BASELINE REMEDIAL INVESTIGATION WORK PLAN
SPECIAL INDUSTRIAL AREA

for

LOGAN POINTE REDEVELOPMENT AREA
Logan Neighborhood
North Philadelphia, PA 19140

Prepared For:

DEP - RECEIVED
SOUTHEAST REGION
APR 29 2020

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EXECUTIVE SUMMARY

The Logan Pointe Redevelopment Area consists of 18 parcels comprising ±46 acres of vacant land in the Logan Neighborhood of North Philadelphia, Pennsylvania (the 'Site'), as shown on Figure 1. The Site is bound by North 11th Street to the west, West Loudon Street to the north, a utility easement east of North Marshall Street to the east, West Roosevelt Boulevard to the southeast, and West Wingohocking Street to the south. The privately-owned parcels developed with church-related structures located along Roosevelt Boulevard are excluded from the Site boundary. As described in Section 1.1, the Site is entirely located within a federal Qualified Opportunity Zone (see Figure 2) and qualifies for the Special Industrial Area (SIA) designation under the Pennsylvania Land Recycling and Remediation Standards Act of 1995, commonly known as "Act 2."

The Site is owned by the Redevelopment Authority of the City of Philadelphia (PRA). Logan West Associates, L.P., care of The Goldenberg Group (LWA/TGG), is the designated Redeveloper and intends to purchase and redevelop the vacant and blighted Site. TGG's objective is to complete site-wide environmental characterization of the property and provide the maximum opportunity for Act 2 relief from environmental liability for PRA, Logan West Associates, L.P., TGG and any re-user of the Logan Pointe Redevelopment Site. Re-development will be completed in multiple phases and integrated with environmental remediation of the Site. Redevelopment plans conceived for the Site include the following type uses: institutional, light industrial (e.g., distribution/warehouse), retail, community open space, and food/restaurant, all of which are in line with the zoning designation of the Site as Community Commercial Mixed-Use (CMX-3) land.

The Logan Pointe Redevelopment Area is located in the filled valley of the Wingohocking Creek, a former tributary of the Frankford Creek that was piped underground (beneath Courtland Street) in the late 1800s. The creek bed and surrounding areas were filled with cinder ash, gravel, sand, silt and building debris of unknown origins circa 1910 to facilitate development of this area. Reported fill depth at the Site ranges from negligible near Loudon and 11th Streets at the northwestern corner of the Site to 45 feet deep near portions of Roosevelt Boulevard to the southeast. The deepest areas of fill occur near the former creek channel through the southern portion of the Site. By 1920, the Site was occupied by more than 950 two-story rowhomes and several businesses (commercial and industrial) located along rectangular gridded streets. Over time, the placed ash and fill settled or eroded, and, as early as the 1950s, subsidence and building

foundation collapse became apparent because of unsuitable and structurally inadequate foundation materials, consisting of loose ash and cinder fill, that were not effectively compacted.

The City of Philadelphia was notified of severe damage to structures, streets and underground utilities following a gas main explosion in 1986. Starting in the late 1980s and continuing through 2005, the city, through the Logan Assistance Corporation, condemned and demolished the majority of the buildings located on the Site. Basements of the demolished buildings were reportedly backfilled with local material or imported fill from off-site. One detached rowhome, located at 4745 North 11th Street, remains on the Site; the two churches, located at 1001 West Wingohocking Street and 635 West Roosevelt Boulevard, are excluded from the Site boundary. The balance of the Site consists of vacant, vegetated city blocks gridded by streets and deteriorated sidewalks. Of the roadways that pass through the Site, many are barricaded and inaccessible by vehicles, including North Warnock, North 10th, North Hutchinson, North 8th, North Franklin, North 7th and North Marshall Streets. The bordering streets, North 11th, West Wingohocking, West Loudon and West Roosevelt Boulevard, and several arterial streets that pass through the Site, including North 9th Street, Wyoming Avenue and West Courtland Street, remain open to vehicular traffic.

This Baseline RI Work Plan incorporates the findings from multiple phases of environmental assessment, investigation and remediation activities that have been completed at the Site since at least 1986. Of the historical environmental investigation and remediation, a Response Action Plan was prepared by Urban Engineers, Inc. (UEI) in accordance with requirements stipulated by the United States Environmental Protection Agency (USEPA) in a Memorandum of Agreement (MoA) entered into by the USEPA and the City of Philadelphia in October 2000. Supplementing soil sample data collected in 1998 and 1999, the USEPA completed additional sampling that involved collecting 230 surficial soil samples in November 1999. The USEPA identified six distinct areas that had high lead levels (average lead concentrations ranging from 868 mg/kg to 22,300 mg/kg) and required remediation because of the potentially unacceptable risk under a residential exposure scenario.

Under the MoA, USEPA directed the City to excavate the top twelve inches of lead-impacted soil at these six areas, which are depicted on Figure 3. The City of Philadelphia has reportedly remediated these areas by excavating and disposing of 9 million tons of lead-impacted soil and replacing it with clean fill. Following surficial soil remediation at the USEPA-designated risk areas, the USEPA approved site closure (Logan Section Contamination) in 2001.

Most recently, Langan completed an environmental assessment to identify known and potential Recognized Environmental Conditions (RECs), in accordance with the ASTM Standard Practice for Phase I Environmental Site Assessment (ESA) (E1527-13). This Baseline RI Work Plan also incorporates the findings from historical investigations as well as subsequent Phase II ESA activities, conducted to investigate the known or potential RECs.

In March 2015, Langan prepared a Phase I ESA on behalf of TGG for a 42-acre portion of the Site; the Phase I ESA at the time did not include the southwestern-most portion of the Site or the two parcels east of North 7th Street. Based on our review of information obtained from historic environmental and geotechnical reports, historic site maps (fire insurance maps, topographic maps, city maps), historic city permit records, aerial photographs, interviews, environmental databases, and observations made during the site inspection, Langan identified the following six RECs (four on the Site and two on adjacent or nearby properties) associated with the Logan Pointe Redevelopment Area:

- REC-1: Impacted Fill Material (Site-Wide);
- REC-2: Former Onsite Fuel Filling Station at 800 West Wyoming Avenue;
- REC-3: Underground Heating Oil Tank – Former Bakery at 4747 North 11th Street;
- REC-4: Underground Tank and Dry Cleaning Machine at 922 Courtland Street;
- REC-5: Adjacent Property – Former Fuel Filling Station at 4800 North 9th Street; and
- REC-6: Nearby Property – Former Fuel Filling Station at 4735 North Marvine Street.

For the ±4 acres of land that were not included in the 2015 Phase I ESA but are part of the SIA-designated Site, Langan reviewed historic site maps (fire insurance maps, topographic maps, and city maps), historic city permit records, and aerial photographs. Based on this supplemental environmental review, we identified one additional REC associated with the added land:

- REC-7: Underground Heating Oil Tank – Former Corner Deli at 4767 North 7th Street.

The locations of the RECs are depicted on Figure 3.

On behalf of TGG, Langan completed a focused Phase II investigation at the Site in spring 2015 to supplement historical investigations and address the six RECs identified in our March 2015 Phase I ESA Report. In general, the supplemental site investigation included completion of geophysical surveys, test pit excavations, surface and subsurface soil sample collection and lab analyses, as described within this report. The geophysical investigation confirmed the presence

of three of the seven suspected onsite underground storage tanks (USTs). The other four suspected USTs may still be present but could not be detected by the geophysical investigation because of instrument depth limitations or interferences. The suspected UST located at 4767 North 7th Street was not investigated in 2015 and represents a data gap.

As part of a combined geotechnical/environmental investigation, Langan personnel observed test pit excavations at 31 locations across the Site. Discrete surface soil/fill samples (0-2 feet below ground surface [ft bgs]) and subsurface soil/fill samples (2-15 ft bgs) were collected from 9 of the 31 test pits (L-TP-1 through L-TP-9, see Figure 3) based on their location within or adjacent to an identified REC. Two of the soil/fill samples were collected from a test pit excavated outside of known or potential RECs to provide information to characterize the quality of the fill that is present Site-wide. Groundwater investigation was not completed in 2015 and is not warranted because there are no potential environmental exposure pathways of concern based on the results of the soil investigation, the regional potable water source for the Site and surrounding properties, and the planned redevelopment concept plan.

