2013	Soil	ppm	14	ND	ND	ND	ND	ND	14	ND	ND	ND
PE-144 (0.5-1)	AC72442-007	5/21/2013	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PE-146 (0.5-1)	AC72442-009	5/23/2013	Soil	ppm	0.73	ND	ND	ND	ND	ND	0.73	ND	ND	ND
PE-147 (0.5-1)	AC72442-010	5/24/2013	Soil	ppm	0.85	ND	ND	ND	ND	ND	0.85	ND	ND	ND
PE-150 (4-4.5)	AC72442-013	5/27/2013	Soil	ppm	9.2	ND	ND	ND	ND	ND	9.2	ND	ND	ND
PEX-145N	AC80297-002	8/13/2014	Soil	ppm	46	ND	ND	ND	ND	ND	46	ND	ND	ND
PEX-46N	AC80297-001	8/13/2014	Soil	ppm	21	ND	ND	ND	ND	ND	21	ND	ND	ND
PEX-48E	AC80297-003	8/13/2014	Soil	ppm	1.9	ND	ND	ND	ND	ND	1.9	ND	ND	ND
PEX-94N	AC80335-003	8/14/2014	Soil	ppm	8.8	ND	ND	ND	ND	ND	8.8	ND	ND	ND
PEX-94S	AC80335-004	8/14/2014	Soil	ppm	20	ND	ND	ND	ND	ND	20	ND	ND	ND
PEX-94W	AC80335-002	8/14/2014	Soil	ppm	23.2	ND	ND	ND	7.2	ND	16	ND	ND	ND
PEX-126N	AC80417-002	8/19/2014	Soil	ppm	8	ND	ND	ND	ND	ND	8	ND	ND	ND
PEX-12E	AC80417-001	8/21/2014	Soil	ppm	0.063	ND	ND	ND	ND	ND	0.063	ND	ND	ND
PEX-121E	AC80631-012	9/4/2014	Soil	ppm	2.8	ND	ND	ND	ND	ND	2.8	ND	ND	ND
PEX-121S	AC80631-010	9/4/2014	Soil	ppm	4.4	ND	ND	ND	ND	ND	4.4	ND	ND	ND
PEX-75E	AC80631-008	9/4/2014	Soil	ppm	70	ND	ND	ND	ND	70	ND	ND	ND	ND
PEX-75N	AC80631-006	9/4/2014	Soil	ppm	3	ND	ND	ND	ND	ND	3	ND	ND	ND
PEX-75S	AC80631-007	9/4/2014	Soil	ppm	9.7	ND	ND	ND	ND	ND	9.7	ND	ND	ND
PEX-75W	AC80631-009	9/4/2014	Soil	ppm	31	ND	ND	ND	ND	ND	31	ND	ND	ND
PEX-82E	AC80631-005	9/4/2014	Soil	ppm	14	ND	ND	ND	ND	ND	14	ND	ND	ND
PEX-82N	AC80631-003	9/4/2014	Soil	ppm	36	ND	ND	ND	ND	ND	36	ND	ND	ND
PEX-82S	AC80631-004	9/4/2014	Soil	ppm	0.85	ND	ND	ND	ND	ND	0.85	ND	ND	ND
PEX-83N	AC80631-001	9/4/2014	Soil	ppm	28	ND	ND	ND	ND	ND	28	ND	ND	ND
PEX-83S	AC80631-002	9/4/2014	Soil	ppm	98	ND	ND	ND	ND	ND	98	ND	ND	ND
PEX-118E	AC80777-004	9/10/2014	Soil	ppm	0.2	ND	ND	ND	ND	ND	0.2	ND	ND	ND
PEX-118S	AC80777-003	9/10/2014	Soil	ppm	0.1	ND	ND	ND	ND	ND	0.1	ND	ND	ND
PEX-26W	AC80777-005	9/10/2014	Soil	ppm	8.9	ND	ND	ND	ND	ND	8.9	ND	ND	ND
PEX-29S	AC80777-008	9/10/2014	Soil	ppm	5.2	ND	ND	ND	ND	ND	5.2	ND	ND	ND
PEX-10N	AC80804-002	9/12/2014	Soil	ppm	0.16	ND	ND	ND	ND	ND	0.16	ND	ND	ND
PEX-129S	AC80916-003	9/18/2014	Soil	ppm	5.5	ND	ND	ND	ND	ND	5.5	ND	ND	ND
PEX-130E	AC80916-004	9/18/2014	Soil	ppm	1.9	ND	ND	ND	ND	ND	1.9	ND	ND	ND
PEX-130S	AC80916-005	9/18/2014	Soil	ppm	1.4	ND	ND	ND	ND	ND	1.4	ND	ND	ND
PEX-121B-2	AC81026-003	9/24/2014	Soil	ppm	0.29	ND	ND	ND	ND	0.29	ND	ND	ND	ND
PEX-121W-3	AC81026-002	9/24/2014	Soil	ppm	0.95	ND	ND	ND	ND	ND	0.95	ND	ND	ND
PEX-118N-2	AC81132-003	9/29/2014	Soil	ppm	0.16	ND	ND	ND	ND	ND	0.16	ND	ND	ND
PEX-19E4	AC81132-001	9/29/2014	Soil	ppm	0.26	ND	ND	ND	ND	ND	0.26	ND	ND	ND
DTP-1 (2.5-3)	AD00216-001	9/25/2017	Soil	ppm	0.44	ND	ND	ND	ND	ND	0.44	ND	ND	ND
DTP-1 (4.5-5)	AD00216-002	9/25/2017	Soil	ppm	0.088	ND	ND	ND	ND	ND	0.088	ND	ND	ND
DTP-10 (3.5-4)	AD00216-017	9/25/2017	Soil	ppm	9.2	ND	ND	ND	3.6	ND	5.6	ND	ND	ND
DTP-11 (2.5-3)	AD00216-018	9/25/2017	Soil	ppm	1.5	ND	ND	ND	0.37	ND	1.1	ND	ND	ND
DTP-11 (6.5-7)	AD00216-019	9/25/2017	Soil	ppm	3.2	ND	ND	ND	ND	ND	3.2	ND	ND	ND
DTP-12 (2.5-3)	AD00216-020	9/25/2017	Soil	ppm	0.67	ND	ND	ND	0.32	ND	0.25	ND	0.1	ND
DTP-12 (7.5-8)	AD00216-021	9/25/2017	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
DTP-13 (2.5-3)	AD00216-022	9/25/2017	Soil	ppm	3.1	ND	ND	ND	ND	ND	3.1	ND	ND	ND
DTP-13 (6.5-7)	AD00216-023	9/25/2017	Soil	ppm	8.5	ND	ND	ND	1.4	ND	7.1	ND	ND	ND
DTP-14 (2.5-3)	AD00216-024	9/25/2017	Soil	ppm	1.4	ND	ND	ND	0.19	ND	1.2	ND	ND	ND
DTP-14 (7.5-8)	AD00216-025	9/25/2017	Soil	ppm	6.2	ND	ND	ND	ND	ND	6.2	ND	ND	ND
DTP-15 (2.5-3)	AD00216-026	9/25/2017	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND
DTP-15 (4.5-5)	AD00216-027	9/25/2017	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
DTP-16 (1.5-2)	AD00216-028	9/25/2017	Soil	ppm	62	ND	ND	ND	ND	ND	62	ND	ND	ND
DTP-16 (4.5-5)	AD00216-029	9/25/2017	Soil	ppm	34	ND	ND	ND	ND	ND	34	ND	ND	ND
DTP-17 (1.5-2)	AD00216-030	9/25/2017	Soil	ppm	39	ND	ND	ND	ND	ND	39	ND	ND	ND
DTP-18 (2.5-3)	AD00216-031	9/25/2017	Soil	ppm	38	ND	ND	ND	ND	ND	38	ND	ND	ND
DTP-19 (2.5-3)	AD00216-032	9/25/2017	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND
DTP-19 (8.5-9)	AD00216-033	9/25/2017	Soil	ppm	0.12	ND	ND	ND	ND	ND	0.12	ND	ND	ND

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**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
					ppm	1	1	1	1	1	1	1	1	1
<b>NJDEP NRSRS</b>					ppm	1	1	1	1	1	1	1	NA	NA
<b>NJDEP IGWSRS</b>					ppm	NA	0.2	0.2	0.2	0.2	0.2	0.2	NA	NA
DTP-2 (2.5-3)	AD00216-003	9/25/2017	Soil	ppm	0.039	ND	ND	ND	ND	ND	0.039	ND	ND	ND
DTP-2 (4.5-5)	AD00216-004	9/25/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-20 (2.5-3)	AD00216-034	9/25/2017	Soil	ppm	150	ND	ND	ND	ND	ND	150	ND	ND	ND
DTP-3 (2.5-3)	AD00216-005	9/25/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-3 (3.5-4)	AD00216-006	9/25/2017	Soil	ppm	66	ND	ND	ND	ND	ND	66	ND	ND	ND
DTP-4 (2.5-3)	AD00216-007	9/25/2017	Soil	ppm	3.6	ND	ND	ND	ND	ND	3.6	ND	ND	ND
DTP-4 (4.5-5)	AD00216-008	9/25/2017	Soil	ppm	0.12	ND	ND	ND	ND	ND	0.12	ND	ND	ND
DTP-5 (0.5-1)	AD00216-009	9/25/2017	Soil	ppm	330	ND	ND	ND	ND	ND	330	ND	ND	ND
DTP-6 (1.5-2)	AD00216-010	9/25/2017	Soil	ppm	130	ND	ND	ND	ND	ND	130	ND	ND	ND
DTP-7 (2.5-3)	AD00216-011	9/25/2017	Soil	ppm	210	ND	ND	ND	ND	ND	210	ND	ND	ND
DTP-7 (4.5-5)	AD00216-012	9/25/2017	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND
DTP-8 (2.5-3)	AD00216-013	9/25/2017	Soil	ppm	6.9	ND	ND	ND	ND	ND	6.9	ND	ND	ND
DTP-8 (5.5-6)	AD00216-014	9/25/2017	Soil	ppm	48	ND	ND	ND	ND	ND	48	ND	ND	ND
DTP-9 (2.5-3)	AD00216-015	9/25/2017	Soil	ppm	0.76	ND	ND	ND	ND	ND	0.76	ND	ND	ND
DTP-9 (4-4.5)	AD00216-016	9/25/2017	Soil	ppm	2.9	ND	ND	ND	ND	ND	2.9	ND	ND	ND
DTP-21 (1.5-2)	AD00266-001	9/27/2017	Soil	ppm	9.1	ND	ND	ND	0.45	ND	8.7	ND	ND	ND
DTP-22 (2.5-3)	AD00266-002	9/27/2017	Soil	ppm	0.61	ND	ND	ND	ND	ND	0.61	ND	ND	ND
DTP-22 (8.5-9)	AD00266-003	9/27/2017	Soil	ppm	40	ND	ND	ND	ND	ND	40	ND	ND	ND
DTP-23 (2.5-3)	AD00266-004	9/27/2017	Soil	ppm	0.69	ND	ND	ND	ND	ND	0.69	ND	ND	ND
DTP-23 (9.5-10)	AD00266-005	9/27/2017	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND
DTP-24 (2.5-3)	AD00266-006	9/27/2017	Soil	ppm	0.14	ND	ND	ND	ND	ND	0.14	ND	ND	ND
DTP-24 (6.5-7)	AD00266-007	9/27/2017	Soil	ppm	6.1	ND	ND	ND	ND	ND	6.1	ND	ND	ND
DTP-25 (1-1.5)	AD00266-008	9/27/2017	Soil	ppm	5.5	ND	ND	ND	ND	ND	5.5	ND	ND	ND
DTP-26 (2.5-3)	AD00266-012	9/27/2017	Soil	ppm	1.1	ND	ND	ND	ND	ND	1.1	ND	ND	ND
DTP-27 (0-0.5)	AD00266-009	9/27/2017	Soil	ppm	4.9	ND	ND	ND	0.73	ND	4.2	ND	ND	ND
DTP-28 (14.5-15)	AD00266-011	9/27/2017	Soil	ppm	0.077	ND	ND	ND	ND	ND	0.077	ND	ND	ND
DTP-28 (2.5-3)	AD00266-010	9/27/2017	Soil	ppm	2.9	ND	ND	ND	0.37	ND	2.5	ND	ND	ND
DTP-29 (2.5-3)	AD00309-001	9/28/2017	Soil	ppm	35	ND	ND	ND	ND	ND	35	ND	ND	ND
DTP-30 (14.5-15)	AD00309-003	9/28/2017	Soil	ppm	1.8	ND	ND	ND	0.63	ND	1.2	ND	ND	ND
DTP-30 (2.5-3)	AD00309-002	9/28/2017	Soil	ppm	2.7	ND	ND	ND	1.1	ND	1.6	ND	ND	ND
DTP-31 (2.5-3)	AD00309-004	9/28/2017	Soil	ppm	420	ND	ND	ND	ND	ND	420	ND	ND	ND
DTP-31 (8.5-9)	AD00309-005	9/28/2017	Soil	ppm	17	ND	ND	ND	4.9	ND	12	ND	ND	ND
DTP-32 (1.5-2)	AD00309-006	9/28/2017	Soil	ppm	22	ND	ND	ND	9.5	ND	13	ND	ND	ND
DTP-33 (1-1.5)	AD00317-001	9/29/2017	Soil	ppm	21	ND	ND	ND	7	ND	14	ND	ND	ND
DTP-34 (1.5-2)	AD00317-002	9/29/2017	Soil	ppm	32	ND	ND	ND	17	ND	15	ND	ND	ND
DTP-35 (0.5-1)	AD00317-003	9/29/2017	Soil	ppm	0.065	ND	ND	ND	ND	ND	0.065	ND	ND	ND
DTP-36 (0.5-1)	AD00317-004	9/29/2017	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND
DTP-37 (1-1.5)	AD00317-005	9/29/2017	Soil	ppm	0.77	ND	ND	ND	ND	ND	0.77	ND	ND	ND
DTP-38 (1-1.5)	AD00317-006	9/29/2017	Soil	ppm	12	ND	ND	ND	ND	ND	12	ND	ND	ND
DTP-40 (2-2.5)	AD00317-007	9/29/2017	Soil	ppm	0.06	ND	ND	ND	ND	ND	0.06	ND	ND	ND
DTP-40 (6-6.5)	AD00317-008	9/29/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-41 (2.5-3)	AD00317-009	9/29/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-42 (3.5-4)	AD00317-010	9/29/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-43 (1.5-2)	AD00358-001	10/2/2017	Soil	ppm	280	ND	ND	ND	ND	ND	280	ND	ND	ND
DTP-44 (3.5-4)	AD00358-002	10/2/2017	Soil	ppm	0.75	ND	ND	ND	ND	ND	0.75	ND	ND	ND
DTP-45 (1.5-2)	AD00358-003	10/2/2017	Soil	ppm	56	ND	ND	ND	ND	ND	56	ND	ND	ND
DTP-45 (5.5-6)	AD00358-004	10/2/2017	Soil	ppm	3.4	ND	ND	ND	ND	ND	3.4	ND	ND	ND
DTP-45 (7.5-8)	AD00358-005	10/2/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-46 (1-1.5)	AD00358-006	10/2/2017	Soil	ppm	76	ND	ND	ND	ND	ND	76	ND	ND	ND
DTP-46 (2.5-3)	AD00358-007	10/2/2017	Soil	ppm	0.46	ND	ND	ND	ND	ND	0.46	ND	ND	ND
DTP-46 (7-7.5)	AD00358-008	10/2/2017	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-47 (0.5-1)	AD00358-009	10/2/2017	Soil	ppm	49	ND	ND	ND	15	ND	34	ND	ND	ND
DTP-48 (2-2.5)	AD00358-010	10/2/2017	Soil	ppm	210	ND	ND	ND	210	ND	ND	ND	ND	ND
DTP-49 (3-3.5)	AD00433-001	10/5/2017	Soil	ppm	0.13	ND	ND	ND	ND	ND	0.13	ND	ND	ND
DTP-50 (2.5-3)	AD00433-002	10/5/2017	Soil	ppm	41	ND	ND	ND	ND	ND	41	ND	ND	ND
DTP-50 (7.5-8)	AD00433-003	10/5/2017	Soil	ppm	91	ND	ND	ND	ND	ND	91	ND	ND	ND

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**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
					ppm	1	1	1	1	1	1	1	1	1
<b>NJDEP NRSRS</b>					ppm	1	1	1	1	1	1	1	1	1
<b>NJDEP IGWSRS</b>					ppm	NA	0.2	0.2	0.2	0.2	0.2	0.2	NA	NA
DTP-51 (1-1.5)	AD00433-004	10/5/2017	Soil	ppm	47	ND	ND	ND	ND	ND	47	ND	ND	ND
DTP-52 (0.5-1)	AD00433-005	10/5/2017	Soil	ppm	24	ND	ND	ND	ND	ND	24	ND	ND	ND
DTP-53 (1-1.5)	AD00433-006	10/5/2017	Soil	ppm	5.4	ND	ND	ND	ND	ND	5.4	ND	ND	ND
DTP-54 (1.5-2)	AD00433-007	10/5/2017	Soil	ppm	27	ND	ND	ND	ND	ND	27	ND	ND	ND
DTP-55 (1-1.5)	AD00433-008	10/5/2017	Soil	ppm	23	ND	ND	ND	ND	ND	23	ND	ND	ND
DTP-56 (1-1.5)	AD00433-009	10/5/2017	Soil	ppm	50	ND	ND	ND	ND	ND	50	ND	ND	ND
DTP-57 (1.5-2)	AD00433-010	10/5/2017	Soil	ppm	41	ND	ND	ND	ND	ND	41	ND	ND	ND
DTP-58 (0.5-1)	AD00433-011	10/5/2017	Soil	ppm	25	ND	ND	ND	ND	ND	25	ND	ND	ND
DTP-59 (2.5-3)	AD00433-012	10/5/2017	Soil	ppm	270	ND	ND	ND	150	ND	120	ND	ND	ND
DTP-60 (1-1.5)	AD00433-013	10/5/2017	Soil	ppm	71	ND	ND	ND	ND	ND	71	ND	ND	ND
DTP-61 (0.5-1)	AD00433-014	10/5/2017	Soil	ppm	40	ND	ND	ND	ND	ND	40	ND	ND	ND
DTP-62 (1-1.5)	AD00433-015	10/5/2017	Soil	ppm	55	ND	ND	ND	ND	ND	55	ND	ND	ND
DTP-62 (3-3.5)	AD00433-016	10/5/2017	Soil	ppm	1.8	ND	ND	ND	ND	ND	1.8	ND	ND	ND
DTP-63 (2.5-3)	AD00459-001	10/6/2017	Soil	ppm	130	ND	ND	ND	ND	ND	130	ND	ND	ND
DTP-64 (2.5-3)	AD00459-002	10/6/2017	Soil	ppm	19	ND	ND	ND	ND	ND	19	ND	ND	ND
DTP-65 (3-3.5)	AD00459-003	10/6/2017	Soil	ppm	21	ND	ND	ND	ND	ND	21	ND	ND	ND
DTP-66 (2-2.5)	AD00459-004	10/6/2017	Soil	ppm	1.5	ND	ND	ND	ND	ND	1.5	ND	ND	ND
DTP-67 (1.5-2)	AD00459-005	10/6/2017	Soil	ppm	10	ND	ND	ND	ND	ND	10	ND	ND	ND
DTP-68 (3.5-4)	AD00459-006	10/6/2017	Soil	ppm	6.8	ND	ND	ND	ND	ND	6.8	ND	ND	ND
DTP-69 (1.5-2)	AD00459-007	10/6/2017	Soil	ppm	180	ND	ND	ND	ND	ND	180	ND	ND	ND
DTP-70 (0.5-1)	AD04480-001	5/30/2018	Soil	ppm	0.11	ND	ND	ND	ND	ND	0.11	ND	ND	ND
DTP-70 (3.5-4)	AD04480-002	5/30/2018	Soil	ppm	0.12	ND	ND	ND	ND	ND	0.12	ND	ND	ND
DTP-70 (8.5-9)	AD04480-003	5/30/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-71 (0.5-1)	AD04480-004	5/30/2018	Soil	ppm	4.4	ND	ND	ND	ND	ND	4.4	ND	ND	ND
DTP-72 (0.5-1)	AD04480-005	5/30/2018	Soil	ppm	0.28	ND	ND	ND	ND	ND	0.28	ND	ND	ND
DTP-72 (3.5-4)	AD04480-006	5/30/2018	Soil	ppm	78	ND	ND	ND	ND	ND	78	ND	ND	ND
DTP-73 (0.5-1)	AD04480-007	5/30/2018	Soil	ppm	9	ND	ND	ND	ND	ND	9	ND	ND	ND
DTP-74 (0.5-1)	AD04480-008	5/30/2018	Soil	ppm	130	ND	ND	ND	ND	ND	130	ND	ND	ND
DTP-75 (0.5-1)	AD04480-009	5/30/2018	Soil	ppm	0.18	ND	ND	ND	ND	ND	0.18	ND	ND	ND
DTP-75 (3.5-4)	AD04480-010	5/30/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-75 (8.5-9)	AD04480-011	5/30/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-76 (0.5-1)	AD04480-012	5/30/2018	Soil	ppm	0.26	ND	ND	ND	ND	ND	0.26	ND	ND	ND
DTP-76 (3.5-4)	AD04480-013	5/30/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-76 (8.5-9)	AD04480-014	5/30/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-77 (0.5-1)	AD04480-015	5/30/2018	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND
DTP-77 (3.5-4)	AD04480-016	5/30/2018	Soil	ppm	3.5	ND	ND	ND	ND	ND	3.5	ND	ND	ND
DTP-78 (0.5-1)	AD04499-001	5/31/2018	Soil	ppm	0.062	ND	ND	ND	ND	ND	0.062	ND	ND	ND
DTP-78 (3.5-4)	AD04499-002	5/31/2018	Soil	ppm	8.3	ND	ND	ND	ND	ND	8.3	ND	ND	ND
DTP-79 (0.5-1)	AD04499-003	5/31/2018	Soil	ppm	0.098	ND	ND	ND	ND	ND	0.098	ND	ND	ND
DTP-79 (3.5-4)	AD04499-004	5/31/2018	Soil	ppm	1.4	ND	ND	ND	ND	ND	1.4	ND	ND	ND
DTP-80 (0.5-1)	AD04499-005	5/31/2018	Soil	ppm	0.56	ND	ND	ND	ND	ND	0.56	ND	ND	ND
DTP-80 (3.5-4)	AD04499-006	5/31/2018	Soil	ppm	80	ND	ND	ND	ND	ND	80	ND	ND	ND
DTP-81 (0.5-1)	AD04499-007	5/31/2018	Soil	ppm	37	ND	ND	ND	11	ND	26	ND	ND	ND
DTP-81 (3.5-4)	AD04499-008	5/31/2018	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND
DTP-82 (0.5-1)	AD04499-009	5/31/2018	Soil	ppm	0.41	ND	ND	ND	ND	ND	0.41	ND	ND	ND
DTP-82 (3.5-4)	AD04499-010	5/31/2018	Soil	ppm	2.8	ND	ND	ND	ND	ND	2.8	ND	ND	ND
DTP-83 (0.5-1)	AD04499-011	5/31/2018	Soil	ppm	4.3	ND	ND	ND	ND	ND	4.3	ND	ND	ND
DTP-83 (3.5-4)	AD04499-012	5/31/2018	Soil	ppm	13	ND	ND	ND	ND	ND	13	ND	ND	ND
DTP-84 (0.5-1)	AD04499-013	5/31/2018	Soil	ppm	30	ND	ND	ND	ND	ND	30	ND	ND	ND
DTP-84 (3.5-4)	AD04499-014	5/31/2018	Soil	ppm	2.3	ND	ND	ND	0.17	ND	2.1	ND	ND	ND
DTP-85 (0.5-1)	AD04499-015	5/31/2018	Soil	ppm	57	ND	ND	ND	ND	ND	57	ND	ND	ND
DTP-86 (0.5-1)	AD04499-016	5/31/2018	Soil	ppm	33	ND	ND	ND	ND	ND	33	ND	ND	ND
DTP-87 (0.5-1)	AD04499-017	5/31/2018	Soil	ppm	5.3	ND	ND	ND	ND	ND	5.3	ND	ND	ND
DTP-87 (3.5-4)	AD04499-018	5/31/2018	Soil	ppm	1.7	ND	ND	ND	ND	ND	1.7	ND	ND	ND
DTP-87 (8.5-9)	AD04499-019	5/31/2018	Soil	ppm	18	ND	ND	ND	ND	ND	18	ND	ND	ND