This Baseline RI Work Plan largely relies on historic surface soil investigations and remediation previously completed and those more recently completed as part of due diligence proceedings in 2015. These data sufficiently characterize environmental conditions in accordance with requirements of an SIA-designated Site. Except for the suspected UST on the property at the southeastern corner of North 7th Street and West Loudon Street, additional investigation of the SIA-designated property is not needed or proposed to identify any immediate, direct, or imminent threats to potential receptors that could stem from impacts to environmental media related to historical fill at the Site and/or former on-site operations.

For the suspected UST at the southeastern intersection of North 7th Street and West Loudon Street, supplemental Baseline RI activities are needed and include completion of a geophysical survey to investigate the presence and location of the UST or evidence of a former UST. If investigation reveals more definitive evidence of a former UST, the tank will be closed in accordance with the state and local requirements for unregulated USTs, as will the other on-Site known and suspected unregulated USTs.

Results obtained from the previously completed investigation and remediation activities at the Site are substantially documented herein. These abundant data, along with focused supplemental investigations proposed, provide Baseline Remedial Investigation data that will be used to: 1)

identify impacts that represent an immediate, direct or imminent threat to public health and the environment under the Act 2 SIA provision, and 2) establish baseline environmental conditions to be documented in final Baseline Environmental Report that will serve as the basis for the Consent Order and Agreement (CO&A) and establish eligibility for liability protection under the Act 2 SIA standard.

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1.0 INTRODUCTION

Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Baseline Remedial Investigation (RI) Work Plan on behalf of Logan West Associates, L.P., care of The Goldenberg Group, Inc. (LWA/TGG), for ±46 acres of vacant land in the Logan Neighborhood of North Philadelphia, Pennsylvania (the 'Site'), as shown on Figure 1. The 18 parcels comprising the Site, collectively referred to as the Logan Pointe Redevelopment Area, are located between West Roosevelt Boulevard and North 11th Street in the east-west direction, and between West Loudon Street and West Wingohocking Street in the north-south direction. The Site is located entirely within a federal Qualified Opportunity Zone (see Figure 2) and is eligible for Special Industrial Area (SIA) qualification under the Pennsylvania Act 2 Land Recycling Program. The Redevelopment Authority of the City of Philadelphia (PRA) owns the Site, and LWA/TGG is the designated Redeveloper and intends to develop the Site for mixed use redevelopment. Re-development will be completed in multiple phases and integrated with remediation of the Site. Potential redevelopment plans for the Site include the following type uses: institutional, light industrial (e.g., distribution/warehouse), retail, community open space, and food/restaurant, all of which are in line with the zoning designation of the Site as Community Commercial Mixed-Use (CMX-3) land.

Environmental site assessment and characterization activities for the Site were completed in two separate efforts. On behalf of TGG, Langan completed a Phase I Environmental Site Assessment (ESA) and a subsequent focused Phase II soil investigation for a 42-acre portion of the Site in spring 2015. The 2015 site assessment and characterization activities did not include the southwestern-most portion of the Site or the two parcels east of North 7th Street. The findings of the Phase I ESA and the Site characterization are presented in this Baseline RI Work Plan. The Phase I ESA identified potential Recognized Environmental Concerns (RECs) associated with the Site or nearby sites and serves as the foundation for the scope of this Baseline RI Work Plan. The geophysical investigations, test pit excavations, and soil/fill sampling activities completed in 2015 largely fulfill the Baseline RI objectives. The locations of the RECs, subsequent sample locations, and soil analytical results summaries are depicted on Figure 3.

The Site has remained vacant and unused since completion of the Phase I ESA in 2015, and Langan completed supplementary environmental site assessment of the ±4 acres of land that are now included in the Site extent. The historic and 2015 data sufficiently characterize environmental conditions in accordance with requirements of an SIA-designated site. Except for

the suspected UST on the property at the southeastern corner of North 7th Street and West Loudon Street, additional investigation of the SIA-designated property is not needed or proposed to identify any immediate, direct, or imminent threats to potential receptors that could stem from impacts to environmental media related to historical fill at the Site and/or former on-site operations.

This Baseline RI Work Plan was prepared in accordance with guidance and requirements for reuse and remediation of industrial properties under the Pennsylvania Act 2 SIA provision, as provided in the Pennsylvania Land Recycling Program Technical Guidance Manual (January 19, 2019), Pennsylvania Act 2 (35 P.S. 6026.305(b)), and 25 Pa. Code §250.503(b).

1.1 SIA Eligibility and Qualification

Act 2 contains special provisions that encourage the redevelopment of industrial areas. In accordance with 25 Pa. Code § 250.502, a property qualifies as a special industrial area (SIA) if:

- The property was used previously for industrial activity and there is no financially viable responsible party to address contamination; or
- The property is located within an Enterprise Zone or Keystone Opportunity Zones designated by the PA Department of Community and Economic Development (DCED); and
- The remediator did not cause or contribute to releases at the property.

If the property is located within an EZ, financial viability is not a requirement for SIA use (35 P.S. 6026.305(a) and 25 Pa. Code § 250.502).

The Logan Redevelopment Site qualifies as a SIA for the following reasons:

- Historic activities at the Site included extensive fill placement throughout the Site and industrial operations, such as metal production, dental instrument manufacturing, valve/coil spring/boiler manufacturing, and clothing manufacturing, as discussed in Section 5.5.
- As shown in Figure 2, the Site is entirely located within a federal Qualified Opportunity as determined by the U.S. Department of the Treasury.
- By letter dated February 21, 2019 and addressed to the Pennsylvania Department of Environmental Protection (PADEP), the PA DCED confirmed their policy to

consider all Opportunity Zones including Federal Opportunity Zones as enterprise zones for Act 2 purposes, specifically the SIA designation. A copy of this letter is included as part of Appendix A.

- The City of Philadelphia, Division of Development Services, issued a letter dated February 25, 2020 to the PADEP specifically regarding the Logan Redevelopment Site. The letter is included as part of Appendix A and states that the Logan site is located within a Qualified Opportunity Zone and, therefore, is eligible for consideration as a SIA. The city also expresses their desire to redevelop the blighted and vacant Site.

Based on the above information and supporting documents provided as Figure 2 and Appendix A, the Logan Redevelopment Site qualifies for SIA designation. On February 26, 2020, LWA/TGG and Langan spoke with the PADEP Southeast Regional Office (SERO) Program Manager of the Environmental Cleanup and Brownfield Program to provide background information, planned cleanup in accordance with the Act 2 SIA provision, and the proposed Site redevelopment plan.

1.2 Objective

The purpose of the Baseline RI Work Plan for the Site is to define site characterization tasks to assess the RECs, and identify potential exposure pathways/receptors related to environmental impacts. Because of the abundant previous investigation and remediation data that is available, these data are relied upon to sufficiently characterize environmental conditions in accordance with requirements of an SIA-designated Site. Because additional parcels comprising +/- 4 acres that were not previously assessed have been incorporated into the SIA-designated Site, the Work Plan presents investigation activities focused on establishing baseline environmental conditions for those portions of the Site. The findings of these focused efforts will be incorporated so that the entire Site may qualify for liability protection under the Act 2, Special Industrial Area Remediation Standard. Should the release of Act 2 regulated hazardous substances be identified, information will also be assessed to evaluate impacts that may pose an immediate, direct, or imminent threat to public health and the environment consistent with the intended industrial/commercial future use of the SIA Site.

1.3 Information Sources

In developing the Baseline RI Work Plan, Langan reviewed many previous environmental and geotechnical investigation reports completed for the Site.

The following geotechnical and/or environmental reports have been prepared for the Site:

- 1986, August. *Geotechnical Investigation, Study of Soil Conditions, Logan Area, Philadelphia, PA.* Lippincott Engineering Associates.
- 1987, April. *Supplemental Geotechnical Investigation, Study of Soil Conditions, Logan Area, Philadelphia, PA.* Lippincott Engineering Associates.
- 1987, October. *Logan Area Recommendations.* Lippincott Engineering Associates.
- 1995, September. *Nehemiah Logan Area Homes.* Environmental Engineering Services.
- 1998, May. *Phase I Sampling/Testing of Logan Section, Philadelphia.* U.S. Army Corps of Engineers, Philadelphia District.
- 1999, February. *Phase II Sampling/Testing of Logan Section, Philadelphia.* U.S. Army Corps of Engineers, Philadelphia District.
- 1999, May. *Report on Soil Testing Results, Logan Section, Philadelphia.* Urban Engineers, Inc.
- 1999, June. *Phase II Draft Report – Logan Section, Philadelphia.* U.S. Army Corps of Engineers, Philadelphia District.
- 2000, July. *Logan (Feltonville) Sinking Homes Study, Philadelphia.* U.S. Army Corps of Engineers, Philadelphia District.
- 2000, December. *Response Action Plan, Logan Section, Philadelphia.* Urban Engineers, Inc.
- 2001, March. *Environmental Soil Remediation, Logan Section.* Urban Engineers, Inc.
- 2004, November. *Geotechnical Study of Logan Triangle Redevelopment.* Urban Engineers, Inc.

- 2015, March. *Phase I Environmental Site Assessment, Logan Redevelopment Area.* Langan Engineering & Environmental Services, Inc.
- 2015, May. *Limited Phase II Site Investigation, Logan Pointe.* Langan Engineering & Environmental Services, Inc.
- 2015, June. *Preliminary Report of Due Diligence Geotechnical Investigation, Logan Triangle,* Earth Engineering Incorporated.

Of the above-cited historic reports, Langan was provided with the Geotechnical Investigation report for the Logan Area prepared by Lippincott Engineering Associates (Lippincott) in August 1986, the Logan (Feltonville) Sinking Homes Study prepared by the U.S. Army Corps of Engineers, Philadelphia District (USACE) in July 2000, the Response Action Plan prepared by Urban Engineers, Inc. (UEI) in December 2000, and the Geotechnical Study prepared by UEI in November 2004. We also were provided with the three due diligence reports prepared in 2015. Copies of the historic reports from 1986, 2000 and 2004, and the geotechnical report prepared in 2015 are provided as Appendix B.

Detailed summaries of the historic reports provided to Langan for our review are presented in Section 3.2 of our March 2015 Phase I ESA and Section 7.1 of this Baseline RI Work Plan. The geotechnical reports focus on the extent and quality of the fill. The 2000 Response Action Plan (RAP) was prepared in accordance with one of several requirements stipulated by the United States Environmental Protection Agency (USEPA) in the Memorandum of Agreement (MoA) entered into by the USEPA and the City of Philadelphia in October 2000. Based on analytical results of surficial soil samples collected by UEI in May 1999, lead and arsenic were detected at concentrations above their respective PADEP Act 2 statewide health standards. The USEPA completed additional sampling that consisted of collecting 230 surficial soil samples in November 1999. Lead was detected at concentrations ranging from 25 milligrams per kilogram (mg/kg) to 22,300 mg/kg. The USEPA determined that the appropriate cleanup level for lead at the Site is 730 mg/kg. Six areas having a combined area of approximately five acres were targeted for remediation because of high lead levels that pose potentially unacceptable risks to young children under a residential exposure scenario.

In October 2000, the City of Philadelphia and the USEPA entered into a MoA to excavate the top twelve inches of lead-impacted soil at these six areas. The City of Philadelphia has

reportedly remediated the top twelve inches of these areas by excavating and disposing of 9 million tons of lead-impacted soil and replacing it with clean fill. Following surficial soil remediation at the EPA-designated risk areas, the EPA approved site closure (Logan Section Contamination) in 2001. However, Langan was not provided with the remedial action completion report or final remedial decision documents for the limited soil remediation. Langan was also not provided soil data for our review. As part of completing the Baseline Environmental Report, Langan will submit more specific requests under the Freedom of Information Act in attempt to obtain copies of these remedial decision documents. As discussed in Section 6.0, in spring 2015, Langan collected soil samples for lead and arsenic from three of the six areas previously remediated by USEPA.

1.4 Work Plan Organization

Results and findings from the Langan Phase I ESA in 2015 are provided in Sections 2.0 through 5.0, potential areas of concern for the SIA Site are detailed in Section 6.0, and subsequent Phase II ESA activities and findings are described in Section 7.0. Sections 8.0 and 9.0 present field and laboratory quality assurance/quality control protocols and health and safety measures that were implemented during the Phase II ESA activities. Municipal and public notification information is presented in Section 10.0. The elements of the Baseline RI Work Plan are provided in Section 11.0. References are provided in Section 12.0.

2.0 PHASE I ESA – LANGAN 2015

A Phase I ESA was completed for the Site to evaluate historical activities and to identify areas of potential concern to be further characterized under the Baseline RI Work Plan. On behalf of TGG, Langan completed a Phase I ESA and a subsequent focused Phase II soil investigation for a 42-acre portion of the Site in spring 2015. The 2015 site assessment and characterization activities did not include the southwestern-most portion of the Site or the two parcels east of North 7th Street. The Site has remained vacant and unused since 2015, and Langan completed supplementary environmental site assessment for the ±4 acres of land that are now included in the Site extent. The environmental site assessments included review of past and present uses of the Site, reviews of historic aerial photographs, historic city maps, historic topographic maps, historic fire insurance maps, historic city permits, previous environmental and geotechnical reports, and a Site inspection. In addition, searches of environmental databases were completed for the Site and surrounding properties.

The specific scope of services for the Environmental Site Assessment included the following:

- A site reconnaissance to characterize on-Site conditions and assess the Site's location with respect to adjoining and surrounding property uses and natural surface features.
- A review of available historic environmental and geotechnical reports completed for the Site. Copies of the 1986, 2000 and 2004 reports and the 2015 geotechnical report are included as Appendix B.
- A review and interpretation of historical topographic maps, copies of which are presented as Appendix C.
- National wetland inventory and flood plain designation maps were reviewed. A search of state natural resources was also completed. Copies of the federal and state natural resources maps and documents are included as Appendix D.
- A review and interpretation of historical Sanborn® Fire Insurance Maps (Sanborn Maps) and aerial photographs, to identify previous activities on and in the vicinity of the Site. The fire insurance maps and aerial photographs are included as Appendices E and F, respectively.

- A review of environmental databases maintained by the USEPA, state, and local agencies within the approximate minimum search distances described in ASTM E1527-13. The database search report is included as Appendix G.
- A review and interpretation of historical city directories to identify previous activities on and in the vicinity of the Site. The city directory listings are included as Appendix H.
- Freedom of Information Act (FOIA) requests were sent to federal, state, and local agencies.
- Archived records, including historic permit applications, from the City of Philadelphia Departments of Licenses & Inspections (L&I) and Zoning were reviewed. Copies of the city records are included as Appendix I.
- Physical characteristics of the Site were determined through published sources for topographic, geologic, soils, and hydrologic data.

No environmental sampling was conducted during the Phase I ESA.

3.0 SITE DESCRIPTION

A physical description of the property location, improvements and physical setting are detailed below.

3.1 Location and Description

The Site is located in the Logan neighborhood of North Philadelphia, Pennsylvania (see Figure 1). The Site is comprised of approximately 46 acres and is bound by North 11th Street to the west, West Loudon Street to the north, a utility easement east of North Marshall Street to the east, West Roosevelt Boulevard to the southeast, and West Wingohocking Street to the south. The privately owned parcels along West Roosevelt Boulevard that are developed as the Harold O Davis Memorial Baptist Church and the Zion Assemblies of God Church are excluded from the Site boundary, as shown on Figures 2 and 3.

According to the City of Philadelphia Office of Property Assessment (OPA) records, the Site is comprised of 18 parcels, all of which are owned by the Redevelopment Authority of the City of Philadelphia (PRA), as summarized in the table below. Historically, the Site contained over 950 individual parcels, which were consolidated after the properties were condemned because of land subsidence.