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268	
					ppm	1	1	1	1	1	1	1	1	1	1
<b>NJDEP NRSRS</b>					ppm	1	1	1	1	1	1	1	1	1	1
<b>NJDEP IGWSRS</b>					ppm	NA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
DTP-88 (3.5-4)	AD04499-021	5/31/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
DTP-88 (0.5-1)	AD04499-020	5/31/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
DTP-88 (8.5-9)	AD04499-022	5/31/2018	Soil	ppm	4.7	ND	ND	ND	ND	ND	4.7	ND	ND	ND	
DTP-89 (0.5-1)	AD04499-023	5/31/2018	Soil	ppm	0.098	ND	ND	ND	ND	ND	0.098	ND	ND	ND	
DTP-90 (0.5-1)	AD04533-001	6/1/2018	Soil	ppm	25	ND	ND	ND	ND	ND	25	ND	ND	ND	
DTP-91 (0.5-1)	AD04533-002	6/1/2018	Soil	ppm	5.6	ND	ND	ND	ND	ND	5.6	ND	ND	ND	
DTP-91 (3.5-4)	AD04533-003	6/1/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
DTP-91 (8.5-9)	AD04533-004	6/1/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
DTP-92 (0.5-1)	AD04533-005	6/1/2018	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND	
DTP-93 (0.5-1)	AD04533-006	6/1/2018	Soil	ppm	3.3	ND	ND	ND	ND	ND	3.3	ND	ND	ND	
DTP-94 (0.5-1)	AD04533-007	6/1/2018	Soil	ppm	30	ND	ND	ND	ND	ND	30	ND	ND	ND	
DTP-100 (0.5-1.0)	AD05104-013	7/2/2018	Soil	ppm	1,200	ND	ND	ND	1,200	ND	ND	ND	ND	ND	
DTP-100 (3.5-4.0)	AD05104-014	7/2/2018	Soil	ppm	21	ND	ND	ND	ND	ND	21	ND	ND	ND	
DTP-101 (0.5-1.0)	AD05104-015	7/2/2018	Soil	ppm	0.25	ND	ND	ND	ND	ND	0.25	ND	ND	ND	
DTP-101 (3.5-4.0)	AD05104-016	7/2/2018	Soil	ppm	0.97	ND	ND	ND	ND	ND	0.97	ND	ND	ND	
DTP-101 (6.5-7.0)	AD05104-017	7/2/2018	Soil	ppm	7.1	ND	ND	ND	ND	ND	7.1	ND	ND	ND	
DTP-102 (0.5-1.0)	AD05104-018	7/2/2018	Soil	ppm	0.13	ND	ND	ND	ND	ND	0.13	ND	ND	ND	
DTP-102 (2-2.5)	AD05104-019	7/2/2018	Soil	ppm	24	ND	ND	ND	ND	ND	24	ND	ND	ND	
DTP-103 (0.5-1.0)	AD05104-020	7/2/2018	Soil	ppm	23	ND	ND	ND	ND	ND	23	ND	ND	ND	
DTP-103 (2-2.5)	AD05104-021	7/2/2018	Soil	ppm	9.6	ND	ND	ND	ND	ND	9.6	ND	ND	ND	
DTP-104 (0.5-1.0)	AD05104-022	7/2/2018	Soil	ppm	6.5	ND	ND	ND	ND	ND	6.5	ND	ND	ND	
DTP-104 (3-3.5)	AD05104-023	7/2/2018	Soil	ppm	12	ND	ND	ND	ND	ND	12	ND	ND	ND	
DTP-105 (0.5-1.0)	AD05104-024	7/2/2018	Soil	ppm	0.36	ND	ND	ND	ND	ND	0.36	ND	ND	ND	
DTP-105 (2.5-3.0)	AD05104-025	7/2/2018	Soil	ppm	0.32	ND	ND	ND	ND	ND	0.32	ND	ND	ND	
DTP-106 (0.5-1.0)	AD05104-026	7/2/2018	Soil	ppm	13	ND	ND	ND	3.8	ND	9.1	ND	ND	ND	
DTP-106 (3.5-4.0)	AD05104-027	7/2/2018	Soil	ppm	0.65	ND	ND	ND	0.26	ND	0.39	ND	ND	ND	
DTP-107 (0.5-1.0)	AD05104-028	7/2/2018	Soil	ppm	0.13	ND	ND	ND	ND	ND	0.13	ND	ND	ND	
DTP-107 (3.5-4.0)	AD05104-029	7/2/2018	Soil	ppm	9.4	ND	ND	ND	ND	ND	9.4	ND	ND	ND	
DTP-95 (0.5-1.0)	AD05104-001	7/2/2018	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND	
DTP-95 (3.5-4.0)	AD05104-002	7/2/2018	Soil	ppm	6.9	ND	ND	ND	ND	ND	6.9	ND	ND	ND	
DTP-96 (0.5-1.0)	AD05104-003	7/2/2018	Soil	ppm	27	ND	ND	ND	ND	ND	27	ND	ND	ND	
DTP-96 (3.5-4.0)	AD05104-004	7/2/2018	Soil	ppm	22	ND	ND	ND	ND	ND	22	ND	ND	ND	
DTP-96 (4.5-5.0)	AD05104-005	7/2/2018	Soil	ppm	66	ND	ND	ND	ND	ND	66	ND	ND	ND	
DTP-97 (0.5-1.0)	AD05104-006	7/2/2018	Soil	ppm	16	ND	ND	ND	7.8	ND	7.8	ND	ND	ND	
DTP-97 (3.5-4.0)	AD05104-007	7/2/2018	Soil	ppm	5.7	ND	ND	ND	ND	ND	5.7	ND	ND	ND	
DTP-97 (5.5-6.0)	AD05104-008	7/2/2018	Soil	ppm	2.9	ND	ND	ND	ND	ND	2.9	ND	ND	ND	
DTP-98 (0.5-1.0)	AD05104-009	7/2/2018	Soil	ppm	6.2	ND	ND	ND	ND	ND	6.2	ND	ND	ND	
DTP-98 (3.5-4.0)	AD05104-010	7/2/2018	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND	
DTP-99 (0.5-1.0)	AD05104-011	7/2/2018	Soil	ppm	20	ND	ND	ND	ND	ND	20	ND	ND	ND	
DTP-99 (3.5-4.0)	AD05104-012	7/2/2018	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND	
DTP-108 (0.5-1.0)	AD05118-003	7/3/2018	Soil	ppm	5.1	ND	ND	ND	ND	ND	5.1	ND	ND	ND	
DTP-108 (3.5-4.0)	AD05118-004	7/3/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
DTP-109 (0.5-1.0)	AD05118-005	7/3/2018	Soil	ppm	15	ND	ND	ND	ND	ND	15	ND	ND	ND	
DTP-109 (3.5-4.0)	AD05118-006	7/3/2018	Soil	ppm	1.2	ND	ND	ND	ND	ND	1.2	ND	ND	ND	
DTP-110 (0.5-1.0)	AD05118-007	7/3/2018	Soil	ppm	1.6	ND	ND	ND	ND	ND	1.6	ND	ND	ND	
DTP-110 (2.5-3.0)	AD05118-008	7/3/2018	Soil	ppm	1.5	ND	ND	ND	ND	ND	1.5	ND	ND	ND	
DTP-111 (0.5-1.0)	AD05118-001	7/3/2018	Soil	ppm	0.14	ND	ND	ND	ND	ND	0.14	ND	ND	ND	
DTP-111 (3.5-4.0)	AD05118-002	7/3/2018	Soil	ppm	0.22	ND	ND	ND	ND	ND	0.22	ND	ND	ND	
DPT-112 (0.5-1.0)	AD05909-001	8/9/2018	Soil	ppm	0.25	ND	ND	ND	ND	ND	0.25	ND	ND	ND	
DPT-112 (3.5-4.0)	AD05909-002	8/9/2018	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND	
DPT-113 (0.5-1.0)	AD05909-003	8/9/2018	Soil	ppm	6.8	ND	ND	ND	ND	ND	6.8	ND	ND	ND	
DPT-113 (3.5-4.0)	AD05909-004	8/9/2018	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND	
DPT-114 (0.5-1.0)	AD05909-005	8/9/2018	Soil	ppm	13	ND	ND	ND	ND	ND	13	ND	ND	ND	
DPT-114 (3.5-4.0)	AD05909-006	8/9/2018	Soil	ppm	110	ND	ND	ND	ND	ND	110	ND	ND	ND	
DPT-115 (0.5-1.0)	AD05909-007	8/9/2018	Soil	ppm	11	ND	ND	ND	ND	ND	11	ND	ND	ND	
DPT-115 (3.5-4.0)	AD05909-008	8/9/2018	Soil	ppm	6.1	ND	ND	ND	ND	ND	6.1	ND	ND	ND	



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**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				ppm	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>NA</b>	<b>NA</b>
<b>NJDEP IGWSRS</b>				ppm	<b>NA</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>NA</b>	<b>NA</b>
DPT-116 (0.5-1.0)	AD05909-009	8/9/2018	Soil	ppm	<b>29</b>	ND	ND	ND	ND	ND	<b>29</b>	ND	ND	ND
DPT-116 (3.5-4.0)	AD05909-010	8/9/2018	Soil	ppm	<b>1.8</b>	ND	ND	ND	ND	ND	<b>1.8</b>	ND	ND	ND
DPT-117 (0.5-1.0)	AD05909-011	8/9/2018	Soil	ppm	<b>220</b>	ND	ND	ND	ND	ND	<b>220</b>	ND	ND	ND
DPT-117 (3.5-4.0)	AD05909-012	8/9/2018	Soil	ppm	<b>6.2</b>	ND	ND	ND	<b>0.69</b>	ND	<b>5.5</b>	ND	ND	ND
DPT-118 (0.5-1.0)	AD05909-013	8/9/2018	Soil	ppm	<b>33</b>	ND	ND	ND	ND	ND	<b>33</b>	ND	ND	ND
DPT-118 (3.5-4.0)	AD05909-014	8/10/2018	Soil	ppm	<b>86</b>	ND	ND	ND	ND	ND	<b>86</b>	ND	ND	ND
DPT-119 (0.5-1.0)	AD05909-015	8/10/2018	Soil	ppm	<b>25</b>	ND	ND	ND	ND	ND	<b>25</b>	ND	ND	ND
DPT-120 (0.5-1.0)	AD05909-016	8/10/2018	Soil	ppm	<b>3.4</b>	ND	ND	ND	<b>0.51</b>	ND	<b>2.9</b>	ND	ND	ND
DPT-121 (0.5-1.0)	AD05909-017	8/10/2018	Soil	ppm	<b>8</b>	ND	ND	ND	<b>0.77</b>	ND	<b>7.2</b>	ND	ND	ND
DPT-121 (3.5-4.0)	AD05909-018	8/10/2018	Soil	ppm	<b>1.5</b>	ND	ND	ND	<b>0.75</b>	ND	<b>0.61</b>	ND	0.19	ND
DPT-122 (0.5-1.0)	AD05909-019	8/10/2018	Soil	ppm	<b>4.9</b>	ND	ND	ND	ND	ND	<b>4.9</b>	ND	ND	ND
DPT-122 (3.5-4.0)	AD05909-020	8/10/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DTP-123 (0.5-1.0)	AD06393-001	9/7/2018	Soil	ppm	0.082	ND	ND	ND	ND	ND	0.082	ND	ND	ND
DTP-123 (3.5-4.0)	AD06393-002	9/7/2018	Soil	ppm	<b>17</b>	ND	ND	ND	ND	ND	<b>17</b>	ND	ND	ND
DTP-124 (0.5-1.0)	AD06393-003	9/7/2018	Soil	ppm	<b>0.4</b>	ND	ND	ND	ND	ND	<b>0.4</b>	ND	ND	ND
DTP-124 (3.5-4.0)	AD06393-004	9/7/2018	Soil	ppm	<b>40</b>	ND	ND	ND	ND	ND	<b>40</b>	ND	ND	ND
DTP-125 (0.5-1.0)	AD06393-005	9/7/2018	Soil	ppm	<b>4</b>	ND	ND	ND	ND	ND	<b>4</b>	ND	ND	ND
DTP-125 (3.5-4.0)	AD06393-006	9/7/2018	Soil	ppm	<b>32</b>	ND	ND	ND	ND	ND	<b>32</b>	ND	ND	ND
DTP-126 (0.5-1.0)	AD06393-007	9/7/2018	Soil	ppm	<b>76</b>	ND	ND	ND	ND	ND	<b>76</b>	ND	ND	ND
DTP-126 (3.5-4.0)	AD06393-008	9/7/2018	Soil	ppm	<b>0.88</b>	ND	ND	ND	0.13	ND	<b>0.75</b>	ND	ND	ND
DTP-127 (0.5-1.0)	AD06393-009	9/7/2018	Soil	ppm	<b>21</b>	ND	ND	ND	ND	ND	<b>21</b>	ND	ND	ND
DTP-127 (3.5-4.0)	AD06393-010	9/7/2018	Soil	ppm	<b>12</b>	ND	ND	ND	ND	ND	<b>12</b>	ND	ND	ND
DTP-128 (0.5-1.0)	AD06393-011	9/7/2018	Soil	ppm	<b>63</b>	ND	ND	ND	ND	ND	<b>63</b>	ND	ND	ND
DTP-128 (3.5-4.0)	AD06393-012	9/7/2018	Soil	ppm	<b>13</b>	ND	ND	ND	ND	ND	<b>13</b>	ND	ND	ND
DTP-129 (0.5-1.0)	AD06393-013	9/7/2018	Soil	ppm	<b>54</b>	ND	ND	ND	ND	ND	<b>54</b>	ND	ND	ND
DTP-129 (3.5-4.0)	AD06393-014	9/7/2018	Soil	ppm	<b>0.25</b>	ND	ND	ND	ND	ND	<b>0.25</b>	ND	ND	ND
DTP-130 (0.5-1.0)	AD06393-015	9/7/2018	Soil	ppm	<b>8.6</b>	ND	ND	ND	ND	ND	<b>8.6</b>	ND	ND	ND
DTP-130 (3.5-4.0)	AD06393-016	9/7/2018	Soil	ppm	<b>17</b>	ND	ND	ND	ND	ND	<b>17</b>	ND	ND	ND
DTP-131 (0.5-1.0)	AD06393-017	9/7/2018	Soil	ppm	<b>71</b>	ND	ND	ND	ND	ND	<b>71</b>	ND	ND	ND
DTP-131 (3.5-4.0)	AD06393-018	9/7/2018	Soil	ppm	0.15	ND	ND	ND	ND	ND	0.15	ND	ND	ND
DTP-132 (0-0.5')	AD06808-001	9/28/2018	Soil	ppm	<b>1.6</b>	ND	ND	ND	ND	ND	ND	<b>1.6</b>	ND	ND
DTP-133 (0-0.5')	AD06808-004	9/28/2018	Soil	ppm	0.078	ND	ND	ND	ND	ND	0.078	ND	ND	ND
DTP-133 (2-2.5')	AD06808-005	9/28/2018	Soil	ppm	<b>15</b>	ND	ND	ND	ND	ND	<b>15</b>	ND	ND	ND
DTP-134 (0-0.5')	AD06808-010	9/28/2018	Soil	ppm	<b>34</b>	ND	ND	ND	ND	ND	<b>34</b>	ND	ND	ND
DTP-134 (2-2.5')	AD06808-011	9/28/2018	Soil	ppm	<b>12</b>	ND	ND	ND	ND	ND	<b>12</b>	ND	ND	ND
DTP-135 (0-0.5')	AD06808-016	9/28/2018	Soil	ppm	<b>1.1</b>	ND	ND	ND	ND	ND	<b>1.1</b>	ND	ND	ND
DTP-135 (2-2.5')	AD06808-017	9/28/2018	Soil	ppm	<b>23</b>	ND	ND	ND	ND	ND	<b>23</b>	ND	ND	ND
DTP-136 (0-0.5')	AD06808-022	9/28/2018	Soil	ppm	<b>5.6</b>	ND	ND	ND	ND	ND	<b>5.6</b>	ND	ND	ND
DTP-136 (2-2.5')	AD06808-023	9/28/2018	Soil	ppm	<b>72</b>	ND	ND	ND	ND	ND	<b>72</b>	ND	ND	ND
DTP-137 (0-0.5')	AD06808-028	9/28/2018	Soil	ppm	<b>9.3</b>	ND	ND	ND	ND	ND	<b>9.3</b>	ND	ND	ND
DTP-137 (2-2.5')	AD06808-029	9/28/2018	Soil	ppm	<b>5.5</b>	ND	ND	ND	ND	ND	<b>5.5</b>	ND	ND	ND
DTP-138 (0-0.5')	AD06808-034	9/28/2018	Soil	ppm	<b>110</b>	ND	ND	ND	ND	ND	<b>110</b>	ND	ND	ND
DTP-138 (2-2.5')	AD06808-035	9/28/2018	Soil	ppm	<b>9.9</b>	ND	ND	ND	ND	ND	<b>9.9</b>	ND	ND	ND
DTP-139 (0-0.5')	AD06808-040	9/28/2018	Soil	ppm	<b>5.9</b>	ND	ND	ND	ND	ND	<b>5.9</b>	ND	ND	ND
DTP-139 (2-2.5')	AD06808-041	9/28/2018	Soil	ppm	<b>0.64</b>	ND	ND	ND	ND	ND	<b>0.64</b>	ND	ND	ND
NAC-1 (0-0.5')	AD06587-001	9/19/2018	Soil	ppm	<b>1.8</b>	ND	ND	ND	ND	ND	<b>1.8</b>	ND	ND	ND
NAC-1 (2-2.5')	AD06587-002	9/19/2018	Soil	ppm	<b>0.95</b>	ND	ND	ND	ND	ND	<b>0.95</b>	ND	ND	ND
NAC-2 (0-0.5')	AD06587-003	9/19/2018	Soil	ppm	<b>6.2</b>	ND	ND	ND	ND	ND	<b>6.2</b>	ND	ND	ND
NAC-2 (2-2.5')	AD06587-004	9/19/2018	Soil	ppm	<b>2.9</b>	ND	ND	ND	ND	ND	<b>2.9</b>	ND	ND	ND
NAC-3 (0-0.5')	AD06587-005	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-3 (2-2.5')	AD06587-006	9/19/2018	Soil	ppm	0.052	ND	ND	ND	ND	ND	0.052	ND	ND	ND
NAC-4 (0-0.5')	AD06587-007	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-4 (2-2.5')	AD06587-008	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-5 (0-0.5')	AD06587-009	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-5 (2-2.5')	AD06587-010	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

**TABLE 1**  
**Compiled PCB Sample Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

SAMPLE ID:	LAB ID:	SAMPLE DATE:	MATRIX	PCBS	Aroclor (Total)	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
<b>NJDEP NRSRS</b>				ppm	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>NA</b>	<b>NA</b>
<b>NJDEP IGWSRS</b>				ppm	<b>NA</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>NA</b>	<b>NA</b>
NAC-6 (0-0.5')	AD06587-011	9/19/2018	Soil	ppm	0.2	ND	ND	ND	ND	ND	0.2	ND	ND	ND
NAC-6 (2-2.5')	AD06587-012	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-7 (0-0.5')	AD06587-013	9/19/2018	Soil	ppm	<b>40</b>	ND	ND	ND	ND	ND	<b>40</b>	ND	ND	ND
NAC-7 (2-2.5')	AD06587-014	9/19/2018	Soil	ppm	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAC-8 (0-0.5')	AD06587-015	9/19/2018	Soil	ppm	0.076	ND	ND	ND	ND	ND	0.076	ND	ND	ND
NAC-8 (2-2.5')	AD06587-016	9/19/2018	Soil	ppm	0.11	ND	ND	ND	ND	ND	0.11	ND	ND	ND

Notes:

**Exceeds NJDEP Nonresidential Direct Contact Soil Remediation Standard (NRSRS)**

**Exceeds NJDEP Default Impact to Groundwater Soil Remediation Standard (IGWSRS)**

NA = No criterion derived for this contaminant.

ND - The compound was not detected above the laboratory reporting limit.

All results are in parts per million (ppm) unless otherwise noted



**TABLE 2**  
**Groundwater Analytical Results**  
**Former ASARCO Facility**  
**1160 State Street, Perth Amboy, NJ**

CLIENT ID: LAB ID: COLLECTION DATE: SAMPLE MATRIX: SAMPLE UNITS:	GWQS	NJ Vapor Intrusion Guidelines	MW-28 AD07333-005 10/25/2018 Aqueous ug/L		MW-29 AD07333-006 10/25/2018 Aqueous ug/L		MW-7R AD08834-001 1/29/2019 Aqueous ug/L		MW-9R AD08834-002 1/29/2019 Aqueous ug/L		MW-12SR AD08834-003 1/29/2019 Aqueous ug/L		MW-12DR AD08834-004 1/29/2019 Aqueous ug/L		MW-26 AD08834-005 1/29/2019 Aqueous ug/L		MW-27 AD08834-006 1/29/2019 Aqueous ug/L		MW-28 AD08834-007 1/29/2019 Aqueous ug/L		MW-29 AD08834-008 1/29/2019 Aqueous ug/L		MW-22 AD08834-009 1/29/2019 Aqueous ug/L		MW-23 AD08834-010 1/29/2019 Aqueous ug/L		MW-24 AD08834-011 1/29/2019 Aqueous ug/L			
			Analyte	ug/L	ug/L	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result
<b>PCBs</b>																														
Aroclor (Total)	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	0.42	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	0.38	0.25	ND	0.25
Aroclor-1016	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1221	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1232	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1242	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1248	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1254	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	0.42	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	0.38	0.25	ND	0.25
Aroclor-1260	0.5	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1262	NA	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25
Aroclor-1268	NA	NA	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25	ND	0.25

Notes:

**Exceeds Groundwater Quality Standard**

**Exceeds NJDEP Vapor Intrusion Guideline**

NA = No criterion derived for this contaminant.

ND - The compound was not detected above the laboratory reporting limit.

All results are in parts per billion (ppb) unless otherwise noted

## FIGURES

074.2833333° W

074.2666666° W

074.2500000° W

074.2333333° W

40.5500000° N

40.5500000° N

40.5333333° N

40.5333333° N

40.5166666° N

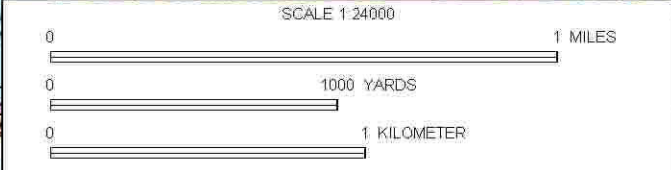
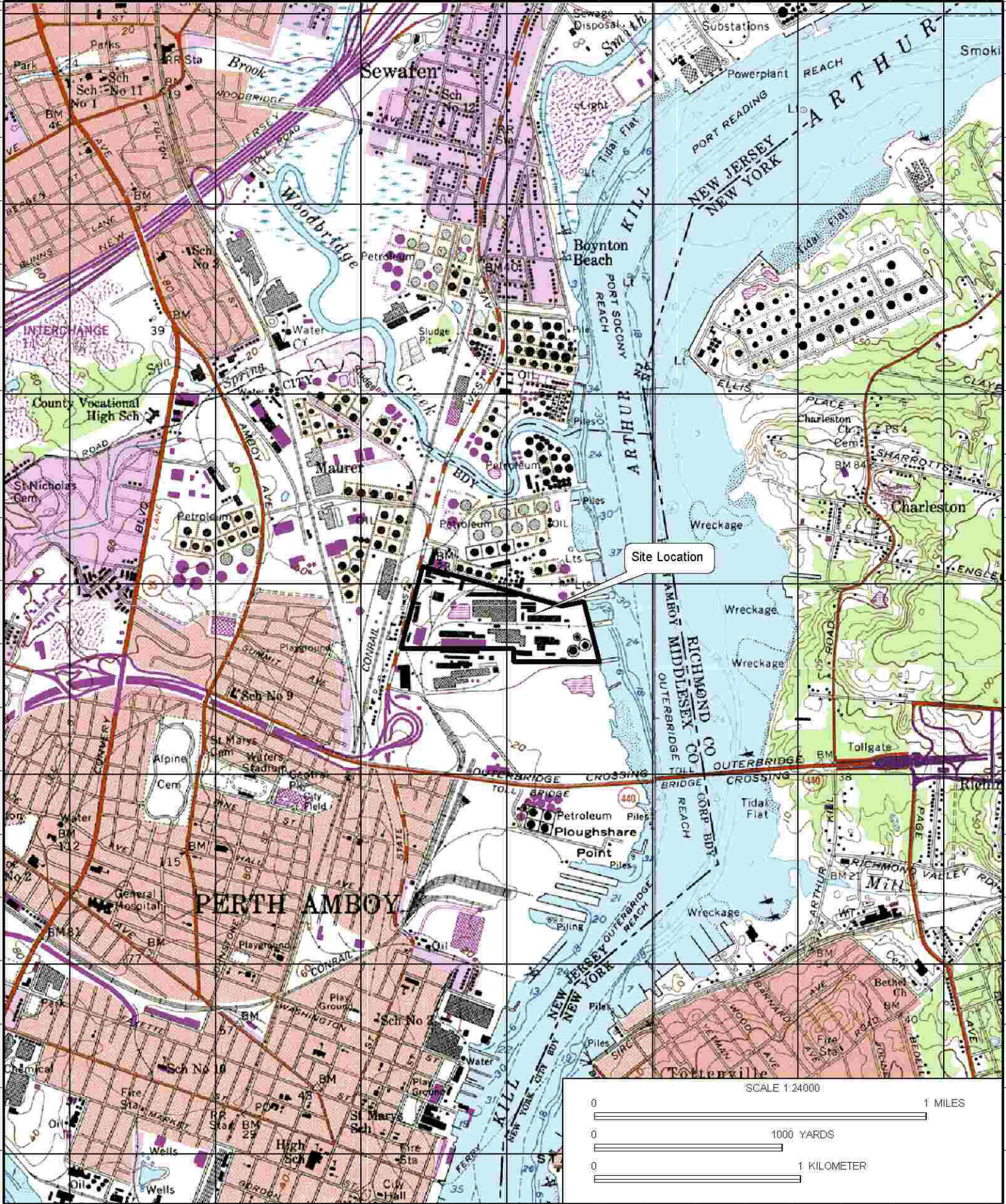
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074.2833333° W

074.2666666° W

074.2500000° W

074.2333333° W

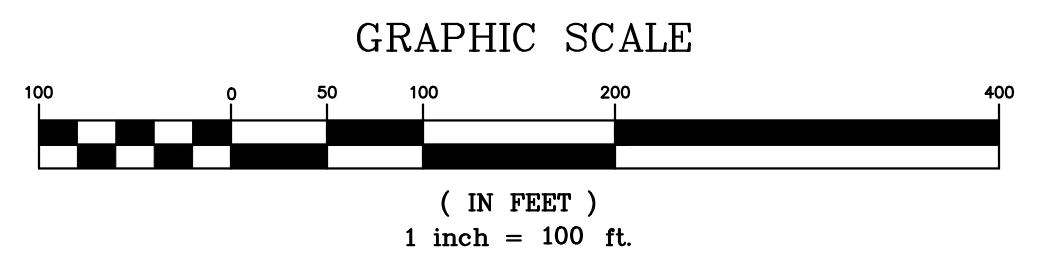
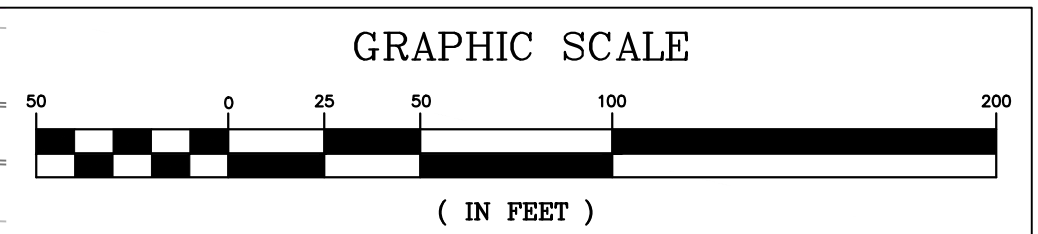
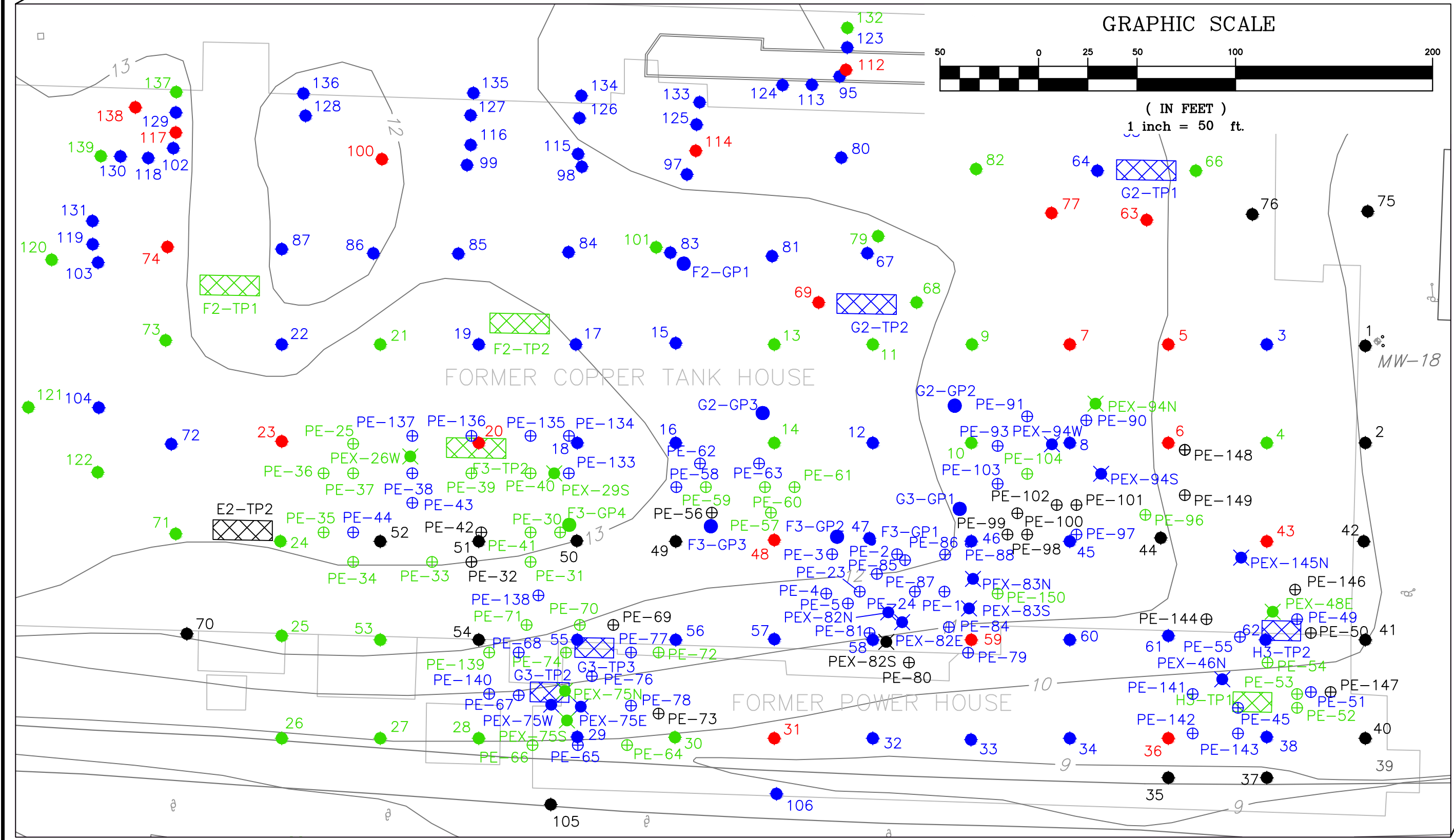
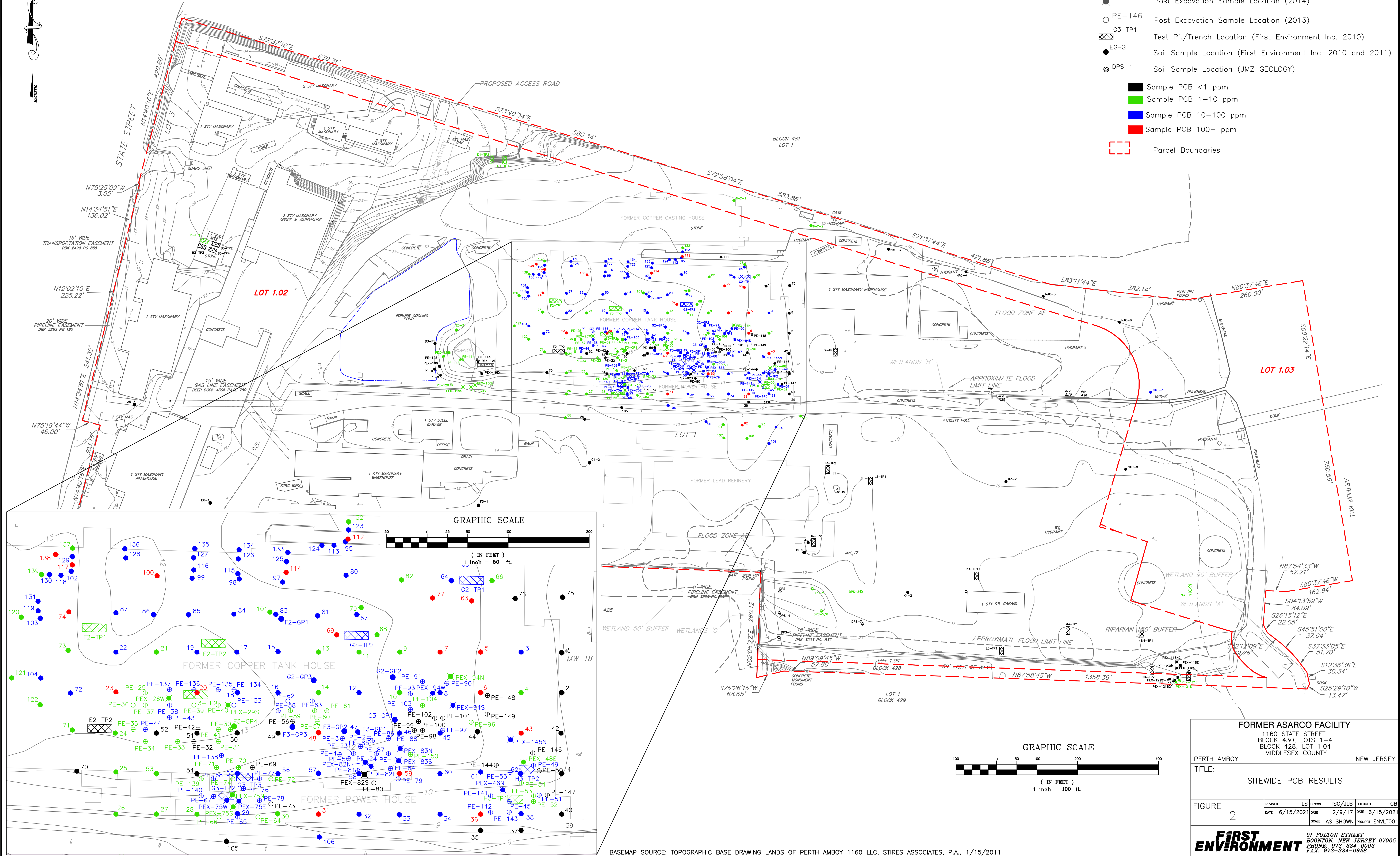


Name: PERTH AMBOY  
 Date: 9/27/2010  
 Scale: 1 inch equals 2000 feet

Location: 040.5323695° N 074.2582501° W NAD 83  
 Caption: Figure 1: Site Location Map  
 1160 State Street  
 Perth Amboy, New Jersey



- LEGEND
- 82 2018 Delineation Soil Sample Location
  - PEX-48E Post Excavation Sample Location (2014)
  - ⊕ PE-146 Post Excavation Sample Location (2013)
  - ⊗ G3-TP1 Test Pit/Trench Location (First Environment Inc. 2010)
  - E3-3 Soil Sample Location (First Environment Inc. 2010 and 2011)
  - ⊙ DPS-1 Soil Sample Location (JMZ GEOLOGY)
- 
- Sample PCB <1 ppm
  - Sample PCB 1-10 ppm
  - Sample PCB 10-100 ppm
  - Sample PCB 100+ ppm
- ▭ Parcel Boundaries



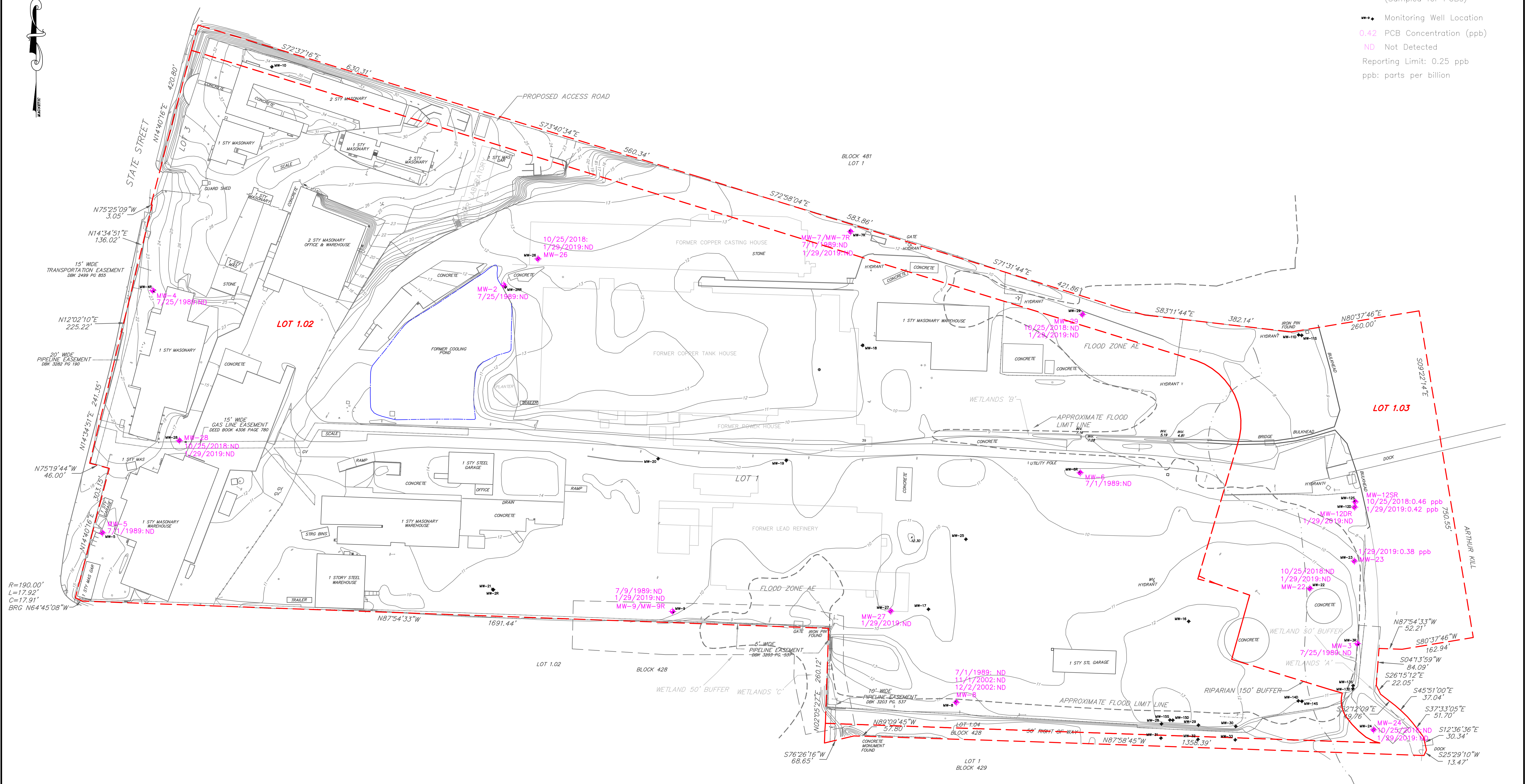
<b>FORMER ASARCO FACILITY</b>				
1160 STATE STREET BLOCK 430, LOTS 1-4 BLOCK 428, LOT 1.04 MIDDLESEX COUNTY				
PERTH AMBOY		NEW JERSEY		
TITLE: <b>SITESIDE PCB RESULTS</b>				
FIGURE	2	REVISED	LS	TSC/JLB
		DATE	6/15/2021	DATE
		DATE	2/9/17	DATE
		SCALE	AS SHOWN	PROJECT
				ENVT001
<b>FIRST ENVIRONMENT</b>		91 FULTON STREET BOONTON, NEW JERSEY 07005 PHONE: 973-334-0003 FAX: 973-334-0928		