Parcel ID	OPA Account Number	Street Address	Owner
1	785607040	4511-49 N 11th Street	PRA
2	785607080	4508-46 N 10th Street	PRA
3	785607120	901-39 W Roosevelt Boulevard	PRA
4	785607110	701-41 W Roosevelt Boulevard	PRA
5	785590030	4608-26 N 8th Street	PRA
6	785590040	4600-50 N 9th Street	PRA
7	785590050	4601-55 N 10th Street	PRA
8	785607090	4600-54 N 10th Street	PRA
9	785607050	4601-55 N 11th Street	PRA
10	785607060	4711-61 N 11th Street	PRA
11	785607070	4712-64 N 10th Street	PRA
12	785590020	4715-65 N 10th Street	PRA

13	785590010	4712-64 N 9th Street	PRA
14	785606930	4700-62 N 8th Street	PRA
15	785606920	4715-65 N 8th Street	PRA
16	785606910	4714-66 N 7th Street	PRA
17	785606905	4710-50 N Marshall Street	PRA
18	785607100	4715-55 N Marshall Street	PRA

3.2 Site Features

According to the United States Geological Survey (USGS) Germantown, PA Quadrangle 7.5-minute Series Topographic Map, the Site sits at an elevation of approximately 96 feet above mean sea level (msl). The Site and surrounding area slope to the west-southwest; however, the current slope has been affected by filling activities in the early 20th Century, and slope historically appeared to be to the southeast toward the former Wingohocking Creek, which aligned approximately with Courtland Street. Historic topographic maps depicting elevation contours at and around the SIA Site are included as Appendix C. No surface water features or wetland-type flora were observed on or adjacent to the Site during the inspection, as discussed in Section 3.5.

One structure, located at 4745 North 11th Street, remains standing on the Site. The structure is located along the western boundary of the Site approximately 150 feet south of West Loudon Street. According to historic city permits, the structure is a ±2,300-square-foot, two-story, brick residential row house (now detached/isolated) that was constructed circa 1936. This building was formerly used for mixed use (commercial and residential). Historic commercial use includes a grocery, a seafood store and a drug store (Gene's Pharmacy). The structure is located on a consolidated parcel (4511-49 N 11th Street) that is owned by PRA.

The balance of the Site consists of vacant, vegetated city blocks with vacated streets and deteriorated sidewalks. There are observed instances of short-dumping and miscellaneous trash and solid waste at the ground surface across the Site.

3.3 Infrastructure

Prior to mass demolition, the former row houses and businesses located on the Site were connected to the City of Philadelphia water, sewer and gas underground utility lines that

form a complex infrastructure network. All electric lines are overhead and line the roadways; pole-mounted transformers are located at various places. The City of Philadelphia Water Department (PWD) provides water, sewer and stormwater service to the Site. PWD sources for potable water include intakes along the Schuylkill River and Delaware River; groundwater is not used as a source of potable water by PWD.

The sewer lines that service the Site are part of a combined system that carries both sanitary sewage and stormwater, which is ultimately discharged to the Delaware River. Except for the remaining structure at 4745 North 11th Street, the only service PWD continues to provide to the Site is stormwater removal. Philadelphia Gas Works (PGW) owns the gas lines, which are located in the bed of the roadways at an approximate depth of three feet below ground surface.

3.4 Surrounding Properties

Based on visual observations of the surrounding area made during the site reconnaissance in 2015, the Site is located in an urban area primarily characterized by commercial, institutional and residential properties. Surrounding property usage we observed in 2015 is summarized below:

- North – West Loudon Street is located immediately north of the Site, followed by residential structures, specifically two-story, masonry, single-family attached row houses. Some of the corner buildings have been converted to commercial eateries or retail shops, such a Chinese restaurant, a small convenience/grocery store and a beauty salon.
- East – A utility easement (overhead electrical) is located immediately east of the Site, followed by an auto body shop (Boris & Sons Auto Body Inc). North 6th Street is located east of the auto body shop, and row houses are located east of North 6th Street.
- Southeast – West Roosevelt Boulevard and the Roosevelt Expressway, a 250 foot wide, 12 lane section of roadway, is located immediately southeast of the Site, followed by residential single-family attached structures.
- South – West Wingohocking Street is located immediately south of the Site. Hunting Park, an outdoor community recreational park, is located south of Wingohocking Street and Roosevelt Boulevard.

- West – North 11th Street is located immediately west of the Site, followed by residential structures, specifically two-story, masonry, single-family attached row houses. Some of the row houses have been converted to commercial establishments, such as a deli, a daycare, and a mini market.

3.5 Wetlands, Flood Plain & Natural Diversity

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, no wetlands, including surface water, are mapped on the Site or on adjacent properties. The nearest mapped wetlands are freshwater forested/shrub wetlands located adjacent to the Tacony Creek within the Tacony Creek Park approximately 1.5 miles east of the Site.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the City of Philadelphia from January 17, 2007, the map panel including the Site (No. 4207570095G) is not printed and all properties within the panel boundary are mapped as Zone X. FEMA defines Zone X as areas of minimal flood hazard outside the Special Flood Hazard Area (SFHA) that are higher than the elevation of the 0.2-percent-annual-chance flood.

Langan completed a search of the Pennsylvania Natural Diversity Inventory (PNDI), which searches records retained by four governmental agencies, including the Pennsylvania Game Commission, the Pennsylvania Department of Conservation and Natural Resources, the Pennsylvania Fish and Boat Commission, and the U.S. Fish and Wildlife Service. Based on the boundary of the Site, no known impacts to threatened and endangered species and/or resources were identified by the PNDI search.

The USFWS wetlands map, FEMA FIRM, and PNDI records are included as Appendix D.

4.0 GEOLOGY AND HYDROGEOLOGY

4.1 Regional

The Logan area of Philadelphia lies along the edge of the Atlantic coastal plain geologic province. The Pennsauken and Cape May formations were deposited in the Logan area and subsequently eroded by local streams, causing the early Paleozoic Wissahickon Formation to be exposed in the creek valleys. Coastal sediments are diverse, consisting of poorly sorted sand and gravels. The Wissahickon Formation is the metamorphic by-product of originally interlayered sedimentary shales and sandstones. These sedimentary rocks were changed to schists and quartzites through intense temperatures and pressures. Marked cleavage, fissility, and coarsely chrystalline texture are characteristic of the Wissahickon Formation. The Wissahickon Formation slopes generally toward the southwest except where local erosion by streams has created valleys. The schist is often highly weathered to a moderate depth.

Ash and cinder fill was placed in the former Wingohocking creek channel and valley circa 1910. The Wingohocking Creek historically flowed through the southern portion of the Site, just north of Courtland Street. The creek was piped underground in a brick sewer interceptor along Courtland Street prior to filling the area. Fill thickness on the Site ranges from negligible to 40 feet thick, which the deepest fill extent occurring near portions of Roosevelt Boulevard along the southeastern portion of the Site, as discussed further in Section 4.2.

4.2 Site Conditions

A geotechnical study conducted in 2000 by the USACE at the adjacent Feltonville neighborhood that is also located in the reclaimed valley of the Wingohocking Creek identified five distinct subsurface strata. Loose to medium compact gray-black miscellaneous fill (ash and cinder mixed with varying amounts of building debris (decomposed brick, glass and wood) as encountered from ground surface to depths as great as 41 feet below ground surface. Residual soils, completely weathered mica schist bedrock consisting of soft-to-medium or medium-to-compact silty clay or silty sand with variable amounts of gravel, were encountered immediately beneath the fill stratum. The residual soils stratum was found to range in thickness from 2 to 12 feet. A stream deposit (recent alluvial) stratum was encountered only in borings advanced along the old stream alignment. Stream deposit consisted of a mixture of soft silt, clay and organic material

overlying a deposit of rounded gravelly fine-to-coarse sand. The stream deposit stratum, where encountered, ranged in thickness from 1 foot to 10 feet. Decomposed mica schist was encountered overlying bedrock and consisted of hard yellow, white or gray micaceous clayey silt with varying amounts of sand. Decomposed mica schist was encountered at depths of up to 43 feet bgs. Bedrock underlies the decomposed mica schist. The USACE encountered weathered bedrock in only three of the thirteen borings advanced in the Feltonville section. Weathered bedrock was encountered at depths ranging from 20 to 38 feet bgs. Results of Lippincott's geotechnical studies at the Site in 1986 and 1987 indicated that bedrock consists of partially weathered and moderately fractured mica schist with a Rock Quality Designation (RQD) ranging from 7 to 30 percent, indicating moderately hard rock.