BASEMAP SOURCE: TOPOGRAPHIC BASE DRAWING LANDS OF PERTH AMBOY 1160 LLC, STIRES ASSOCIATES, P.A., 1/15/2011

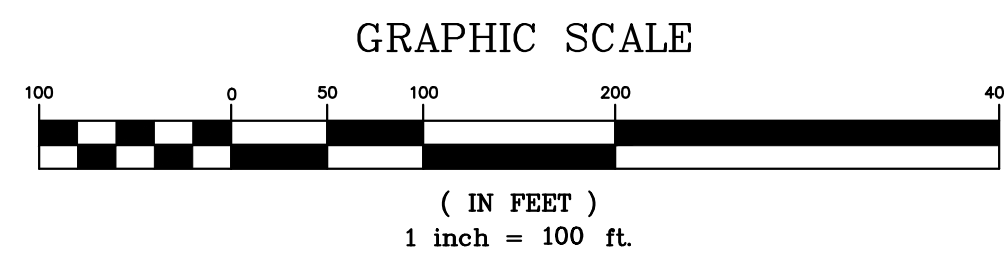


LEGEND

- MW-9 Monitoring Well Location (Sampled for PCBs)
- MW-4 Monitoring Well Location
- 0.42 PCB Concentration (ppb)
- ND Not Detected
- Reporting Limit: 0.25 ppb
- ppb: parts per billion

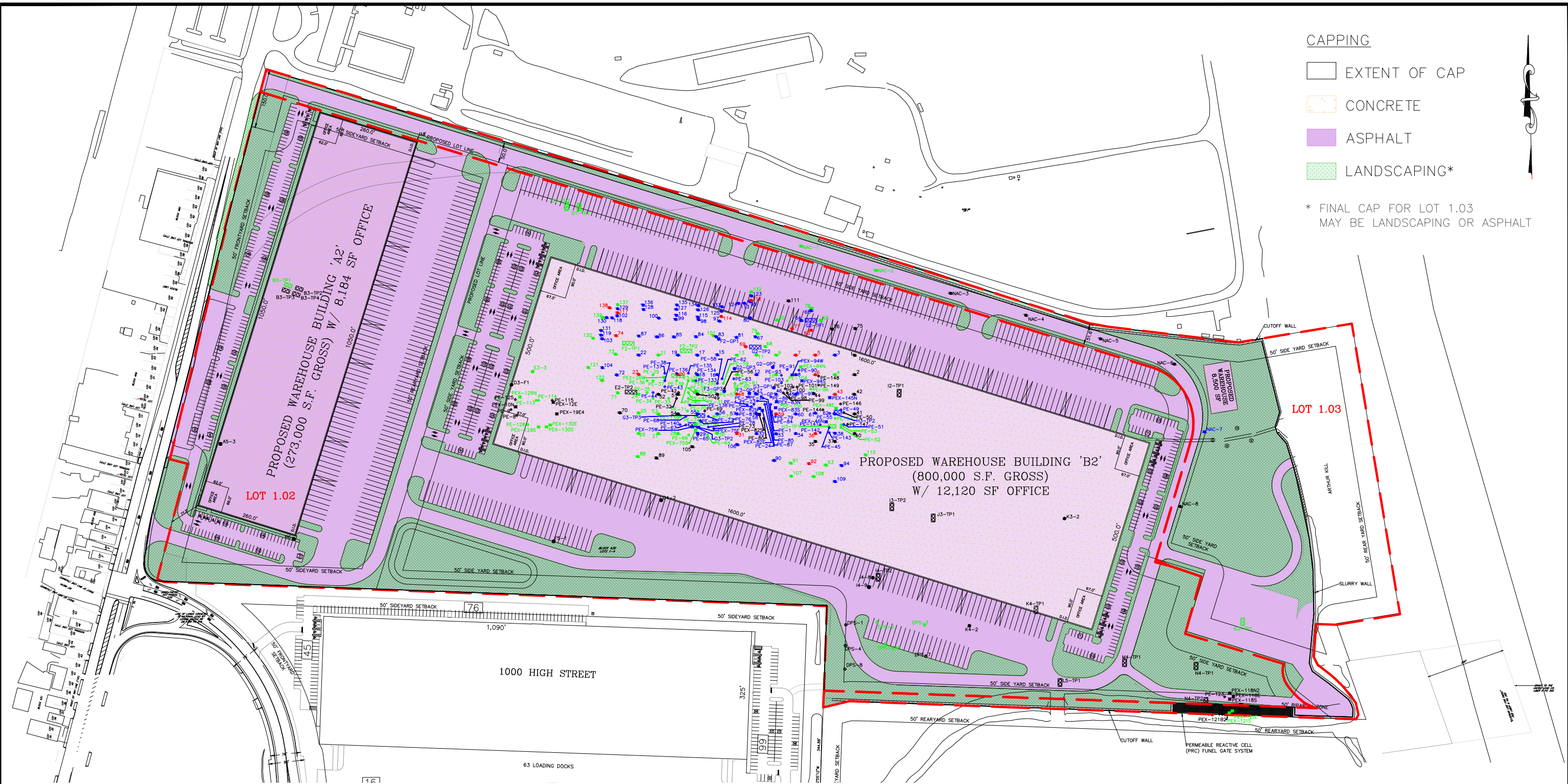


R=190.00'  
L=17.92'  
C=17.91'  
BRG N64°45'08"W



<b>FORMER ASARCO FACILITY</b>					
1160 STATE STREET BLOCK 430, LOTS 1-4 BLOCK 428, LOT 1.04 MIDDLESEX COUNTY					
PERTH AMBOY		NEW JERSEY			
TITLE: MONITORING WELL LOCATIONS					
FIGURE	3	REVISED	DATE	LS	TSC/JLB
		9/30/2021	2/9/17	9/30/2021	9/30/2021
		SCALE	AS SHOWN	PROJECT	ENVT001
		<b>FIRST ENVIRONMENT</b>			
		10 PARK PL. BLDG 1A, SUITE 504 BUTLER, NEW JERSEY 07405 PHONE: 978-334-0003 FAX: 978-334-0029			





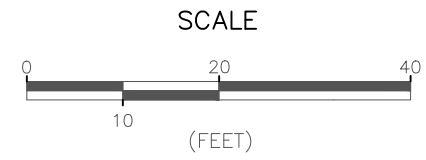
**CAPPING**

- EXTENT OF CAP
- CONCRETE
- ASPHALT
- LANDSCAPING\*

\* FINAL CAP FOR LOT 1.03  
MAY BE LANDSCAPING OR ASPHALT

**LEGEND**

- ▭ Parcel Boundaries
- 82 2018 Delineation Soil Sample Location
- ⊗ PEX-48E Post Excavation Sample Location (2014)
- ⊕ PE-146 Post Excavation Sample Location (2013)
- ⊗ G3-TP1 Test Pit/Trench Location (First Environment Inc. 2010)
- E3-3 Soil Sample Location (First Environment Inc. 2010 and 2011)
- ⊕ DPS-1 Soil Sample Location (JMZ GEOLOGY)
- Sample PCB <1 ppm
- Sample PCB 1-10 ppm
- Sample PCB 10-100 ppm
- Sample PCB 100+ ppm



FORMER ASARCO FACILITY  
1160 STATE STREET  
PERTH AMBOY MIDDLESEX COUNTY NEW JERSEY

CAPPING EXTENT WITH PCB OVERLAY

FIGURE 4	REVISED: CJM	DRAWN: LS	CHECKED: CJM
	DATE: 10/1/2021	SCALE: AS SHOWN	DATE: 9/17/2021

**FIRST ENVIRONMENT**  
BUTLER NEW JERSEY

**Legend**

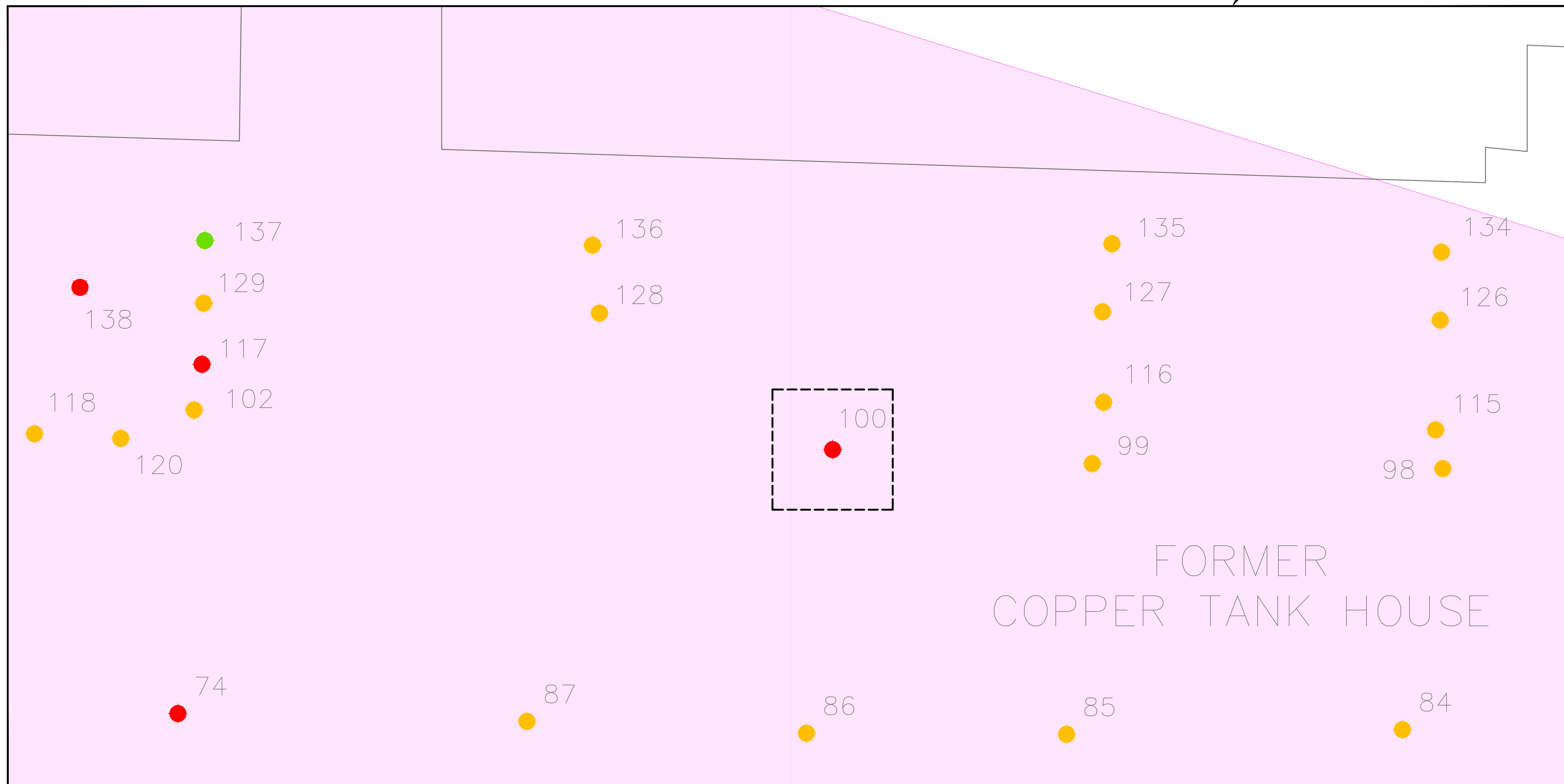
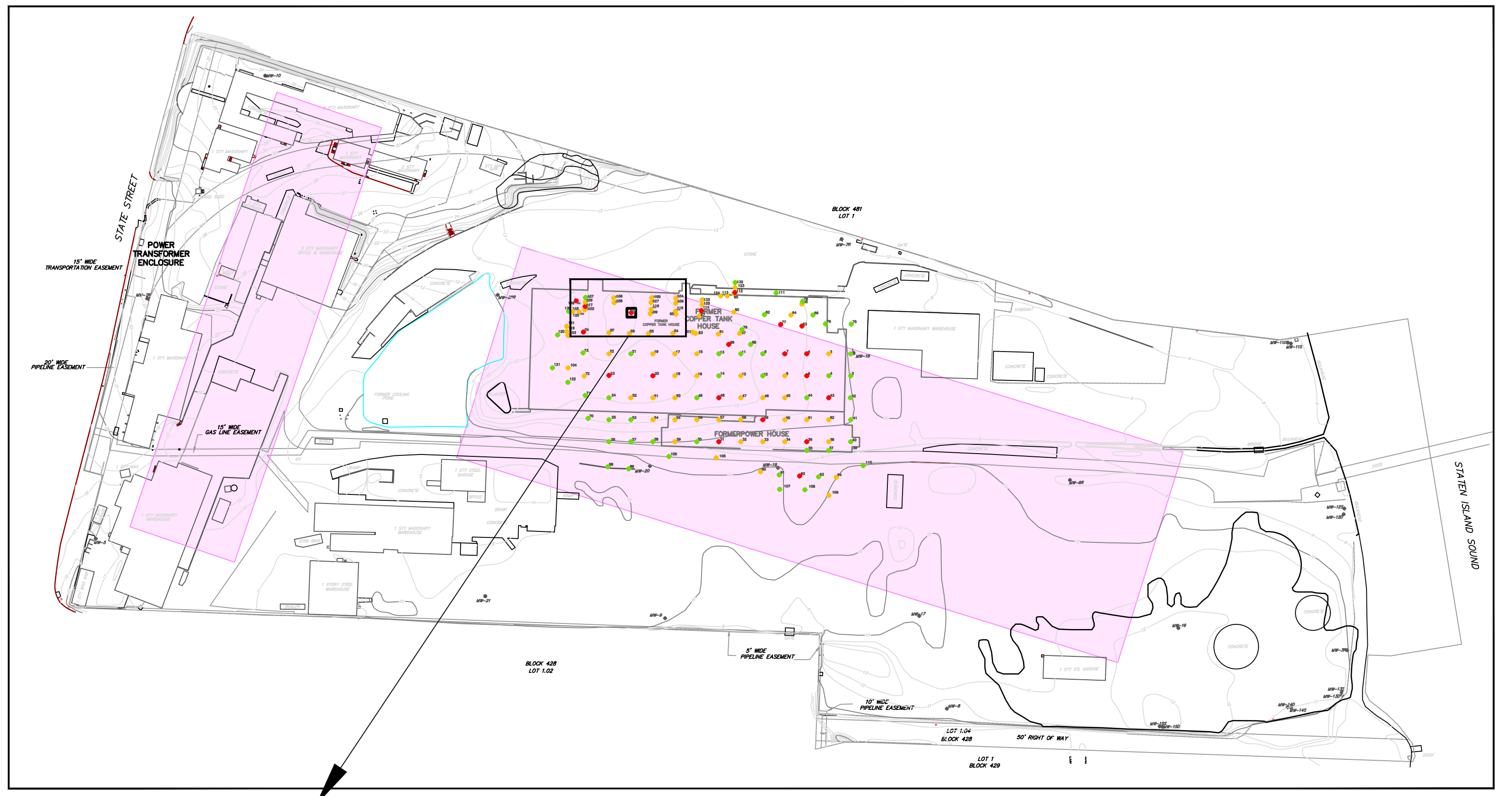
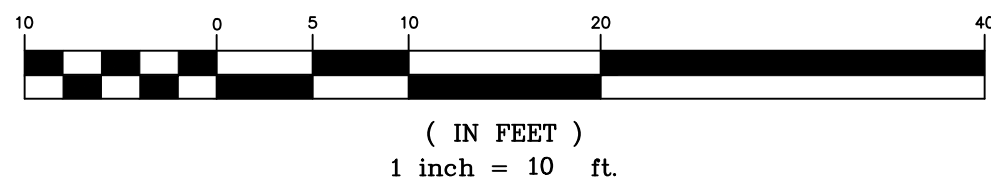
Existing Delineation Soil Boring Locations

- PCB Concentration: >100 ppm
- PCB Concentration: 10–100 ppm
- PCB Concentration: <10 ppm

- Proposed Building Footprint
- Proposed Excavation Area

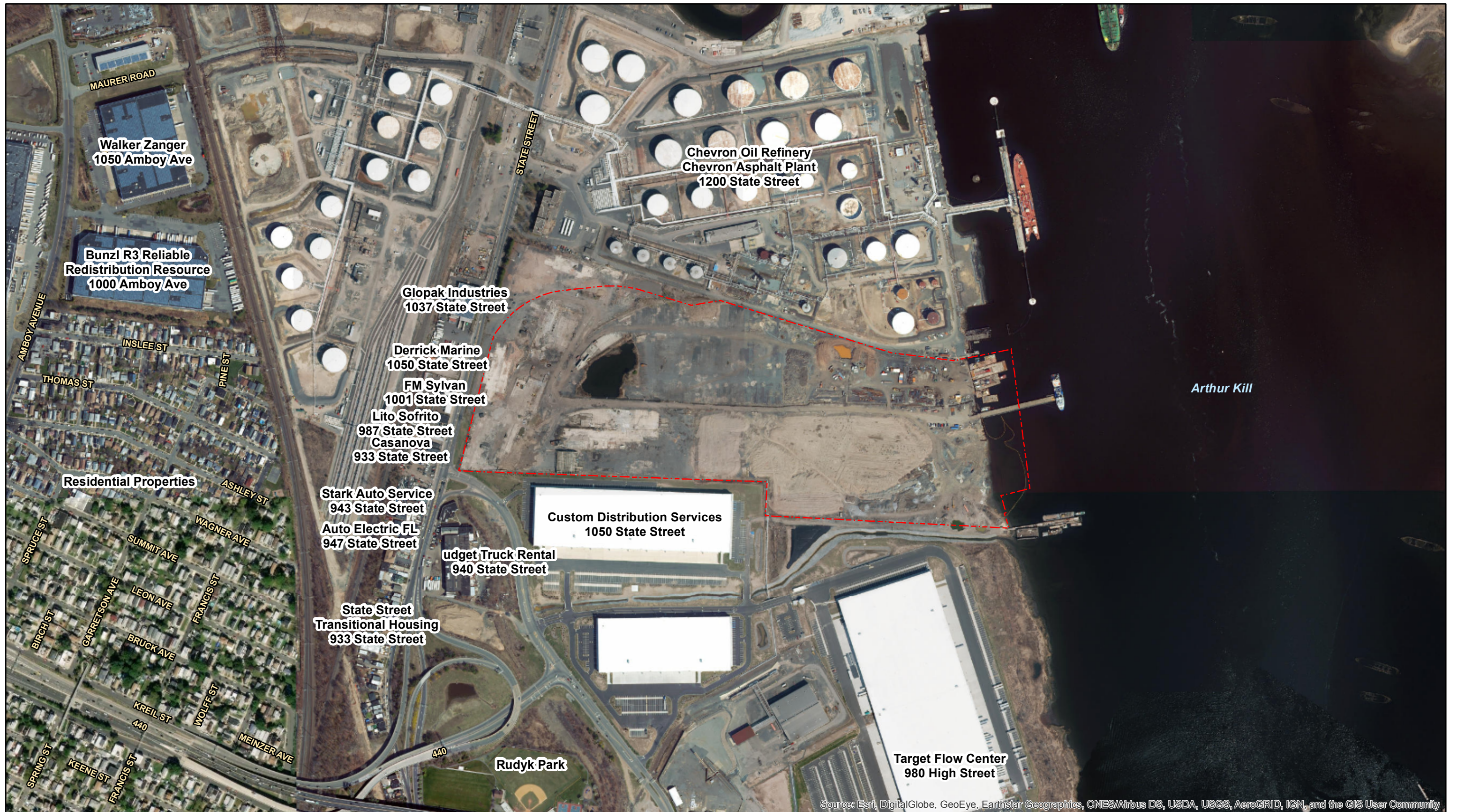


**GRAPHIC SCALE**

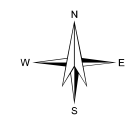


<b>FORMER ASARCO FACILITY</b>			
1160 STATE STREET BLOCK 430, LOTS 1-4 BLOCK 428, LOT 1.04 MIDDLESEX COUNTY			
CITY OF PERTH AMBOY,		NEW JERSEY	
TITLE:  PROPOSED EXCAVATION AREA			
FIGURE	5	DRAWN	LS
		CHECKED	TCB
		DATE	6/15/2021
		DATE	6/15/2021
		SCALE	1"=100'
		PROJECT	ENVL001
<b>FIRST ENVIRONMENT</b>		91 FULTON STREET BOONTON, NEW JERSEY 07005 PHONE: 973-334-0003 FAX: 973-334-0928	

SOURCE: STIRES ASSOCIATES, P.A., TOPOGRAPHIC BASE MAP; LANDS OF PERTH AMBOY 1160 LLC, DRAWING NO. 10186, 1/15/11  
MENLO ENGINEERING ASSOCIATES, INC. CONCEPTUAL SITE PLAN-CP3 4/7/17.



Legend  
 Property Boundary



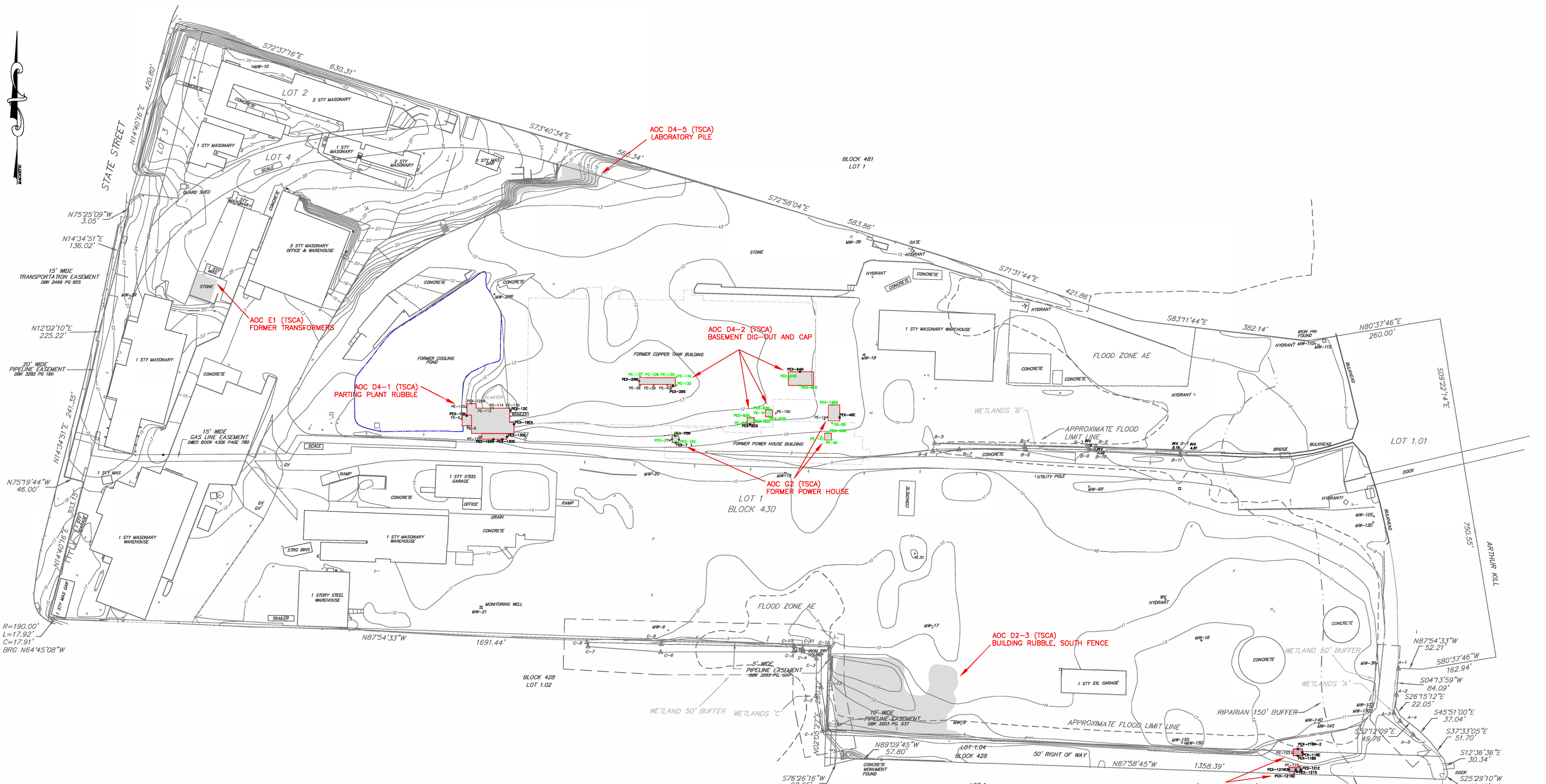
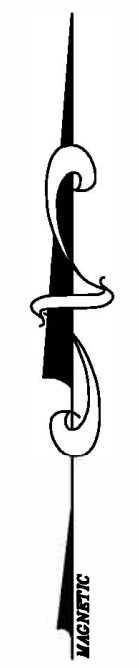
1 inch = 500 feet

**FIRST ENVIRONMENT**

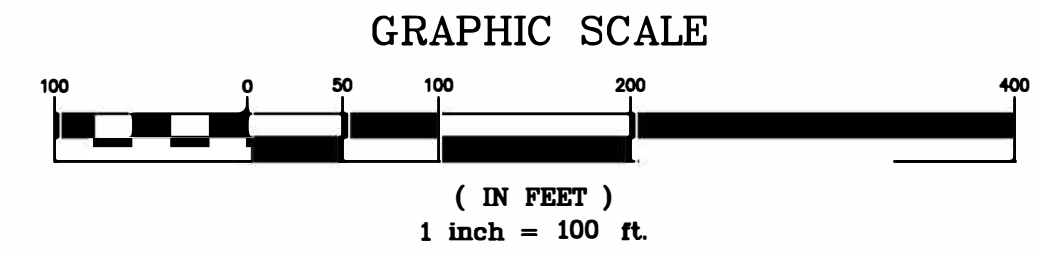
91 Fulton Street  
Boonton, New Jersey 07005

FORMER ASARCO FACILITY  
1160 STATE STREET  
Perth Amboy, Middlesex County, New Jersey  
FIGURE 6  
SITE VICINITY MAP

Revised	Drawn	Checked	Approved	Date
	LS	CJM	TCB	3/1/2019



- LEGEND**
- POST EXCAVATION SAMPLE LOCATION (2014)
- PEX-244N SAMPLE PCBs < 10 ppm
  - PEX-244E SAMPLE PCBs > 10 ppm and < 100 ppm
- POST EXCAVATION SAMPLE LOCATION (2013)
- PE-1 SAMPLE PCBs < 10 ppm
  - PE-1 SAMPLE PCBs > 10 ppm and < 100 ppm
- ⊙ MW-130 DEEP MONITORING WELL
  - ⊙ MW-136 SHALLOW MONITORING WELL
  - ⊙ MW-7R REPLACEMENT MONITORING WELL
  - PCB REMEDIATION AREA
  - FINAL PCB EXCAVATION AREA



BASEMAP SOURCE: TOPOGRAPHIC BASE DRAWING LANDS OF PERTH AMBOY 1160 LLC, STIRES ASSOCIATES, P.A., 1/15/2011

<b>FORMER ASARCO FACILITY</b>			
1160 STATE STREET BLOCK 430, LOTS 1-4 BLOCK 428, LOT 1.04 MIDDLESEX COUNTY			
PERTH AMBOY		NEW JERSEY	
TITLE: FINAL PCB EXCAVATION AREAS			
FIGURE 7	REVISION	DATE	PROJECT
	— DRAWN	TSC/JLB	ENVT001
	— CHECKED	CJM	
	— DATE	2/9/17	DATE
	— DATE	2/9/17	DATE
	— SCALE	AS SHOWN	PROJECT
			ENVT001

**FIRST ENVIRONMENT**

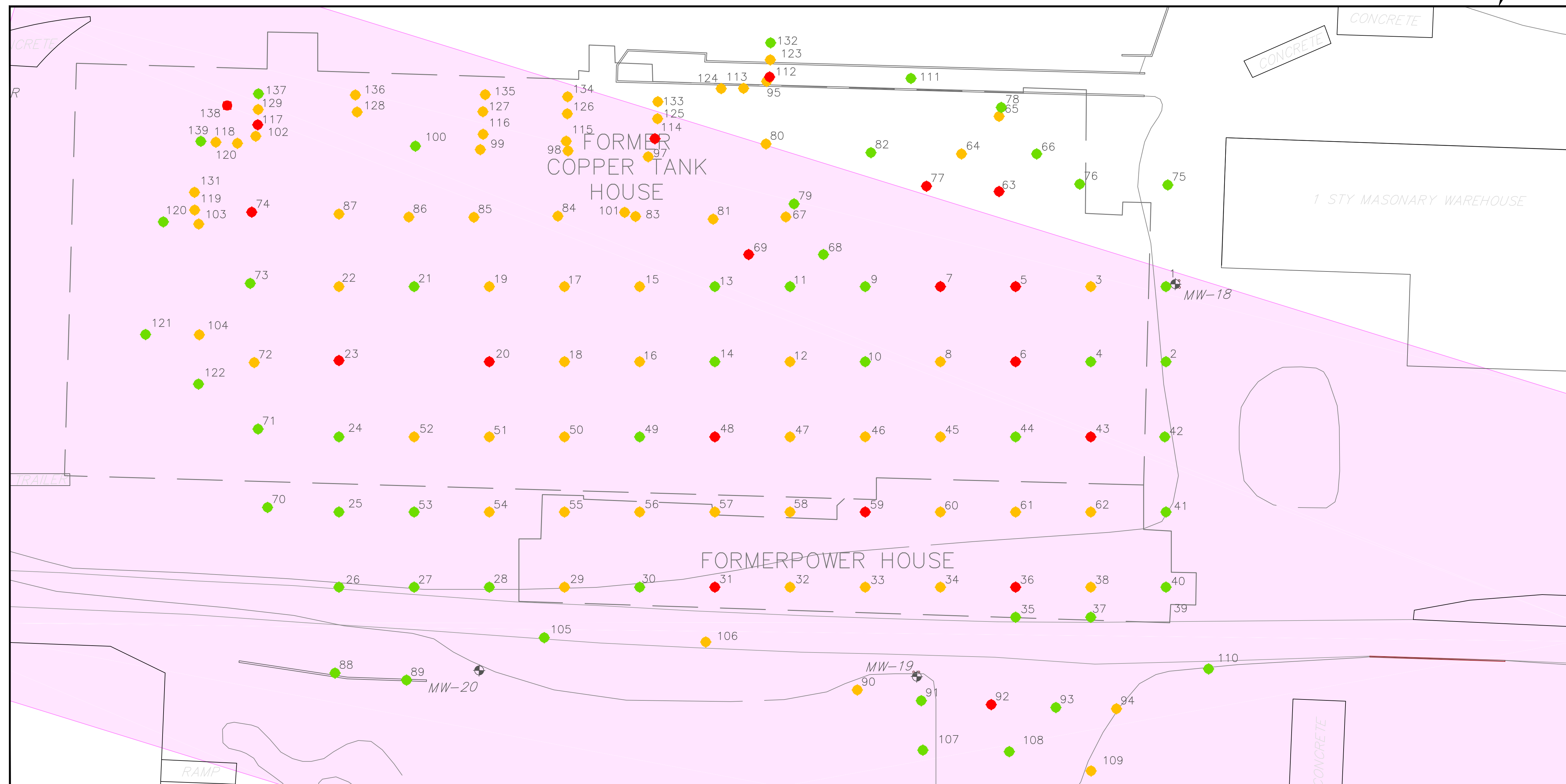
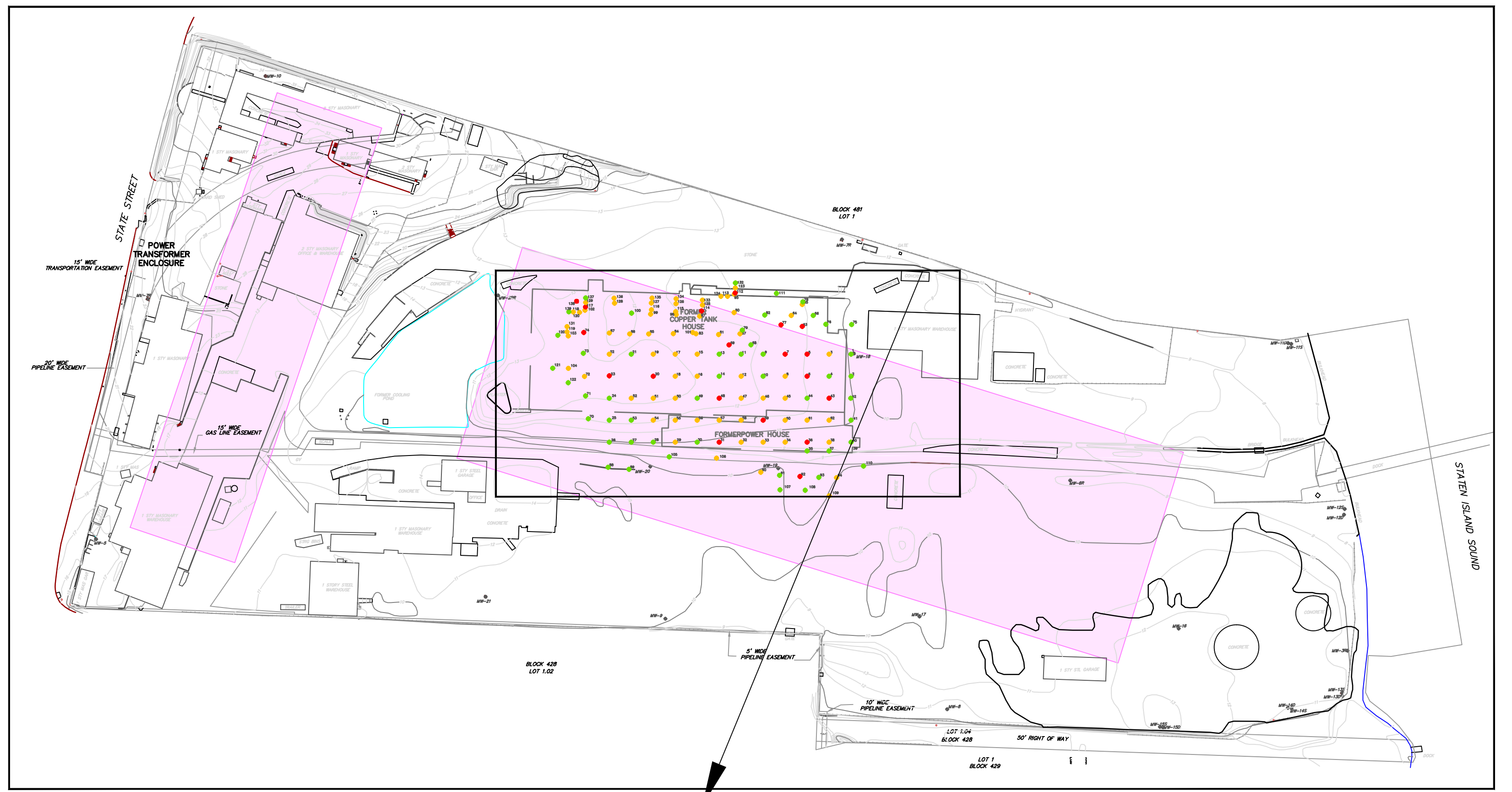
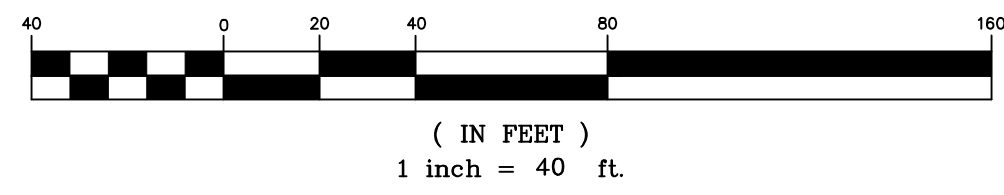
91 FULTON STREET  
BOONTON, NEW JERSEY 07005  
PHONE: 973-334-0008  
FAX: 973-334-0828

**Legend**

- Proposed Delineation Soil Boring Locations
- Existing Delineation Soil Boring Locations
- PCB Concentration: >100 ppm
- PCB Concentration: 10–100 ppm
- PCB Concentration: <10 ppm
- Proposed Building Footprint



**GRAPHIC SCALE**



**FORMER ASARCO FACILITY**  
 1160 STATE STREET  
 BLOCK 430, LOTS 1-4  
 BLOCK 428, LOT 1.04  
 MIDDLESEX COUNTY  
 CITY OF PERTH AMBOY, NEW JERSEY

TITLE:  
 DFLINATION SOIL BORING LOCATIONS

FIGURE	8	DRAWN	LS	CHECKED	TCB
		DATE	10/22/2018	DATE	10/22/2018
		SCALE	1"=100'	PROJECT	ENVL001

**FIRST ENVIRONMENT**  
 91 FULTON STREET  
 BOONTON, NEW JERSEY 07005  
 PHONE: 973-334-0003  
 FAX: 973-334-0928

SOURCE: STIRES ASSOCIATES, P.A., TOPOGRAPHIC BASE MAP: LANDS OF PERTH AMBOY 1160 LLC, DRAWING NO. 10186, 1/15/11  
 MENLO ENGINEERING ASSOCIATES, INC. CONCEPTUAL SITE PLAN-CP3 4/7/17.

## **APPENDIX A**

# PATHWAY ANALYSIS REPORT

FORMER ASARCO SITE  
PERTH AMBOY, NEW JERSEY

Prepared For:



**ENVIROANALYTICS GROUP**  
1515 Des Peres Road, Suite 300  
Saint Louis, Missouri 63131

Prepared By:



**ARM GROUP INC.**  
9175 Guilford Road  
Suite 310  
Columbia, Maryland 20146  
  
ARM Project No. 190268M

Respectfully Submitted,

A handwritten signature in black ink that reads "Neil Peters".

T. Neil Peters, P.E.  
Vice President

Revision 1 – June 17, 2019

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Table 3	Current/Future Conditions Soil EPC Summary.....	Following Text
Table 4.1	Composite Worker Daily Intake Values .....	Following Text
Table 4.2	Construction Worker Daily Intake Values.....	Following Text
Table 5.1	Non-cancer Toxicity Data (Oral & Dermal).....	Following Text
Table 5.2	Non-cancer Toxicity Data (Inhalation).....	Following Text
Table 6.1	Cancer Toxicity Data (Oral & Dermal) .....	Following Text
Table 6.2	Cancer Toxicity Data (Inhalation) .....	Following Text

### APPENDICES

Appendix A	Soil PCB ProUCL Output.....	Following Text
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## 1.0 INTRODUCTION

The purpose of this Pathway Analysis Report (PAR) is to assess the potential risk associated with PCBs in on-site soils and groundwater at the property located at 1160 State Street, Perth Amboy, Middlesex County, New Jersey (the “Site”). The PAR was prepared in accordance with the United States Environmental Protection Agency (USEPA) May 2017 Facility Approval Streamlining Toolbox (EPA530-F-17-002) Tool 4, TSCA Risk-Based PCB Cleanups Checklist to address the requirements of 40 CFR 761.61(c). It was developed following the EPA Risk Assessment Guidelines for Superfund (RAGS; EPA 1989, 2001, 2004, 2009) and more recent applicable guidance (e.g., EPA 2014, 2018).

The PAR includes the following three steps:

1. Hazard Identification
2. Exposure Assessment
3. Toxicity Assessment

Each of these steps is described in the following report sections and detailed in tables in the format of EPA RAGS, Part D (EPA 2001) Tables 1 through 6.

## 2.0 HAZARD IDENTIFICATION

The Site is located in a commercial/industrial area at 1160 State Street, Perth Amboy, Middlesex County, New Jersey. A Site Location map has been provided as **Figure 1**.

During 2010, remedial investigation activities identified PCB impacted material in eight areas of concern (AOCs) at the Site. A Self-Implementing Plan (SIP) for the remediation of PCB contamination was submitted to the USEPA on November 4, 2011. This plan was implemented in 2014 and involved the excavation and off-site disposal of PCB impacted material above 100 ppm and the relocation of PCB impacted material between 10 ppm and 100 ppm to an area to be designated as a Low Occupancy Area (LOA). Due to recent redevelopment plans for the property, however, a LOA is not suitable in its original proposed location.

To date, 449 sample locations represent current soil conditions with respect to PCBs. These samples were collected during site/remedial investigation activities conducted in 2006 and 2010, delineation activities performed in 2011 and 2013, post-excavation sampling in 2014, and further delineation activities performed in 2017/2018. Analytical results revealed additional impacted material that exhibit PCB concentrations above 100 ppm.

The investigations and results are summarized in the Current Conditions Report prepared by First Environment, Inc. in April 2019.

The PAR evaluated Site-wide data with respect to Total PCBs as well as individual Aroclors as constituents of potential concern (COPCs).