Groundwater was only encountered in a few of the borings installed by USACE at the adjacent Feltonville section in 2000. Depths to the groundwater table varied from 21 to 42 feet bgs. No monitoring wells were installed during the USACE investigation. Groundwater in this area of Philadelphia is not used as a potable water source. Potable water is provided to the Site by the Philadelphia Water Department and is derived from the Delaware River (57% supply) and the Schuylkill River (43% supply). Potable water is treated at either the Samuel S. Baxter Plant, the Belmont Plant or the Queen Lane Plant.

5.0 SITE HISTORY AND RECORD REVIEW

The site history review consisted of accessing and reviewing public files and databases to determine whether there is documentation pertaining to historic incidents, including release of regulated substances, which could have resulted in an environmental impact to the Site or adjacent properties. In addition, information was obtained and reviewed to assist in our determination and confirmation of the general site history including historical substances use, handling and disposal activities. This included reviewing readily available previous reports, as discussed in Section 1.2, and database records maintained by the USEPA and PADEP. Langan also filed Freedom of Information Act (FOIA), right-to-know (RTK), or file review requests with USEPA, PADEP and pertinent city of Philadelphia departments, and we reviewed online records databases maintained by USEPA, PADEP and the city of Philadelphia. Available historic resources (including aerial photographs, Sanborn and topographic maps, and city directories) dated 1899 to 2010 were also reviewed as part of the environmental site assessment. Information obtained from these sources is summarized in the following sections.

5.1 Ownership

According to the City of Philadelphia Office of Property Assessment (OPA), all 18 parcels that comprise the Site are owned by the Philadelphia Redevelopment Authority, also known as the Redevelopment Authority of the City of Philadelphia. Deed information indicates that PRA acquired the Site in 2007 and 2012 via Deeds of Condemnation. Many of the former parcels were owned by the Logan Assistance Corporation, a nonprofit, government-funded agency created in 1987 to help re-locate displaced families. Historically, the over 950 individual parcels that comprised the Site were owned by private entities, primarily home residential homeowners.

5.2 Historic Sanborn Maps

A search for historical fire insurance maps for the Site and surrounding properties was conducted by EDR and reviewed by Langan. Sanborn® Maps constitute a database of prior site uses of real property for many cities and towns in the United States. Copies of the fire insurance maps are included as Appendix E.

The Site was historically used primarily for residential purposes. Two-story attached residential structures lined the streets that bound and intersect the Site. The row houses were constructed circa 1920. The majority of the row houses were demolished in the 1990s and early 2000s. Historically, retail shops operated from the ground floor of several of the onsite structures, especially corner buildings. Onsite commercial operations noted in the Sanborn® maps include:

- 4755 North 11th Street is identified as a bakery in the 1950, 1975, 1979, 1989, 2001, 2003 and 2005 Sanborn® maps.
- 4747 North 11th Street is labeled as a bake shop (White Palace Bakery) that is outfitted with three ovens in the 1924, 1950, 1975 and 1979 Sanborn® maps. This structure is identified as vacant in the 1989 Sanborn® map.
- 4741-43 North 11th Street is identified as a clinic in the 1989 and 2001 Sanborn® maps. This structure is identified as vacant in the 2003 Sanborn® map.
- 800 West Wyoming Avenue is identified as an auto repair shop and fuel filling station in the 1950 and 1975 Sanborn® maps. This structure is identified as vacant in the 1979 Sanborn® map and as a dwelling in the 1989 Sanborn® map.

- 909 Roosevelt Boulevard is identified as an undertaker in the 1950 and 1975 Sanborn® maps. This structure is identified as a dwelling in the 1979 Sanborn® map.
- 922–926 Courtland Street is identified as a medical office in the 2003 and 2005 Sanborn® maps, as offices in the 1979 and 1989 maps, as an auto garage and plumber in the 1975 map, as an auto garage and store in the 1950 map, and as a dwelling and two stores in the 1924 map.

Many other onsite structures were identified as having been used for commercial purposes; however, specific use is not identified in the Sanborn® maps. Additional operation and ownership information for commercial parcels was reviewed by Langan via an online search of the City of Philadelphia's record archive database. Information from several permit documents indicates that there are several RECs either onsite or nearby, as described in Section 6.0. The Sanborn® Map review has verified many of the findings of the city record search.

1924

The Site is developed with attached single family dwellings on both sides of all interior streets. Various dwellings are designated as stores throughout the property. A bakery is located at 4747 North 11th Street.

The surrounding area is developed in a similar manner to the Site, with duplex or row house dwellings, some of which are used for retail purpose. Several churches are located throughout the surrounding area. Two automobile garages, one of which Langan identified as REC-6, are located on North Marvine Street to the west of the Site.

1950

A bakery is located at 4755 North 11th Street. An auto repair shop and fuel filling station is located at 800 West Wyoming Avenue; three gasoline tanks are mapped along West Wyoming Avenue. An undertaker is located at 909 West Roosevelt Boulevard.

A curb-side gasoline fueling station is located across Loudon Street at 4800 North 9th Street, immediately north of the Site. Two gasoline tanks are identified at this filling station in the 1950 Sanborn® map. A bakery appears at 1116 West Loudon Street to the west of the Site. An auto sales and services shop is located at the northwestern intersection of

West Loudon Street and North Marvine Street. Multiple single family dwellings appear on a previously empty lot to the south of the Site.

1975

The Site appears generally similar to the 1950 Sanborn® map.

A community center appears at 4830 North 11th Street to the north of the Site.

1979

The former auto repair shop and filling station located at 800 West Wyoming Avenue is identified as vacant in the 1979 Sanborn® map. The former undertaker at 909 West Roosevelt Blvd appears as a dwelling in the 1979 Sanborn® map.

Surrounding properties appear generally similar to the 1975 Sanborn® map.

1989

Fourteen attached dwellings along West Roosevelt Boulevard on the southeastern portion of the Site have been demolished. The former bakery at 4747 North 11th Street has been converted to a clinic.

No significant changes to the surrounding area are noted in the 1989 Sanborn® map.

2001

A significant amount of structures (approximately 75-percent of the original structures) have been removed from the Site. Various structures remain on the Site. Twelve structures, including the bakery at 4755 North 11th Street and the clinic at 4741-43 North 11th Street, remain along North 11th Street on the northwestern corner of the Site. Twenty-two structures remain along North Hutchinson Street on the north-central portion of the Site. Six structures remain along the eastern side of North 10th Street at its intersection with West Courtland Street. Four structures remain along North 7th Street along the eastern boundary of the Site. Eight structures remain along the eastern side of North 9th Street on the northern portion of the Site. One structure remains at 4724 North 8th Street. Seven structures remain along the northern side of West Wyoming Avenue western portion of the Site.

The privately-owned churches located at along West Roosevelt Boulevard remain.

2003

Additional structures have been removed from the northwestern corner of the Site. All but four of the structures on the northwestern corner of the Site have been demolished; the bakery store remains at this location. A triangular-shaped medical office building remains at the southeastern intersection of West Courtland Street and North Hutchinson Street. The seven dwellings remain along the northern side of West Wyoming Avenue on the western portion of the Site; the twenty-two dwellings remain along either side of North Hutchinson Street on the northern portion of the Site; the eight dwellings remain along the eastern side of North 9th Street on the northern portion of the Site; the one dwelling remains at 4724 North 8th Street; and the four dwellings remain along North 7th Street along the eastern portion of the Site.

2005

No significant changes to the property have occurred.

5.3 Historic Aerial Photographs

Langan reviewed aerial photographs of the Logan Pointe Redevelopment Area and surrounding areas for the years 1942, 1945, 1951, 1965, 1971, 1973, 1981, 1988, 1993, 1999, 2005, 2008, 2010, and 2019. Copies of the aerial photographs are included as Appendix F. The Site was developed with attached residential structures from 1942 to 1999. Significant building demolition is apparent by 1993, and the Site appears almost entirely vacant and vegetated from 2005 to present. Langan's review of historical aerial photographs indicates that surrounding land use has been primarily residential with some commercial, institutional and recreational usage. Langan's review of aerial photographs did not indicate RECs at the Site or surrounding area.

1942

The Site is completely developed with attached single-family residential structures that line the streets bordering and intersecting the Site. Trees are apparent along Wyoming Avenue and Roosevelt Boulevard. Row houses and two churches are located adjacent to the Site. School buildings are located on outlying land to the north and west of the Site. Hunting Park, a recreational park, is located to the south of the Site. A lake is present

within Hunting Park. The area in general appears primarily residential with some commercial and institutional usage.

1945

No significant changes are apparent in the 1945 photograph compared to the 1942 photograph. A railroad track is apparent immediately east of the Site. Industrial structures appear along the eastern side of the railroad.

1951

The Site appears generally similar to the 1942 and 1945 aerial photographs. The pond in Hunting Park to the south of the Site appears to have shrunk. New commercial or industrial buildings appear at the southeastern intersection of Lindley Avenue and North 7th Street to the north of the Site and at the eastern intersection of Windrim Avenue and Old York Road to the west of the Site.

1965

No significant changes are noted in the 1965 photograph. Route 13 appears along Roosevelt Boulevard to the south of the Site.

1971

The Site appears generally similar to the 1965 aerial photograph. Former residential attached structures located along the northern side of West Ruscomb Street between North 9th Street and North Hutchinson Street to the north of the Site have been demolished.

1973

No significant changes are noted in the 1973 photograph.

1981

The Site appears generally similar to the 1973 aerial photograph. The former pond in Hunting Park has been filled in and converted to an oval track. The building located along the northern side of West Rockland Street to the north-northeast of the Site appears extended northward.

1988

Approximately 14 attached residential homes located along West Roosevelt Boulevard on the southeastern portion of the Site have been demolished. One dwelling along the western side of North Warnock Street on the northwestern portion of the Site has also been demolished. The balance of the Site and surrounding properties appear generally similar to the 1981 aerial photograph.

1993

Many more dwellings on the Site have been demolished. Demolition occurred primarily on the southeastern, central and northeastern portions of the Site. Row houses remain along the western and northwestern portions of the Site. Surrounding properties appear generally similar to the 1988 aerial photograph.

1999

Nearly all structures have been removed from the Site. Row houses remain along North 11th Street on the western portion of the Site and along either side of North Warnock Street on the southern portion of the Site. Various structures remain scattered between West Wyoming Avenue and West Loudon Street on the northern portion of the Site. Former attached residential structures located between North 7th Street and North Marshall Street immediately east of the Site have also been demolished; however, the church structure remains standing. A new school building appears along North Marshall Street on outlying land to the north-northeast of the Site. A new commercial structure (Rite-Aid) replaces a former commercial building at the eastern intersection of Windrim Avenue and Old York Road on outlying land to the west of the Site.

2005

Six or seven detached row houses are located on the Site, and the balance of the Site is vacant and vegetated. All but one of the structures are located on the northern portion of the Site between West Wyoming Avenue and West Loudon Street. A former commercial or industrial building located along the southern side of West Courtland Street to the east of the Site has been demolished.

2008

The Site appears generally similar to the 2005 aerial photograph. One or two additional dwellings on the northern portion of the Site may have been demolished. A new Rite Aid building appears along the southern side of West Courtland Street to the east of the Site.

2010

Five structures appear on the Site. Four of the structures appear to be residential and are located on the northern portion of the Site between West Wyoming Avenue and West Loudon Street, and the fifth structure appears to be commercial and is located along the southern side of West Courtland Street. The balance of the property appears vegetated and vacant. Surrounding properties appear generally similar to the 2008 aerial photograph.

2019

The Site appears in its current configuration. One detached row house remains at 4745 North 11th Street on the northwestern portion of the Site, and the other four structures present in 2010 have been demolished. The Site appears vacant and vegetated. Arterial roads including Wyoming, Courtland and 9th Street are open to vehicular traffic; other interior roadways are barricaded and impassable.

5.4 File Review

Governmental agency database searches were completed by Environmental Data Resources (EDR) of Connecticut. The searches were obtained and reviewed by Langan for both the Site and surrounding properties. The EDR databases contain over 100 Federal and State regulatory inventories and lists, including those databases that are required to be reviewed by the American Society for Testing and Materials (ASTM) guidelines for conducting Phase I ESAs (E1527-13). A copy of the EDR environmental database search report is included as Appendix G.

Site

The Site was identified as the "Logan Section Contamination Site" in the federal (USEPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, which contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either

proposed to or on the National Priorities List (NPL), also known as Superfund, and sites which are in the screening and assessment phase for possible inclusion on the NPL. The Site was also identified in the EPA's Potentially Responsible Parties (PRP) database, which contains a listing of verified PRPs. The Site (Logan Section Contamination Site) was also identified on the Orphan Site summary listing within the federal Facility Index System / Facility Registry System (FINDS) database, which may contain references to records from government databases included elsewhere in the EDR report.

According to the December 2000 Response Action Plan (RAP) prepared by UEI, historic site investigation activities included: an environmental evaluation of fill via installation of soil borings (Phase I) and test pits (Supplemental Phase I) by the USACE in 1998, a small-scale surface soil sampling event restricted to lead contamination that was completed by the City of Philadelphia in March 1999, a surface soil sampling event completed by UEI in May 1999, and a surface soil sampling event completed by Weston Solutions, Inc. on behalf of the USEPA in August 1999.

According to the RAP, the USACE advanced four soil borings in 1998 to depths ranging from 18 to 40 feet below grade within the streets of the Site as part of their Phase I sampling/testing of the Logan section. A total of ten soil samples were collected from the fill material and analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Total Petroleum Hydrocarbons (TPHs), Polychlorinated Biphenyls (PCBs), total heavy metals, organochlorine pesticides, chlorinated herbicides, ignitability, corrosivity, reactivity, dioxin/furan and pH. Based on the results of the soil samples collected from the borings, remediation was not recommended, however dermal contact was discouraged and it was advised that future development should not make use of fill as surface soil. Six compounds were detected in exceedance of EPA Risk-Based Criteria (RBCs), and lead was detected above 400 mg/kg; however, the soil is considered non-hazardous. Fill overlying the ash and cinder fill (2 to 5 feet below grade) was further characterized by the USACE by advancing three test pits, from which four soil samples were collected and analyzed for VOCs, SVOCs and metals. Lead and mercury were detected at concentrations above the naturally occurring background levels for these compounds in this region, and pyrene was detected above the then-current state direct contact cleanup criteria.

In March 1999, a total of five composite surface soil samples were collected from the Site (three samples) and offsite to the west (two samples) and analyzed for lead. Lead concentrations ranged from 382 mg/kg to 1,714 mg/kg, and two of the soil samples had lead levels above the state residential direct contact cleanup criterion for lead of 500 mg/kg.

In May 1999, one discrete surface soil samples was collected from each of the seventeen city blocks that comprise the Site. Each sample was analyzed for PCBs, TPH, benzene, ethylbenzene, toluene and xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), pesticides, herbicides and Resource Conservation and Recovery Act (RCRA) metals. Analytical results indicated levels of arsenic and lead above their respective state residential direct contact cleanup criteria. Arsenic exceedances were detected in 10 of the 17 soil samples, and lead exceedances (high of 1,893 mg/kg) were found in four samples. The City of Philadelphia notified surrounding property owners of these findings, following which, the local citizens requested EPA involvement, including investigation and "emergency cleanup." Additional sampling for arsenic was performed in August 1999, with contrary results. Additional samples were collected in August 1999 from the six areas on the Site that had the highest levels of arsenic. Results of these soil samples indicate that arsenic levels were significantly lower than in the earlier (May 1999) round.