### 3.0 EXPOSURE ASSESSMENT

The Site is located in a commercial/ industrial area of Perth Amboy and is bounded by State Street on the west, a petroleum bulk storage facility on the north, the Arthur Kill on the east, and a former industrial site on the south. A portion of the Site's southern property line is adjacent to Cranes Creek which is located on the adjacent property.

The Site is currently developed with paved parking areas on the western portion of the property and gravel, paved or slag covered areas over the majority of the eastern portion of the Site. The Site is fully fenced and has 24/7 security supervision. No buildings currently exist on site as all former buildings have been demolished in anticipation of site redevelopment. Drinking water for the Site and the surrounding area is provided by the public utility.

The Site's northeast corner is currently occupied by a marine construction company. No other operations currently exist on site.

A risk assessment conceptual site model (CSM) allows for a broader understanding of the potential exposure pathways and receptors and how contaminants migrate between environmental media. A CSM that presents the contamination sources, fate and transport, exposure pathways and receptors for the site in its current condition is presented in **Figure 2**.

As indicated in the CSM, under the current condition there is a potential for "low occupancy" exposure of industrial workers to direct contact with impacted surface soil. The exposed surface soil can potentially be transported as wind-blown dust to on-site workers, or to workers on the adjacent industrial properties or other off-site receptors. In addition, the impacted soil may be transported by stormwater to adjacent surface water and sediment. Since public water is available in the area, use of groundwater is not a potential exposure pathway. As noted, all buildings on the site have been demolished so there is no potential indoor air exposure. A construction worker could come in direct contact with impacted soil during intrusive activities. The construction worker could also come in direct contact with shallow groundwater. However, exposure to groundwater is not considered significant since the maximum Total PCB concentration detected in groundwater on-site is below the drinking water Maximum Contaminant Level (MCL).

The proposed remedy for the Site will include the establishment of institutional (Deed Notice) and engineering (capping) controls. The engineering controls will include a site-wide cap to prevent contact with surface and subsurface soil. An institutional control in the form of a Deed Notice will restrict the use of the property to commercial/industrial purposes (i.e., not residential).

A CSM that presents potential future exposure pathways and receptors, following the implementation of the proposed remedy, is presented in **Figure 3**. As noted, the site-wide capping remedy eliminates the potential for direct contact exposure to impacted soil by a future industrial worker. The proposed cap also eliminates the potential for exposures associated with the migration of impacted soil in blowing dust or stormwater. The potential remains for direct contact exposure to soil by a future construction worker conducting intrusive activities. A

potential exists for future worker exposure through migration of vapor into proposed future buildings on the site. As noted above, use of groundwater is not a potential future exposure pathway due to public water supply in the area and the implementation of a groundwater use restriction for the site. The potential remains for direct contact exposure to shallow groundwater by a future construction worker conducting intrusive activities. However, as noted above, exposure to groundwater is not considered significant since the maximum Total PCB concentration detected in groundwater on-site is below the MCL. With respect to inhalation, the USEPA VISL Calculator was run to determine the Target Groundwater Concentration for Aroclor 1254 (the only detected Aroclor) in groundwater for commercial land use at a Target Cancer Risk of 1E-6 and a Target Hazard Quotient of 0.1. The resulting Target Groundwater Concentration is 1.9 ug/L, which is less conservative than the MCL of 0.5 ug/L. Therefore, the inhalation pathway was considered insignificant for site groundwater that is below the MCL.

**Table 1** presents a summary of the selection of exposure pathways and indicates which pathways are excluded as being incomplete and which are potentially complete pathways for each current and future receptor population.

The soil PCB data were screened against the USEPA Regional Screening Level (RSL) values for the composite worker scenario, with a target cancer risk of 1e-6 and a target non-cancer hazard quotient of 0.1, to determine whether individual Aroclors, as well as Total PCBs represent constituents of potential concern (COPCs) in the site soils. Similarly, the site groundwater data were screened against both the MCL for Total PCBs and the Vapor Intrusion Screening Level (VISL) target concentration determined using the USEPA VISL calculator for a target cancer risk of 1e-6. While there are RSLs established for the individual Aroclors for cancer risk, non-cancer RSLs are available only for Aroclor 1016 and 1254. The non-cancer RSL for PCB-1016 was applied for PCB-1221, 1232 and 1242 while the PCB-1254's RSL was applied for PCB-1248, and 1260. The cancer and non-cancer RSLs for PCB-1254 were used for PCB-1262 and 1268. This is consistent with methodology used for risk assessments on Superfund sites in Region 2 (EPA 2017).

**Table 2.1** summarizes the screening of soil PCB data. As indicated, six individual Aroclors were detected in the soil. Four Aroclors (PCB-1242, 1248, 1254 and 1260) were present at a maximum concentration in excess of the relevant COPC screening value. Two of the individual Aroclors (PCB-1248 and 1260) were eliminated as COPCs because the detection frequency is less than 5% in a dataset with a minimum of 20 samples. Thus only two individual Aroclors (PCB-1242 and 1254) are considered to be COPCs. Total PCBs can serve as a representative COPC for the sum of the individual Aroclors. **Table 2.2** presents the screening for COPCs in groundwater. Only PCB-1254 was detected in the groundwater. The maximum concentration of Total PCBs in groundwater is less than the MCL or the VISL. Therefore, no COPCs have been identified in groundwater.

A statistical analysis was performed using the ProUCL software (version 5.0) developed by the USEPA to determine representative reasonable maximum exposure (RME) values for the exposure point concentration (EPC) for Total PCBs in soil. EPCs are the 95 percent upper confidence limit (UCL) of the arithmetic mean or maximum observed concentration of an

individual COPC, whichever is lower. **Table 3** summarizes the result of the statistical evaluation. The output from the ProUCL run is provided in Appendix A.

The USEPA RSL On-line Calculator ([https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl\\_search](https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search)) was used to derive relevant risk-based cleanup levels. **Table 4.1** summarizes the exposure factors for the current industrial worker exposure to the sole COPC identified in the soil (Total PCBs). As noted, the proposed capping remedy eliminates the potential for future industrial worker exposure to site soil. The only identified potentially complete exposure pathway for the future industrial worker is volatilization from soil to indoor air. The EPA VISL Calculator does not provide target concentrations for screening volatilization from soil. However, due to the low volatility of PCBs and the expected attenuation from the proposed soil cap and building floor slab, this pathway is considered insignificant. **Table 4.2** summarizes the exposure factors to derive used for the current and future construction worker. As discussed, there were no COPCs identified in groundwater.

## 4.0 TOXICITY ASSESSMENT

Current toxicity values for the COPCs were identified using the database in the USEPA on-line RSL calculator, which provides values from a hierarchy of established sources (EPA 2003, 2019). Subchronic toxicity values are provided for use in the construction worker scenario. The relevant non-cancer toxicity values are summarized in **Tables 5.1** and **5.2**. The cancer toxicity values are provided in **Tables 6.1** and **6.2**.

## 5.0 SUMMARY

Under the current condition there is a potential for “low occupancy” exposure of industrial workers to direct contact with impacted surface soil. The exposed surface soil can potentially be transported as wind-blown dust to on-site workers, or to workers on the adjacent industrial properties or other off-site receptors. In addition, the impacted soil may be transported by stormwater to adjacent surface water and sediment. Since public water is available in the area, use of groundwater is not a potential exposure pathway. All buildings on the site have been demolished so there is no potential indoor air exposure.

A construction worker could come in direct contact with impacted soil during intrusive activities. The construction worker could also come in direct contact with shallow groundwater. However, exposure to groundwater is not considered significant since the maximum Total PCB concentration detected in groundwater on-site is below the drinking water MCL.

The proposed remedy for the Site will include the establishment of institutional (Deed Notice) and engineering (capping) controls. The engineering controls will include a site-wide cap to prevent contact with surface and subsurface soil. The cap will include at least a two-foot thickness of material that meets the New Jersey standards for alternate fill over the entire site, covered by asphalt paving or concrete floor over most of the site. An institutional control in the form of a Deed Notice will restrict the use of the property to commercial/industrial purposes (i.e., not residential).

The proposed site-wide capping remedy would eliminate the potential for direct contact exposure to impacted soil by a future industrial worker. The proposed cap also eliminates the potential for exposures associated with the migration of impacted soil in blowing dust or stormwater. Use of groundwater is not a potential future exposure pathway due to public water supply in the area and the implementation of a groundwater use restriction for the site.

The potential remains for direct contact exposure to soil or shallow groundwater by a future construction worker conducting intrusive activities. However, as noted above, exposure to groundwater is not considered significant since the maximum Total PCB concentration detected in groundwater on-site is below the MCL.

A potential exists for future worker exposure through migration of vapor into proposed future buildings on the site. However, due to the low volatility of PCBs and the expected attenuation from the proposed soil cap and building floor slab, this pathway is considered insignificant.

Therefore, it is our conclusion that the proposed remedy of capping and institutional controls addresses all potentially complete exposure pathways for industrial workers. Work practices, such as a requirement to use OSHA 1910.120 trained workers, are necessary to mitigate risk to current and future construction workers that could come in direct contact with site soils.



## 6.0 REFERENCES

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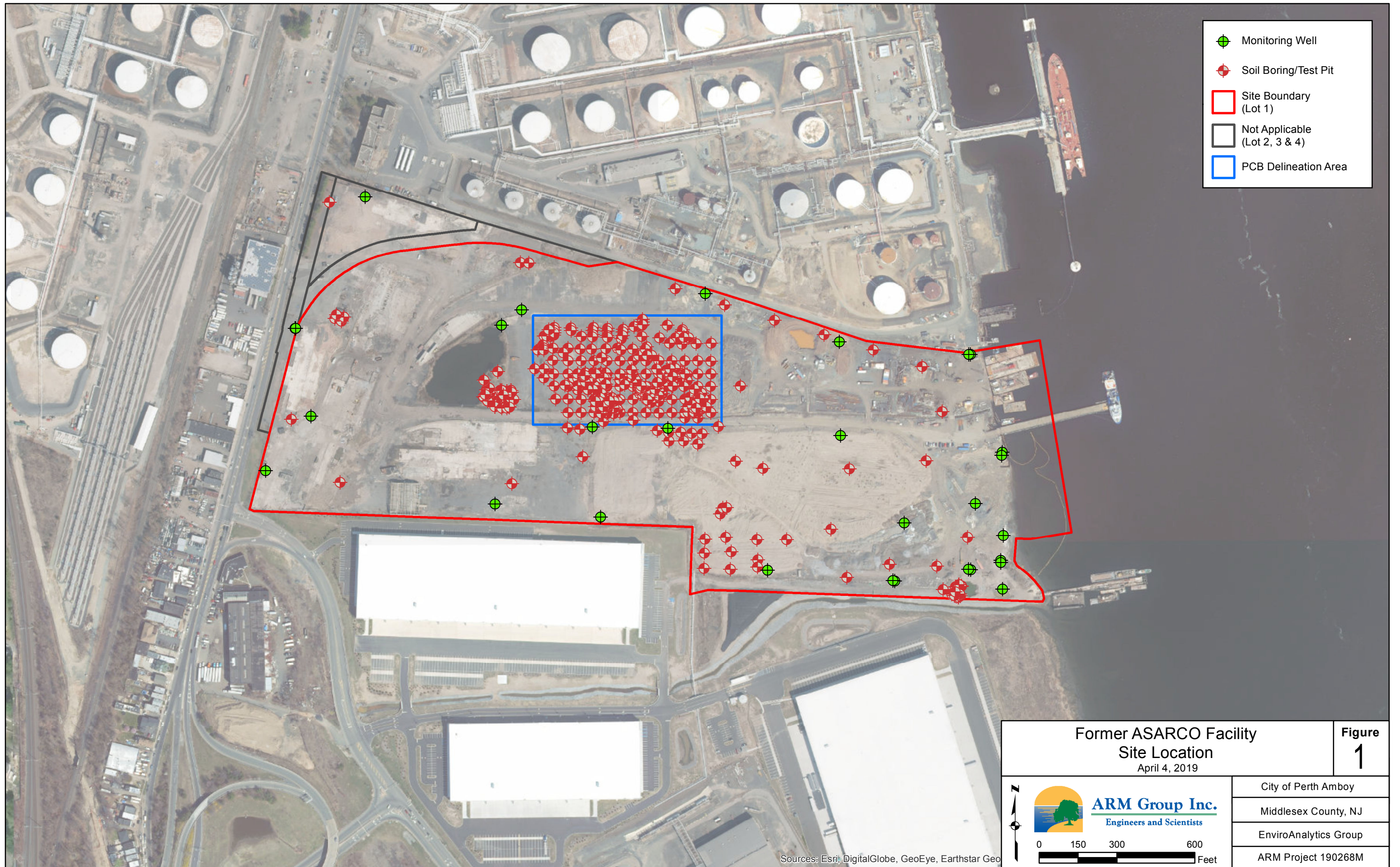
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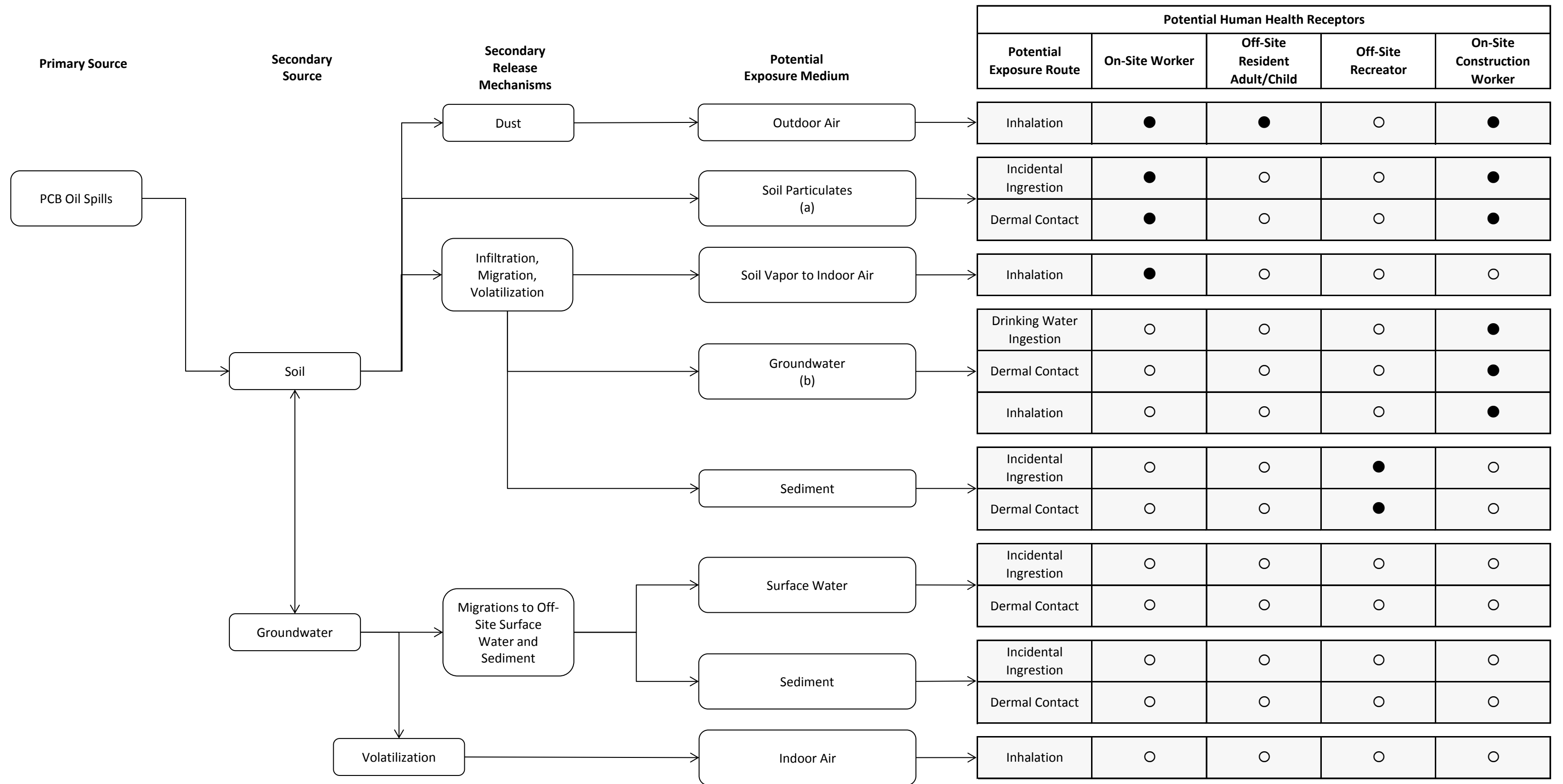
## **FIGURES**

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**Figure 2**  
**Human Health Conceptual Site Model**  
**Current Condition**



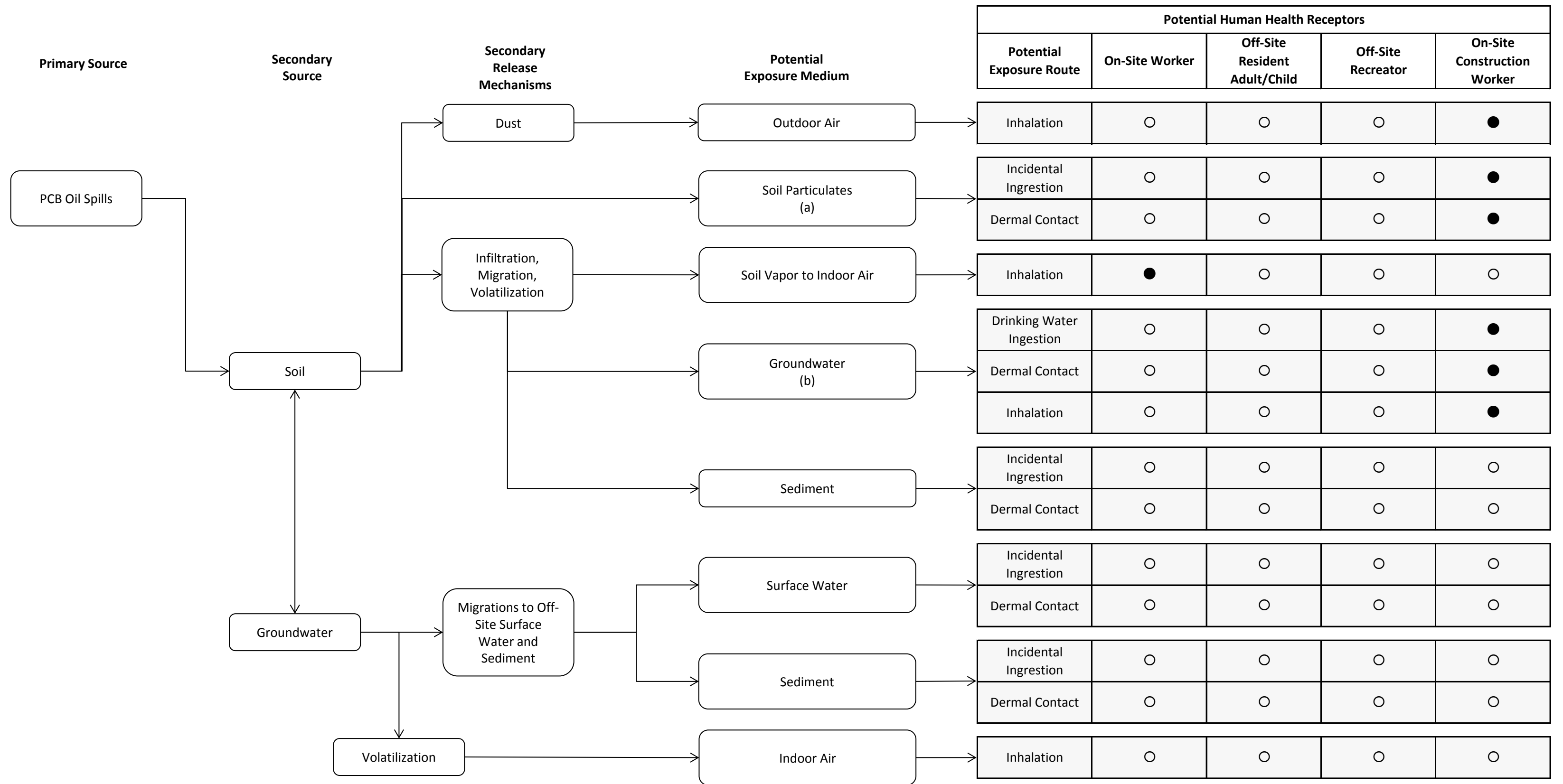
**NOTES**

- Pathway assumed to be complete.
- Pathway assumed to be incomplete.

(a) On-site worker assumes exposure to cap only, while a construction worker assumes underlying

(b) Although public water is supplied for potable use, there is a potential for dermal contact with groundwater for the construction worker

**Figure 3  
Human Health Conceptual Site Model  
After Capping**



**NOTES**

- Pathway assumed to be complete.
- Pathway assumed to be incomplete.