The EPA collected a total of 230 discrete surface soil samples across the Site in November 1999. The EPA determined that the appropriate cleanup level for the Site is 730 mg/kg rather than the default state residential direct contact cleanup criterion of 500 mg/kg. Based on the re-assessed lead cleanup criterion of 730 mg/kg, the EPA identified six distinct areas that had high lead levels (average lead concentrations ranging from 868 mg/kg to 22,300 mg/kg) that require remediation because of the potentially unacceptable risk these areas pose under a residential exposure scenario. The six areas (Response Areas 1 – 6) are depicted on Figure 3 and contain a combined area of approximately 5.3 acres, ranging in size from 0.022 acres (Area 4) to 3.173 acres (Area 1).

In October 2000, the City of Philadelphia and the USEPA entered into a Memorandum of Agreement (MoA) to remediate the six areas known to contain elevated surficial levels of lead by excavating and properly disposing of the top twelve inches of material and backfilling with clean material. The RAP details the proposed remediation, including discussion of site security, mobilization, site preparation, soil sampling and leachate testing, excavation and

disposal and site restoration. Remedial measures were proposed to begin by November 30, 2000 and be completed within 75 days.

The subsequent November 2004 Geotechnical Report prepared by UEI infers that remediation was completed as planned and the EPA approved site closure in 2001; however, Langan was not provided with the final remedial report or governmental decision documents regarding response action approval and/or site closure.

Surrounding Sites

The only federal databases in which surrounding sites within their respective minimum search distances as specified by ASTM E1527-13 were identified include Resource Conservation and Recovery Act (RCRA) generator databases, specifically the Small Quantity Generator (SQG), Conditionally Exempt SQG (CESQG) and Non-Generator databases. Surrounding sites were not identified in the EPA NPL, CERCLIS, CORRACTS, or ROD databases within the ASTM-specified minimum search distances.

Surrounding sites identified in state environmental databases include:

- Sites with reported release(s) from regulated UST(s) (LUST sites, 12 identified within ½ mile);
- Sites with release(s) from unregulated tanks (6 sites identified within ½ mile);
- Sites with registered UST(s) (1 site identified within ¼ mile);
- Sites with Activity and Use Limitations (AULs) (1 site within ½ mile); and
- Sites currently or formerly involved in the state voluntary cleanup program (2 sites within ½ mile).

Langan determined that the surrounding sites identified in the federal RCRA databases and the state databases related to tanks and/or cleanups do not represent potential environmental concerns to the Site based on reviews of: the distances of the identified surrounding sites from the Site, the violation history and compliance statuses of the surrounding sites, the cleanup statuses of the surrounding sites, and the relative topographic elevations of the surrounding sites compared to the Site.

5.5 Site Operations and Material Storage, Usage and Handling

The Logan Pointe Redevelopment Area is located in the valley of the Wingohocking Creek, a former tributary of the Frankford Creek that was piped underground in the late 1800s. The creek bed and surrounding areas were filled with cinder ash, gravel, sand, silt and building debris of unknown origins circa 1910 to facilitate development of this area. Reported fill depth at the Site ranges from negligible near Loudon and 11th Streets at the northwestern corner of the Site to 45 feet deep near portions of Roosevelt Boulevard to the southeast. The deepest areas of fill occur near the former creek channel through the southern portion of the Site. By 1920, the Site was occupied by more than 950 two-story rowhomes located along rectangular gridded streets. Over time, the placed ash and fill settled or eroded, and, as early as the 1950s, subsidence and building foundation collapse became apparent because of unsuitable and structurally inadequate foundation materials, consisting of loose ash and cinder fill, that were not effectively compacted.

The City of Philadelphia was notified of severe damage to structures, streets and underground utilities following a gas main explosion in 1986. Starting in the late 1980s and continuing through 2005, the city, through the Logan Assistance Corporation, condemned and demolished the majority of the buildings located on the Site. Basements of the demolished buildings were reportedly backfilled with local material or imported fill from off-site. One detached rowhome, located at 4745 North 11th Street, remains on the Site; the two churches, located at 1001 West Wingohocking Street and 635 West Roosevelt Boulevard, are excluded from the Site boundary. The balance of the Site consists of vacant, vegetated city blocks gridded by vacated streets and deteriorated sidewalks. Of the roadways that pass through the Site, many are barricaded and inaccessible by vehicles, including North Warnock, North 10th, North Hutchinson, North 8th, North Franklin, North 7th and North Marshall Streets. The bordering streets, North 11th, West Wingohocking, West Loudon and West Roosevelt Boulevard, and several arterial streets that pass through the Site, including North 9th Street, Wyoming Avenue and West Courtland Street, remain open to vehicular traffic.

Placed Fill

The substantial amount of ash and fill material that was placed throughout the Site is of unknown origin, and previous investigations have indicated the presence of heavy metals, particularly lead and arsenic, at concentrations above the PADEP Statewide Health Standards. Although focused remediation of surface soil was completed at six areas on the Site in 2001, elevated levels of heavy metals likely remain at depths greater than 1 foot bgs

across the Site. Several environmental and geotechnical investigations have been completed at the Site to determine the extent and quality of the placed fill, as discussed in Section 7.0.

Site Operations

The Site was primarily used for residential purposes; however, several commercial or light industrial businesses operated from the Site. Based on our review of Sanborn maps, historic city permit applications, and historic city directories, the following business operations were present at the Site: grocers, clothing shops, pharmacies, tailors, shoe sales, butchers, chiropractors, dentists and various consulting/service businesses.

According to historic city directory listings (see Appendix H), the locations of specific business operations with the potential to handle hazardous substances or petroleum products include:

- 4706 North 8th Street: metal production company (1925 and 1936);
- 4712 North 8th Street: auto repair shop (1925);
- 4714-16 North 8th Street: Union Dental Instrument Manufacturing Co. (1925);
- 4727 North 8th Street: auto repair shop (1925);
- 4729 North 8th Street: Shaan Dental Laboratory (1936);
- 4732 North 8th Street: used car sales (1936);
- 4728 North 9th Street: valve, coil spring, boiler manufacturing (1954 and 1962);
- 4745 North 9th Street: clothing manufacturing (1925 and 1936);
- 4747 North 9th Street: William Miller Painters (1925, 1936, 1946, 1950 and 1954);
- 4724 North 9th Street: Silver Wallpaper & Paint Co. (1946);
- 800 West Wyoming Avenue: service station (1962, 1967 and 1972); and,
- 939 West Wyoming Avenue: Sun X Glass Tinting and Central Builders (1967, 1972, 1977 and 1982).

The former onsite fueling station located at 800 West Wyoming Avenue and two former off-Site but nearby fueling stations are considered potential areas of concern (see Section 6.0) and were subject to Phase II investigation (see Section 7.0).

Storage Tanks

During a Site inspection completed in 2015, Langan observed a fuel fill pipe and a 275-gallon heating oil aboveground storage tank (AST) at the then-present onsite dwelling located at

4724 North 8th Street, which has since been demolished. The fuel fill pipe was observed along North 8th Street at the front face of the dwelling. The AST was observed in the basement along the front house wall. A fuel fill pipe that appeared to have been capped was observed in the doorway of the then-vacant (now demolished) onsite medical office building located at 922 West Courtland Street. It is unknown whether the hundreds of structures formerly located on the Site had heating oil ASTs, which are not regulated or permitted.

Additionally, Langan identified several city permit applications related to USTs at the Site, as discussed in Section 6.0. Copies of the city permits pertaining to underground tanks are included as Appendix I. Geophysical investigation, test pit excavation and soil sample collection were completed in the vicinity of the suspect USTs, as discussed in Section 7.2.