(a) On-site worker assumes exposure to cap only, while a construction worker assumes underlying

(b) Although public water is supplied for potable use, there is a potential for dermal contact with groundwater for the construction worker

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## **TABLES**

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TABLE 1  
SELECTION OF EXPOSURE PATHWAYS  
Former Asarco Site  
Perth Amboy, New Jersey

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Surface Soil	Surface Soil	On-Site	Industrial Worker	Adult	Ingestion	Quant	Retained
	Surface Soil	Surface Soil	On-Site	Industrial Worker	Adult	Dermal	Quant	Retained
	Particulates in On-site Air	Air	On-site	Industrial Worker	Adult	Inhalation	Quant	Retained
	Volatilization to Ambient Air	Air	On-site	Industrial Worker	Adult	Inhalation	Qual	Retained
	On-Site Groundwater	Groundwater	On-site	Industrial Worker	Adult	None	None	Excluded
	Off-Site Groundwater	Groundwater	None	Off-site Receptor	NA	None	None	Excluded-area supplied by public water
	On-Site Groundwater	Off-Site Surface Water	Off-site Surface Water	Off-Site Recreator	Adult	None	None	Excluded-Groundwater concentrations below MCLs-no off-site migration
	Particulates in Off-site Air	Air	Air	Off-Site Worker	Adult	Inhalation	Qual	Retained
Future	Surface Soil	Surface Soil	On-Site	Industrial Worker	Adult	None	None	Excluded-Entire Site to be capped
	Particulates in On-site Air	Air	On-site	Industrial Worker	Adult	Inhalation	None	Excluded-Entire Site to be capped
	Volatilization to Indoor Air	Air	On-site	Industrial Worker	Adult	Inhalation	Quant	Retained
	On-Site Groundwater	Groundwater	None	Industrial Worker	Adult	None	None	Excluded-site supplied by public water
	Surface/Sub-surface Soil	Surface/Sub-surface Soil	On-site	Construction Worker	Adult	Incidental Ingestion	Quant	Retained
	Surface/Sub-surface Soil	Surface/Sub-surface Soil	On-site	Construction Worker	Adult	Dermal	Quant	Retained
	Particulates in On-site Air	Air	On-site	Construction Worker	Adult	Inhalation	Quant	Retained
	Volatilization to Ambient Air	Air	On-site	Construction Worker	Adult	Inhalation	Qual	Retained
	Off-Site Groundwater	Groundwater	None	Off-site Receptor	NA	None	None	Excluded-Groundwater concentrations below MCLs-no off-site migration
	On-Site Groundwater	Off-Site Surface Water	Off-site Surface Water	Off-Site Recreator	Adult	None	None	Excluded-Groundwater concentrations below MCLs-no off-site migration
	Particulates in Off-site Air	Air	Air	Off-Site Worker	Adult	Inhalation	None	Excluded-Entire Site to be capped

TABLE 2.1  
 OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 Former Asarco Site  
 Perth Amboy, New Jersey

Scenario Timeframe:	<b>Current</b>
Medium:	<b>Soil</b>
Exposure Medium:	<b>Soil</b>

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
On-site	53469-21-9	Aroclor 1242	ND	1,200	mg/kg	DTP-100 (0.5-1.0)	0.08	NA	1,200	NA	5.1/0.95	1	NJDEP NRSRS	N	Included in Total PCBs
	12672-29-6	Aroclor 1248	ND	70	mg/kg	PEX-75E	0.004	NA	70	NA	1.5/0.95	1	NJDEP NRSRS	N	Included in Total PCBs
	11097-69-1	Aroclor 1254	ND	520	mg/kg	PE-16 (5-5.5)	0.90	NA	520	NA	1.5/0.97	1	NJDEP NRSRS	N	Included in Total PCBs
	11096-82-5	Aroclor 1260	ND	21	mg/kg	DTP-100 (3.5-4.0)	0.01	NA	21	NA	1.5/0.99	1	NJDEP NRSRS	N	Included in Total PCBs
	37324-23-5	Aroclor 1262	ND	0.35	mg/kg	B3-TP2 (0.5-1.0')	0.006	NA	0.35	NA	1.5/0.97	NA	NA	N	Included in Total PCBs
	11100-14-4	Aroclor 1268	ND	0.17	mg/kg	N4-TP2 (0-0.5')	0.002	NA	0.17	NA	1.5/0.97	NA	NA	N	Included in Total PCBs
	1336-36-3	Total PCBs	ND	1,200	mg/kg	DTP-100 (0.5-1.0)	0.91	0.027-0.06	1,200	NA	1.5/0.95	1	NJDEP NRSRS	Y	Retained
	12674-11-2	Aroclor 1016	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11104-28-2	Aroclor 1221	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11141-16-5	Aroclor 1232	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected

Footnote Instructions:

- (2) Maximum value used for screening.
- (3) No background values.
- (4) Screening toxicity values obtained from the EPA Composite Worker Soil RSL Table (<https://semspub.epa.gov/work/HQ/197422.pdf>). Total PCBs uses Aroclor 1254 non-cancer screening toxicity value.



TABLE 2.2  
 OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 Former Asarco Site  
 Perth Amboy, New Jersey

Scenario Timeframe:	<b>Current</b>
Medium:	<b>Groundwater</b>
Exposure Medium:	<b>Air</b>

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
On-site	11097-69-1	Aroclor 1254	ND	0.46	ug/L	MW-12SR	0.18	0.25	0.46	NA	1.9	0.5	MCL	N	Below Screening Value
	1336-36-3	Total PCBs	ND	0.46	ug/L	MW-12SR	0.18	0.25	0.46	NA	1.9	0.5	MCL	N	Below Screening Value
	12674-11-2	Aroclor 1016	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11104-28-2	Aroclor 1221	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11141-16-5	Aroclor 1232	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	53469-21-9	Aroclor 1242	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	12672-29-6	Aroclor 1248	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11096-82-5	Aroclor 1260	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	37324-23-5	Aroclor 1262	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected
	11100-14-4	Aroclor 1268	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	Not Detected

Footnote Instructions:

- (2) Maximum value used for screening.
- (3) No background values.
- (4) Screening toxicity value obtained from EPA Vapor Intrusion Screening Levels (VISL - <https://www.epa.gov/vaporintrusion/vapor-intrusion-database>).

TABLE 3 RME  
 EXPOSURE POINT CONCENTRATION SUMMARY  
 REASONABLE MAXIMUM EXPOSURE  
 Former Asarco Site  
 Perth Amboy, New Jersey

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
On-site	Total PCBs	mg/kg	36.17	59.76	1,200	59.76	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL

TABLE 4.1 RME  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
REASONABLE MAXIMUM EXPOSURE  
Former Asarco Site  
Perth Amboy, New Jersey

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Receptor Population	Exposure Route	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name				
Composite Worker	Dermal (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk	1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator				
				THQ	Target Hazard Quotient	0.1	unitless	EPA RSL Calculator Default					
				AT-C	Averaging Time - Carcinogenic	25550	days	EPA RSL Calculator Default					
				AT-N	Averaging Time - Noncarcinogenic	365	days	EPA RSL Calculator Default					
				LT	Lifetime	70	yr	EPA RSL Calculator Default					
				ED	Exposure Duration	25	yr	EPA RSL Calculator Default					
				BW	Body Weight	80	kg	EPA RSL Calculator Default					
				EF	Exposure Frequency	250	days/yr	EPA RSL Calculator Default					
				RfD	Ingestion Reference Dose	Chemical Specific	mg/kg-day	EPA RSL Calculator					
				CSF	Ingestion Slope Factor	Chemical Specific	(mg/kg-day) <sup>-1</sup>	EPA RSL Calculator					
				GIABS	Gastrointestinal Absorbance	Chemical Specific	unitless	EPA RSL Calculator					
				SA	Exposed Skin Surface Area	3527	cm <sup>2</sup> /day	EPA RSL Calculator Default					
				AF	Adherence Factor	0.12	mg/cm <sup>2</sup>	EPA RSL Calculator Default					
				ABS	Dermal Absorbance	Chemical Specific	unitless	EPA RSL Calculator					
				CF1	Conversion Factor	1.00E-06	kg/mg	EPA RSL Calculator					
	Ingestion (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk	1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator				
				THQ	Target Hazard Quotient	0.1	unitless	EPA RSL Calculator Default					
				AT-C	Averaging Time - Carcinogenic	25550	days	EPA RSL Calculator Default					
				AT-N	Averaging Time - Noncarcinogenic	365	days	EPA RSL Calculator Default					
				LT	Lifetime	70	yr	EPA RSL Calculator Default					
				ED	Exposure Duration	25	yr	EPA RSL Calculator Default					
				BW	Body Weight	80	kg	EPA RSL Calculator Default					
				EF	Exposure Frequency	250	days/yr	EPA RSL Calculator Default					
				RfD	Ingestion Reference Dose	Chemical Specific	mg/kg-day	EPA RSL Calculator					
				CSF	Ingestion Slope Factor	Chemical Specific	(mg/kg-day) <sup>-1</sup>	EPA RSL Calculator					
				RBA	Relative Bioavailability Factor	Chemical Specific	unitless	EPA RSL Calculator					
				IR	Soil Ingestion Rate	100	mg/day	EPA RSL Calculator Default					
				CF1	Conversion Factor	1.00E-06	kg/mg	EPA RSL Calculator					
				Inhalation (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk		1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator
							THQ	Target Hazard Quotient		0.1	unitless	EPA RSL Calculator Default	
AT-C	Averaging Time - Carcinogenic	25550	days				EPA RSL Calculator Default						
AT-N	Averaging Time - Noncarcinogenic	365	days				EPA RSL Calculator Default						
LT	Lifetime	70	yr				EPA RSL Calculator Default						
ED	Exposure Duration	25	yr				EPA RSL Calculator Default						
EF	Exposure Frequency	250	days/yr				EPA RSL Calculator Default						
ET	Exposure Time	8	hours/day				EPA RSL Calculator Default						
RfC	Inhalation Reference Concentration	Chemical Specific	mg/m <sup>3</sup>				EPA RSL Calculator						
IUR	Inhalation Unit Risk	Chemical Specific	(ug/m <sup>3</sup> ) <sup>-1</sup>				EPA RSL Calculator						
VF	Volatilization Factor	Calculated Value	m <sup>3</sup> /kg				EPA RSL Calculator						
PEF	Particulate Emission Factor	Calculated Value	m <sup>3</sup> /kg				EPA RSL Calculator						

TABLE 4.2 RME  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
REASONABLE MAXIMUM EXPOSURE  
Former Asarco Site  
Perth Amboy, New Jersey

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Receptor Population	Exposure Route	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name				
Construction Worker	Dermal (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk	1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator				
				THQ	Target Hazard Quotient	0.1	unitless	EPA RSL Calculator Default					
				AT-C	Averaging Time - Carcinogenic	25550	days	EPA RSL Calculator Default					
				AT-N	Averaging Time - Noncarcinogenic	365	days	EPA RSL Calculator Default					
				LT	Lifetime	70	yr	EPA RSL Calculator Default					
				ED	Exposure Duration	1	yr	EPA RSL Calculator Default					
				BW	Body Weight	80	kg	EPA RSL Calculator Default					
				EF	Exposure Frequency	250	days/yr	EPA RSL Calculator Default					
				RfD	Ingestion Reference Dose	Chemical Specific	mg/kg-day	EPA RSL Calculator					
				CSF	Ingestion Slope Factor	Chemical Specific	(mg/kg-day) <sup>-1</sup>	EPA RSL Calculator					
				GIABS	Gastrointestinal Absorbance	Chemical Specific	unitless	EPA RSL Calculator					
				SA	Exposed Skin Surface Area	3527	cm <sup>2</sup> /day	EPA RSL Calculator Default					
				AF	Adherence Factor	0.3	mg/cm <sup>2</sup>	EPA RSL Calculator Default					
				ABS	Dermal Absorbance	Chemical Specific	unitless	EPA RSL Calculator					
				CF1	Conversion Factor	1.00E-06	kg/mg	EPA RSL Calculator					
	Ingestion (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk	1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator				
				THQ	Target Hazard Quotient	0.1	unitless	EPA RSL Calculator Default					
				AT-C	Averaging Time - Carcinogenic	25550	days	EPA RSL Calculator Default					
				AT-N	Averaging Time - Noncarcinogenic	365	days	EPA RSL Calculator Default					
				LT	Lifetime	70	yr	EPA RSL Calculator Default					
				ED	Exposure Duration	1	yr	EPA RSL Calculator Default					
				BW	Body Weight	80	kg	EPA RSL Calculator Default					
				EF	Exposure Frequency	250	days/yr	EPA RSL Calculator Default					
				RfD	Ingestion Reference Dose	Chemical Specific	mg/kg-day	EPA RSL Calculator					
				CSF	Ingestion Slope Factor	Chemical Specific	(mg/kg-day) <sup>-1</sup>	EPA RSL Calculator					
				RBA	Relative Bioavailability Factor	Chemical Specific	unitless	EPA RSL Calculator					
				IR	Soil Ingestion Rate	330	mg/day	EPA RSL Calculator Default					
				CF1	Conversion Factor	1.00E-06	kg/mg	EPA RSL Calculator					
				Inhalation (Carcinogenic/Non-Carcinogenic)	Adult	On-site	TR	Target Risk		1.00E-06	unitless	EPA RSL Calculator Default	EPA RSL Calculator
							THQ	Target Hazard Quotient		0.1	unitless	EPA RSL Calculator Default	
AT-C	Averaging Time - Carcinogenic	25550	days				EPA RSL Calculator Default						
AT-N	Averaging Time - Noncarcinogenic	365	days				EPA RSL Calculator Default						
LT	Lifetime	70	yr				EPA RSL Calculator Default						
ED	Exposure Duration	1	yr				EPA RSL Calculator Default						
EF	Exposure Frequency	250	days/yr				EPA RSL Calculator Default						
ET	Exposure Time	8	hours/day				EPA RSL Calculator Default						
RfC	Inhalation Reference Concentration	Chemical Specific	mg/m <sup>3</sup>				EPA RSL Calculator						
IUR	Inhalation Unit Risk	Chemical Specific	(ug/m <sup>3</sup> ) <sup>-1</sup>				EPA RSL Calculator						
VF	Volatilization Factor	Calculated Value	m <sup>3</sup> /kg				EPA RSL Calculator						
PEF	Particulate Emission Factor	Calculated Value	m <sup>3</sup> /kg				EPA RSL Calculator						

TABLE 5.1  
NON-CANCER TOXICITY DATA -- ORAL/DERMAL  
Perth Amboy, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal  (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Aroclor 1254	Chronic	2.00E-05	mg/kg-day	1	2.00E-05	mg/kg-day	Whole Body		EPA RSL Calculator	4/4/2019
Aroclor 1254	Subchronic	3.00E-05	mg/kg-day	1	2.00E-05	mg/kg-day	Whole Body		EPA RSL Calculator	4/4/2019
PCBs Total	Chronic	-	mg/kg-day	1	-	mg/kg-day	NA		EPA RSL Calculator	4/4/2019

Footnote Instructions:

(1) EPA RSL Calculator output - Gastrointestinal Absorption (GIABS).

TABLE 5.2  
NON-CANCER TOXICITY DATA -- INHALATION  
Perth Amboy, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Aroclor 1254	Chronic	-	mg/m <sup>3</sup>	-		NA		EPA RSL Calculator	4/4/2019
PCBs Total	Chronic	-	mg/m <sup>3</sup>	-		NA		EPA RSL Calculator	4/4/2019

TABLE 6.1  
 CANCER TOXICITY DATA -- ORAL/DERMAL  
 Perth Amboy, New Jersey

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal  (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Aroclor 1254	2	(mg/kg-day) <sup>-1</sup>	1	2	(mg/kg-day) <sup>-1</sup>		EPA RSL Calculator	4/4/2019
PCBs Total	2	(mg/kg-day) <sup>-1</sup>	1	2	(mg/kg-day) <sup>-1</sup>		EPA RSL Calculator	4/4/2019

Footnote Instructions:

(1) EPA RSL Calculator output - Gastrointestinal Absorption (GIABS).

TABLE 6.2  
 CANCER TOXICITY DATA -- INHALATION  
 Perth Amboy, New Jersey

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Aroclor 1254	5.71E-04	(ug/m <sup>3</sup> ) <sup>-1</sup>	2.284	(mg/kg*day) <sup>-1</sup>		EPA RSL Calculator	4/4/2019
PCBs Total	5.71E-04	(ug/m <sup>3</sup> ) <sup>-1</sup>	2.284	(mg/kg*day) <sup>-1</sup>		EPA RSL Calculator	4/4/2019



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A	B	C	D	E	F	G	H	I	J	K	L		
1	<b>UCL Statistics for Data Sets with Non-Detects</b>												
2													
3	User Selected Options												
4	Date/Time of Computation		3/13/2019 3:40:34 PM										
5	From File		PCB Table_revised w500 (sitewide).xls										
6	Full Precision		OFF										
7	Confidence Coefficient		95%										
8	Number of Bootstrap Operations		2000										
9													
10	<b>Aroclor (Total)</b>												
11													
12	<b>General Statistics</b>												
13	Total Number of Observations			512		Number of Distinct Observations			244				
14	Number of Detects			468		Number of Non-Detects			44				
15	Number of Distinct Detects			232		Number of Distinct Non-Detects			13				
16	Minimum Detect			0.036		Minimum Non-Detect			0.027				
17	Maximum Detect			1200		Maximum Non-Detect			0.06				
18	Variance Detects			7859		Percent Non-Detects			8.594%				
19	Mean Detects			39.56		SD Detects			88.65				
20	Median Detects			9.8		CV Detects			2.241				
21	Skewness Detects			6.493		Kurtosis Detects			67.39				
22	Mean of Logged Detects			1.903		SD of Logged Detects			2.276				
23													
24	<b>Normal GOF Test on Detects Only</b>												
25	Shapiro Wilk Test Statistic			0.486		<b>Normal GOF Test on Detected Observations Only</b>							
26	5% Shapiro Wilk P Value			0		Detected Data Not Normal at 5% Significance Level							
27	Lilliefors Test Statistic			0.328		<b>Lilliefors GOF Test</b>							
28	5% Lilliefors Critical Value			0.041		Detected Data Not Normal at 5% Significance Level							
29	<b>Detected Data Not Normal at 5% Significance Level</b>												
30													
31	<b>Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs</b>												
32	Mean		36.17		Standard Error of Mean			3.778					
33	SD		85.39		95% KM (BCA) UCL			41.77					
34	95% KM (t) UCL		42.39		95% KM (Percentile Bootstrap) UCL			42.33					
35	95% KM (z) UCL		42.38		95% KM Bootstrap t UCL			44.05					
36	90% KM Chebyshev UCL		47.5		95% KM Chebyshev UCL			52.63					
37	97.5% KM Chebyshev UCL		59.76		99% KM Chebyshev UCL			73.76					
38													
39	<b>Gamma GOF Tests on Detected Observations Only</b>												
40	A-D Test Statistic		5.34		<b>Anderson-Darling GOF Test</b>								
41	5% A-D Critical Value		0.853		Detected Data Not Gamma Distributed at 5% Significance Level								
42	K-S Test Statistic		0.0861		<b>Kolmogrov-Smirnoff GOF</b>								
43	5% K-S Critical Value		0.0451		Detected Data Not Gamma Distributed at 5% Significance Level								
44	<b>Detected Data Not Gamma Distributed at 5% Significance Level</b>												
45													
46	<b>Gamma Statistics on Detected Data Only</b>												
47	k hat (MLE)		0.375		k star (bias corrected MLE)			0.374					
48	Theta hat (MLE)		105.6		Theta star (bias corrected MLE)			105.9					
49	nu hat (MLE)		350.7		nu star (bias corrected)			349.8					
50	MLE Mean (bias corrected)		39.56		MLE Sd (bias corrected)			64.72					
51													
52	<b>Gamma Kaplan-Meier (KM) Statistics</b>												

A	B	C	D	E	F	G	H	I	J	K	L
53	k hat (KM)				0.179	nu hat (KM)				183.7	
54	Approximate Chi Square Value (183.70, $\alpha$ )				153.4	Adjusted Chi Square Value (183.70, $\beta$ )				153.3	
55	95% Gamma Approximate KM-UCL (use when $n \geq 50$ )				43.33	95% Gamma Adjusted KM-UCL (use when $n < 50$ )				43.35	
56											
57	<b>Gamma ROS Statistics using Imputed Non-Detects</b>										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62	Minimum				0.01	Mean				36.17	
63	Maximum				1200	Median				7.05	
64	SD				85.47	CV				2.363	
65	k hat (MLE)				0.306	k star (bias corrected MLE)				0.306	
66	Theta hat (MLE)				118.1	Theta star (bias corrected MLE)				118.3	
67	nu hat (MLE)				313.6	nu star (bias corrected)				313.1	
68	MLE Mean (bias corrected)				36.17	MLE Sd (bias corrected)				65.41	
69						Adjusted Level of Significance ( $\beta$ )				0.0495	
70	Approximate Chi Square Value (313.06, $\alpha$ )				273.1	Adjusted Chi Square Value (313.06, $\beta$ )				273	
71	95% Gamma Approximate UCL (use when $n \geq 50$ )				41.46	95% Gamma Adjusted UCL (use when $n < 50$ )				41.48	
72											
73	<b>Lognormal GOF Test on Detected Observations Only</b>										
74	Lilliefors Test Statistic				0.0775	<b>Lilliefors GOF Test</b>					
75	5% Lilliefors Critical Value				0.041	Detected Data Not Lognormal at 5% Significance Level					
76	<b>Detected Data Not Lognormal at 5% Significance Level</b>										
77											
78	<b>Lognormal ROS Statistics Using Imputed Non-Detects</b>										
79	Mean in Original Scale				36.17	Mean in Log Scale				1.47	
80	SD in Original Scale				85.47	SD in Log Scale				2.602	
81	95% t UCL (assumes normality of ROS data)				42.39	95% Percentile Bootstrap UCL				42.95	
82	95% BCA Bootstrap UCL				43.66	95% Bootstrap t UCL				43.78	
83	95% H-UCL (Log ROS)				200.9						
84											
85	<b>DL/2 Statistics</b>										
86	<b>DL/2 Normal</b>					<b>DL/2 Log-Transformed</b>					
87	Mean in Original Scale				36.17	Mean in Log Scale				1.384	
88	SD in Original Scale				85.47	SD in Log Scale				2.759	
89	95% t UCL (Assumes normality)				42.39	95% H-Stat UCL				293.2	
90	<b>DL/2 is not a recommended method, provided for comparisons and historical reasons</b>										
91											
92	<b>Nonparametric Distribution Free UCL Statistics</b>										
93	<b>Data do not follow a Discernible Distribution at 5% Significance Level</b>										
94											
95	<b>Suggested UCL to Use</b>										
96	97.5% KM (Chebyshev) UCL				59.76						
97											
98	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
99	Recommendations are based upon data size, data distribution, and skewness.										
100	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
101	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
102											

## **APPENDIX B**

**Appendix B  
CERTIFICATION**

Type of Document: Polychlorinated Biphenyl (PCB) Risk-Based Approval Application

Case Name: Former ASARCO Facility Case Number: SRP PI 003619

Case Address: 1160 State Street, Perth Amboy, New Jersey (Block 430, Lots 1.02 and 1.03)

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement, which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties. All sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures described in the report that are used to assess or characterize the PCB contamination at the cleanup site, will be maintained on file at the location designated above, and are available for EPA inspection."

Certification of Owner of Block 430, Lot 1.02 only

Printed Name Jeffrey J. Milanaik Title Member

Signature  Date 2-25-21

Notary Signature  Date 2/25/2021

*Wanda Chin Morahan  
Attorney at Law of  
State of New Jersey*

The certification above shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

**Appendix B  
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Certification of Owner of Block 430, Lot 1.03 only

Printed Name Michael Roberts Title Member

Signature *Michael Roberts* Date 2-26-21

Notary Signature *Rebecca Lydon* Date 2-26-21



REBECCA LYDON  
My Commission Expires  
November 1, 2021  
St. Louis County  
Commission #13540330

The certification above shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

## **APPENDIX C**

# Notification of PCB Activity

Return To:

Document Control Officer (5305P)  
Office of Solid Waste  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., N.W.  
Washington, DC 20460-0001

**For Official Use Only**

1. Name of Facility

Name of Owner Facility

2. EPA Identification Number (if already assigned under RCRA)

Former ASARCO Facility

Perth Amboy 1160, LLC

NJD039116207

3. Facility Mailing Address (Street or PO Box, City, State, & Zip Code)

1515 Des Peres Road, Suite 300  
Saint Louis, Missouri, 63131

4. Location of Facility (No. Street, City, State, & Zip Code)

1160 State Street, Perth Amboy, Middlesex  
County, New Jersey, 08861

5. Installation Contact (Name and Title)

Thomas Roberts, Member

6. Type of PCB Activity (Mark 'X' in appropriate box. See Instructions.)

- A. Generator w/onsite storage facility
- B. Storer (Commercial)
- C. Transporter
- D. R&D/Treatability
- E. Approved Disposer
- F. Scrap Metal Recovery Oven/Smelter, High Efficiency Boilers

Telephone Number (Area Code and Number)

(314) 835-1515

7. Certification

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as a company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Signature

Name and Official Title (Type of Print)

Tom Roberts, Manager

Date Signed

6-30-19

### Paperwork Reduction Act Notice

The annual public burden for this collection of information is estimated to average 0.57 hours per response. This estimate includes time for reading instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, Collection Strategies Division, U.S. Environmental Protection Agency (mail code 2822), 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460-0001. Include the OMB number identified above in any correspondence. Do not send the completed form to this address. The actual information or form should be submitted in accordance with the instructions accompanying the form, or as specified in the corresponding regulations.



## **APPENDIX D**

Return Address:  
ABC Company  
1 Main St  
Town, NJ 00000

APPENDIX D - MODEL DEED NOTICE

\_\_\_\_\_  
Instrument Number

DEED NOTICE

This shell document contains blanks and matter in brackets [ ]. These blanks shall be replaced with the required site information prior to recording.

Matter bracketed [ ] is not intended for deletion, but rather is intended to be descriptive of the variable information that may be contained in the final document.

IN ACCORDANCE WITH N.J.S.A. 58:10B-13, THIS DOCUMENT IS TO BE RECORDED IN THE SAME MANNER AS ARE DEEDS AND OTHER INTERESTS IN REAL PROPERTY.

Prepared by: \_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Print name below signature]

Recorded by: \_\_\_\_\_  
[Signature, Officer of County Recording Office]

\_\_\_\_\_  
[Print name below signature]

DEED NOTICE

This Deed Notice is made as of the \_\_\_\_ day of \_\_\_\_, \_\_\_\_, by [*Insert the full legal name and address of each current property owner*] (together with his/her/its/their successors and assigns, collectively "Owner").

1. THE PROPERTY. [*Insert the full legal name and address of each current property owner*] [*Insert as appropriate: "is", or "are"*] the owner in fee simple of certain real property designated as Block(s) \_\_\_\_ Lot(s) \_\_\_\_, on the tax map of the [*Insert, as appropriate: City/Borough/Township/Town*] of [*Insert the name of municipality*], [*Insert the name of county*] County; the New Jersey Department of Environmental Protection Program Interest Number

(Preferred ID) for the contaminated site which includes this property is [*Insert the Program Interest Number (Preferred ID)*]; and the property is more particularly described in Exhibit A, which is attached hereto and made a part hereof (the “Property”).

## 2. REMEDIATION.

i. [*Insert name of the Licensed Site Remediation Professional and LSRP License No. of the LSRP that approved this Deed Notice*] has approved this Deed Notice as an institutional control for the Property, which is part of the remediation of the Property.

ii. N.J.A.C. 7:26C-7 requires the Owner, among other persons, to obtain a soil remedial action permit for the soil remedial action at the Property. That permit will contain the monitoring, maintenance and biennial certification requirements that apply to the Property.

3. SOIL CONTAMINATION. [*Insert the full legal name of the person that was responsible for conducting the remediation*] has remediated contaminated soil at the Property, such that soil contamination remains at certain areas of the Property that contains contaminants in concentrations that do not allow for the unrestricted use of the Property. Such soil contamination is described, including the type, concentration and specific location of such contamination, and the existing engineering controls on the site are described, in Exhibit B, which is attached hereto and made a part hereof. As a result, there is a statutory requirement for this Deed Notice [*include if appropriate: and engineering controls*] in accordance with N.J.S.A. 58:10B-13.

4. CONSIDERATION. In accordance with the remedial action for the site which included the Property, and in consideration of the terms and conditions of that remedial action, and other good and valuable consideration, Owner has agreed to subject the Property to certain statutory and regulatory requirements that impose restrictions upon the use of the Property, to restrict certain uses of the Property, and to provide notice to subsequent owners, lessors, lessees and operators of the Property of the restrictions and the monitoring, maintenance, and biennial certification requirements outlined in this Deed Notice and required by law, as set forth herein.

5A. RESTRICTED AREAS. Due to the presence of contamination remaining at concentrations that do not allow for unrestricted use, the Owner has agreed, as part of the remedial action for the Property, to restrict the use of certain parts of the Property (the “Restricted Areas”); a narrative description of these restrictions is provided in Exhibit C, which is attached hereto and made a part hereof. The Owner has also agreed to maintain a list of these restrictions on site for inspection by governmental officials.

5B. RESTRICTED LAND USES. The following statutory land use restrictions apply to the Restricted Areas:

i. The Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12.g(10), prohibits the conversion of a contaminated site, remediated to non-residential soil remediation standards that require the maintenance of engineering or institutional controls, to a child care facility, or public, private, or charter school without the Department’s prior written approval, unless a presumptive remedy is implemented; and

ii. The Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12.g(12), prohibits the conversion of a landfill, with gas venting systems and or leachate collection systems, to a single family residence or a child care facility.

*[Insert the following paragraph when engineering controls are also implemented at the site:*

5C. ENGINEERING CONTROLS. Due to the presence and concentration of these contaminants, the Owner has also agreed, as part of the remedial action for the Property, to the placement of certain engineering controls on the Property; a narrative description of these engineering controls is provided in Exhibit C.]

#### 6A. CHANGE IN OWNERSHIP AND REZONING.

i. The Owner and the subsequent owners, lessors, and lessees, shall cause all leases, grants, and other written transfers of an interest in the Restricted Areas to contain a provision expressly requiring all holders thereof to take the Property subject to the restrictions contained herein and to comply with all, and not to violate any of the conditions of this Deed Notice. Nothing contained in this Paragraph shall be construed as limiting any obligation of any person to provide any notice required by any law, regulation, or order of any governmental authority.

ii. The Owner and the subsequent owners shall provide written notice to the Department of Environmental Protection on a form provided by the Department and available at [www.nj.gov/srp/forms](http://www.nj.gov/srp/forms) within 30 calendar days after the effective date of any conveyance, grant, gift, or other transfer, in whole or in part, of the Owner's or subsequent owner's interest in the Restricted Area.

iii. The Owner and the subsequent owners shall provide written notice to the Department, on a form available from the Department at [www.nj.gov/srp/forms](http://www.nj.gov/srp/forms), within thirty (30) calendar days after the owner's petition for or filing of any document initiating a rezoning of the Property to residential.

6B. SUCCESSORS AND ASSIGNS. This Deed Notice shall be binding upon Owner and upon Owner's successors and assigns, and subsequent owners, lessors, lessees and operators while each is an owner, lessor, lessee, or operator of the Property.

#### 7A. ALTERATIONS, IMPROVEMENTS, AND DISTURBANCES.

i. The Owner and all subsequent owners, lessors, and lessees shall notify any person, including, without limitation, tenants, employees of tenants, and contractors, intending to conduct invasive work or excavate within the Restricted Areas, of the nature and location of contamination in the Restricted Areas, and, of the precautions necessary to minimize potential human exposure to contaminants.

ii. Except as provided in Paragraph 7B, below, no person shall make, or allow to be made, any alteration, improvement, or disturbance in, to, or about the Property which disturbs any engineering control at the Property without first retaining a licensed site remediation professional. Nothing herein shall constitute a waiver of the obligation of any person to comply with all applicable laws and regulations including, without limitation, the applicable rules of the Occupational Safety and Health Administration.

iii. A soil remedial action permit modification is required for any permanent alteration, improvement, or disturbance and the owner, lessor, lessee or operator shall submit the following within 30 days after the occurrence of the permanent alteration, improvement, or disturbance:

(A) A Remedial Action Workplan or Linear Construction Project notification and Final Report Form, whichever is applicable;

(B) A Remedial Action Report and Termination of Deed Notice Form; and

(C) A revised recorded Deed Notice with revised Exhibits, and Remedial Action Permit Modification or Remedial Action Permit Termination form and Remedial Action Report.

iv. No owner, lessor, lessee or operator shall be required to obtain a Remedial Action Permit Modification for any temporary alteration, improvement, or disturbance, provided that the site is restored to the condition described in the Exhibits to this Deed Notice, and the owner, lessee, or operator complies with the following:

(A) Restores any disturbance of an engineering control to pre-disturbance conditions within 60 calendar days after the initiation of the alteration, improvement or disturbance;

(B) Ensures that all applicable worker health and safety laws and regulations are followed during the alteration, improvement, or disturbance, and during the restoration;

(C) Ensures that human exposure to contamination in excess of the remediation standards does not occur; and

(D) Describes, in the next biennial certification the nature of the temporary alteration, improvement, or disturbance, the dates and duration of the temporary alteration, improvement, or disturbance, the name of key individuals and their affiliations conducting the temporary alteration, improvement, or disturbance, the notice the Owner gave to those persons prior to the disturbance.

7B. EMERGENCIES. In the event of an emergency which presents, or may present, an unacceptable risk to the public health and safety, or to the environment, or an immediate environmental concern, see N.J.S.A. 58:10C-2, any person may temporarily breach an engineering control provided that that person complies with each of the following:

- i. Immediately notifies the Department of Environmental Protection of the emergency, by calling the DEP Hotline at 1-877-WARNDEP or 1-877-927-6337;
- ii. Hires a Licensed Site Remediation Professional (unless the Restricted Areas includes an unregulated heating oil tank) to respond to the emergency;
- iii. Limits both the actual disturbance and the time needed for the disturbance to the minimum reasonably necessary to adequately respond to the emergency;
- iv. Implements all measures necessary to limit actual or potential, present or future risk of exposure to humans or the environment to the contamination;
- v. Notifies the Department of Environmental Protection when the emergency or immediate environmental concern has ended by calling the DEP Hotline at 1-877-WARNDEP or 1-877-927-6337; and
- vi. Restores the engineering control to the pre-emergency conditions as soon as possible; and
- vii. Submits to the Department of Environmental Protection within 60 calendar days after completion of the restoration of the engineering control, a report including: (a) the nature and likely cause of the emergency; (b) the measures that have been taken to mitigate the effects of the emergency on human health and the environment; (c) the measures completed or implemented to restore the engineering control; and (d) any changes to the engineering control or site operation and maintenance plan to prevent reoccurrence of such conditions in the future.

#### 8. TERMINATION OF DEED NOTICE.

- i. This Deed Notice may be terminated only upon recording a Department-approved Termination of Deed Notice, available at N.J.A.C. 7:26C Appendix C, with the office of the [*Insert as appropriate the County Clerk/Register of Deeds and Mortgages*] of [*Insert the name of the County*] County, New Jersey, expressly terminating this Deed Notice.
- ii. Within 30 calendar days after recording a Department-approved Termination of Deed Notice, the owner of the property should apply to the Department for termination of the soil remedial action permit pursuant to N.J.A.C. 7:26C-7.

9. ACCESS. The Owner, and the subsequent owners, lessors, lessees, and operators agree to allow the Department, its agents and representatives access to the Property to inspect and evaluate the continued protectiveness of the remedial action that includes this Deed Notice and to conduct additional remediation to ensure the protection of the public health and safety and of the environment if the subsequent owners, lessors, lessees, and operators, during their ownership, tenancy, or operation, and the Owner fail to conduct such remediation pursuant to this Deed Notice as required by law. The Owner, and the subsequent owners, lessors, and lessees, shall also cause all leases, subleases, grants, and other written transfers of an interest in the Restricted

Areas to contain a provision expressly requiring that all holders thereof provide such access to the Department.

#### 10. ENFORCEMENT OF VIOLATIONS.

i. This Deed Notice itself is not intended to create any interest in real estate in favor of the Department of Environmental Protection, nor to create a lien against the Property, but merely is intended to provide notice of certain conditions and restrictions on the Property and to reflect the regulatory and statutory obligations imposed as a conditional remedial action for this site.

ii. The restrictions provided herein may be enforceable solely by the Department against any person who violates this Deed Notice. To enforce violations of this Deed Notice, the Department may initiate one or more enforcement actions pursuant to N.J.S.A. 58:10-23.11, and N.J.S.A. 58:10C, and require additional remediation and assess damages pursuant to N.J.S.A. 58:10-23.11, and N.J.S.A. 58:10C.

11. SEVERABILITY. If any court of competent jurisdiction determines that any provision of this Deed Notice requires modification, such provision shall be deemed to have been modified automatically to conform to such requirements. If a court of competent jurisdiction determines that any provision of this Deed Notice is invalid or unenforceable and the provision is of such a nature that it cannot be modified, the provision shall be deemed deleted from this instrument as though the provision had never been included herein. In either case, the remaining provisions of this Deed Notice shall remain in full force and effect.

12A. EXHIBIT A. Exhibit A includes the following maps of the Property and the vicinity:

i. Exhibit A-1: Vicinity Map - A map that identifies by name the roads, and other important geographical features in the vicinity of the Property (for example, USGS Quad map, Hagstrom County Maps);

ii. Exhibit A-2: Metes and Bounds Description - A tax map of lots and blocks as wells as metes and bounds description of the Property, including reference to tax lot and block numbers for the Property;

iii. Exhibit A-3: Property Map - A scaled map of the Property, scaled at one inch to 200 feet or less, and if more than one map is submitted, the maps shall be presented as overlays, keyed to a base map; and the Property Map shall include diagrams of major surface topographical features such as buildings, roads, and parking lots.

12B. EXHIBIT B. Exhibit B includes the following descriptions of the Restricted Areas:

i. Exhibit B-1: Restricted Area Map -- A separate map for each restricted area that includes:

(A) As-built diagrams of each engineering control, including caps, fences, slurry walls, (and, if any) ground water monitoring wells, extent of the ground water classification exception area, pumping and treatment systems that may be required as part of a ground water engineering control in addition to the deed notice;

(B) As-built diagrams of any buildings, roads, parking lots and other structures that function as engineering controls; and

(C) Designation of all soil and all upland sediment sample locations within the restricted areas that exceed any soil standard that are keyed into one of the tables described in the following paragraph.

ii. Exhibit B-2: Restricted Area Data Table - A separate table for each restricted area that includes either (A) or (B) through (F):

(A) Only for historic fill extending over the entire site or a portion of the site and for which analytical data are limited or do not exist, a narrative that states that historic fill is present at the site, a description of the fill material (e.g., ash, cinders, brick, dredge material), and a statement that such material may include, but is not limited to, contaminants such as PAHs and metals;

(B) Sample location designation from Restricted Area map (Exhibit B-1);

(C) Sample elevation based upon mean sea level;

(D) Name and chemical abstract service registry number of each contaminant with a concentration that exceeds the unrestricted use standard;

(E) The restricted and unrestricted use standards for each contaminant in the table; and

(F) The remaining concentration of each contaminant at each sample location at each elevation.

12C. EXHIBIT C. Exhibit C includes narrative descriptions of the institutional controls [*Insert as appropriate:* and engineering controls] as follows:

i. Exhibit C-1: Deed Notice as Institutional Control: Exhibit C-1 includes a narrative description of the restriction and obligations of this Deed Notice that are in addition to those described above, as follows:

(A) Description and estimated size [*Identify units of measure*] of the Restricted Areas as described above;

(B) Description of the restrictions on the Property by operation of this Deed Notice; and



(C) The objective of the restrictions.

*[Insert the following if engineering controls are part of the remedial action for the site:*

ii. Exhibit C-2: *[Insert the name of the first engineering control]*: Exhibit C-2 includes a narrative description of *[Insert the name of the first engineering control]* as follows:

(A) Description of the engineering control;

(B) The objective of the engineering control; and

(C) How the engineering control is intended to function.

*[Repeat the contents of Exhibit C-2, renumbering accordingly, for each separate engineering control that is part of the remedial action for the site.]*

13. SIGNATURES. IN WITNESS WHEREOF, Owner has executed this Deed Notice as of the date first written above.

[If Owner is an individual]

WITNESS: \_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Print name below signature]

STATE OF [State where document is executed] SS.:  
COUNTY OF [County where document is executed]

I certify that on \_\_\_\_\_, 20 \_\_, [Name of Owner] personally came before me, and this person acknowledged under oath, to my satisfaction, that this person [or if more than one person, each person]

(a) is named in and personally signed this document; and

(b) signed, sealed and delivered this document as his or her act and deed.

\_\_\_\_\_  
\_\_\_\_\_, Notary Public  
[Print Name and Title]

14. SIGNATURES. IN WITNESS WHEREOF, Owner has executed this Deed Notice as of the date first written above.

[If Owner is a general or limited partnership]  
WITNESS: \_\_\_\_\_ [Name of partnership]

\_\_\_\_\_  
[Signature] By: \_\_\_\_\_, General Partner  
[Signature]

\_\_\_\_\_  
[Print name and title] \_\_\_\_\_  
[Print name]

STATE OF [State where document is executed] SS.:  
COUNTY OF [County where document is executed]

I certify that on \_\_\_\_\_, 20\_\_\_, [Name of person executing document on behalf of owner partnership] personally came before me, and this person acknowledged under oath, to my satisfaction, that this person:

(a) Is a general partner of [Owner], the partnership named in this document;

(b) Signed, sealed and delivered this document as his or her act and deed in his capacity as a general partner of [Owner]; and

(c) This document was signed and delivered by such partnership as its voluntary act, duly authorized.

\_\_\_\_\_, Notary Public  
[Signature]

\_\_\_\_\_  
[Print name]

15. SIGNATURES. IN WITNESS WHEREOF, Owner has executed this Deed Notice as of the date first written above.

[If Owner is a corporation]

ATTEST: [Name of corporation]

\_\_\_\_\_ By \_\_\_\_\_

\_\_\_\_\_  
[Print name and title]

\_\_\_\_\_  
[Signature]

STATE OF [State where document is executed] SS.:  
COUNTY OF [County where document is executed]

I certify that on \_\_\_\_\_, 20\_\_, [Name of person executing document on behalf of Owner] personally came before me, and this person acknowledged under oath, to my satisfaction, that:

(a) this person is the [secretary/assistant secretary] of [Owner], the corporation named in this document;

(b) this person is the attesting witness to the signing of this document by the proper corporate officer who is the [president/vice president] of the corporation;

(c) this document was signed and delivered by the corporation as its voluntary act and was duly authorized;

(d) this person knows the proper seal of the corporation which was affixed to this document;  
and

(e) this person signed this proof to attest to the truth of these facts.

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Print name and title of attesting witness]

Signed and sworn before me on \_\_\_\_\_, 20\_\_

\_\_\_\_\_, Notary Public

\_\_\_\_\_  
[Print name and title]