PCB Transformers and Suspect Equipment

Several pole-mounted transformers associated with the overhead electrical grid are present on the Site. Five pole-mounted transformers were observed along the southern side of West Courtland Street. Three pole-mounted transformers were observed along North 9th Street. Three pole-mounted transformers were observed along North 10th Street. One pole-mounted transformer was observed along North Hutchinson Street, and one pole-mounted transformer was observed along West Loudon Street. It is unknown whether the pole-mounted transformers contain Polychlorinated Biphenyls (PCBs). It is assumed that the local utility company (PECO) owns, operates and is responsible for the onsite transformers. No corrosion or staining was observed on or near the transformers, which are not considered a potential area of concern and do not warrant further investigation.

Waste Generation, Storage, and Disposal

Scattered litter debris and piles of trash were observed throughout the vacant Site. Observed waste materials included furniture, wood, carpeting, food and drink debris, tires, electronics, and drywall. Waste materials appeared to be non-hazardous and surficial. Surficial debris is not considered a potential area of concern and does not warrant further investigation.

6.0 IDENTIFIED POTENTIAL AREAS OF CONCERN

Based on our review of information obtained from the sources reviewed as part of the Phase I ESA (see Section 2.0), Langan has identified the following potential Recognized Environmental Concerns (RECs) for the SIA Site. The locations of each REC are shown on Figure 3.

As presented in our March 2015 Phase I ESA, Langan identified the following six RECs (four on the Site and two on adjacent or nearby properties) in association with the Logan Pointe Redevelopment Area:

- **REC-1: Impacted Fill Material**

  The presence of imported fill material of unknown origin across the Site is a REC. Based on analytical results of surficial soil samples collected by Urban Engineers, Inc. (UEI) in May 1999, lead and arsenic were detected at concentrations above their respective PADEP Act 2 statewide health standards. The USEPA collected additional soil samples that consisted of 230 surficial soil samples in November 1999. Lead was detected in soils at concentrations ranging from 25 mg/kg to 22,300 mg/kg. The USEPA determined that the appropriate site-specific cleanup level for lead at the Site is 730 mg/kg. Six areas having a combined area of approximately five acres were remediated because of high lead levels that pose potentially unacceptable risks to young children under a residential exposure scenario.

  In October 2000, the City of Philadelphia and the USEPA entered into a Memorandum of Agreement (MoA) to excavate the top twelve inches of lead-impacted soil at these six areas. The City of Philadelphia has reportedly remediated the top twelve inches of these areas by excavating and disposing of 9 million tons of lead-impacted soil and replacing it with acceptable fill. Following surficial soil remediation at the EPA-designated risk areas, the EPA approved site closure (Logan Section Contamination) in 2001. However, the remedial action completion report or final remedial decision documents for the limited soil remediation were not readily ascertainable and were not readily available for review by Langan.

  Based on the documented soil studies, elevated levels of lead remain at depths greater than one foot below grade at the six remediated areas, and the presence of impacted soils at depths below 1 foot across the property has potential environmental liability and

represents a REC to be considered prior to any planned purchase or redevelopment of the property. Previous environmental investigations were more focused on surficial soil and the potential for direct contact exposure, with the exception of four borings completed by the U.S. Army Corps of Engineers (USACE) in May 1998 (study not provided to Langan for review).

Langan subsequently collected surface and subsurface soil samples from test pits excavated within three of the six EPA-remediation areas and outside of identified REC areas to characterize fill quality, as discussed in Section 7.0.

- **REC-2: Former Onsite Fuel Filling Station at 800 West Wyoming Avenue**
  The former building located at the southwestern intersection of West Wyoming Avenue and North 8th Street (800 West Wyoming Avenue) on the southeastern portion of the Site operated as a gasoline fueling station and auto repair shop from at least 1950 to the late 1970's. The City of Philadelphia Department of Licenses and Inspections (L&I) issued a permit on November 29, 1971 to then-owner Atlantic Richfield Company (ARCO, formerly known as Atlantic Refining Co.) to inert three leaking 1,000 gallon gasoline USTs and to install two new (one 1,000 gallon and one 2,000 gallon) gasoline USTs. According to a figure submitted with the permit application that Langan ascertained, the three leaking tanks are located beneath the six-inch think concrete, basement floor of the two-story dwelling/gas station building. Three gasoline pumps were located in the sidewalk adjacent to the northeastern corner of the building. The new tanks are mapped within an 8-inch block underground vault along the southern end of the 3-bay garage attached to the southern side of the dwelling/gas station building. Vent and fill ports are mapped along the eastern side of the garage. A pit is depicted on the north-central portion of the garage. It is unknown whether the tanks remain on the Site. The tanks, particularly since they are referred to as "leaking" in the 1971 permit, likely have impacted the subsurface at this location on the Site.

  Geophysical and soil investigations were subsequently completed to evaluate the presence of USTs and subsurface conditions in the vicinity of these tanks historically associated with 800 West Wyoming Avenue, as discussed in Section 7.0.

- **REC-3: Heating Oil Tank – Former Bakery at 4747 North 11th Street**

A permit application for the installation of a 1,000 gallon Number 2 fuel oil (heating oil) tank at the White Palace Bakery, a retail and wholesale bakery located on the northwestern portion of the Site at 4747 North 11th Street, was submitted to the Philadelphia Department of L&I in April 1968. The accompanying figure in L&I files indicates that the tank is located along the eastern side (rear) of the bakery beneath 8-inches of reinforced concrete. Two-inch diameter, fill and vent pipes are shown leading from the tank eastward along the central portion of the northern sidewall of the building. It is unknown whether the heating oil tank remains on the Site but its historical use represents a REC.

Geophysical and soil investigations were subsequently completed to evaluate the presence of the UST and subsurface conditions in the vicinity of the UST associated with 4747 North 11th Street, as discussed in Section 7.0.

- **REC-4: Underground Tank and Dry Cleaning Machine at 922 Courtland Street**

  A summary listing of permit applications for the commercial property located at 922 Courtland Street on the southern portion of the Site identifies two features of potential environmental concern; however, the corresponding actual permit applications were not readily available for review. The readily available information indicates that permit applications were submitted on July 28, 1936 for a 1,550-gallon underground tank and pump and October 27, 1948 for a dry cleaning machine. Typical dry cleaning services involve the use of liquid chemicals called solvents that remove most stains from a variety of fabrics. Most dry cleaners use tetrachloroethene (PCE) as their primary solvent. Commonly at dry cleaner operations, chemicals can enter the ground in liquid form through spills, leaky pipes, leaky tanks, machine leaks, and from improperly handled waste. As such, the underground storage tank and dry cleaning operations have a significant potential to impact the subsurface and possibly affect this location on the Site and represent a REC.

  A geophysical investigation was subsequently completed within and adjacent to the former medical office (now demolished) at 922 Courtland Street, as discussed in Section 7.0.

- **REC-5: Adjacent Property – Former Fuel Filling Station at 4800 North 9th Street**

A curbside gasoline filling station operated from 4800 North 9th Street, located immediately across Loudon Street to the north of the Site, from circa 1930 to mid-1964. A take-out pizzeria (Ed's Pizza House) operated from the basement of this row house property since 1973 until the 2000's. A permit was issued from the City of Philadelphia in May 1959 to "replace leaking 1000-gallon gasoline tanks (underground)." Based on the known presence of a leaking gasoline UST and since this site is located immediately adjacent to the Site in an apparent up-gradient direction, this former filling station is considered a REC.

Langan subsequently collected a soil sample from a test pit excavated onsite, directly across the street from 4800 North 9th Street, to evaluate subsurface conditions related to this REC, as discussed in Section 7.0.

- **REC-6: Nearby Property – Former Fuel Filling Station at 4735 North Marvine Street**
  An automobile garage is located approximately 130 feet from the western boundary of the Site. According to the City of Philadelphia records archive, a permit was issued in August 1937 for the installation of one 1,000-gallon gasoline tank and pump for retail sale at this garage and service station. The figure accompanying the tank permit indicates that an existing 1,000-gallon gasoline tank and pump were located at this site in 1937. The pumps and vents for both tanks are depicted alone the Marvine Street curb ("curb fill"). A permit application was issued in 1961 for the installation of one 2,000-gallon gasoline underground tank inside the garage at this site. A figure accompanying the permit application indicates the proposed tank will be connected to an existing vent and fill. This site was known as Kramer Garage in the 1960's. Based on the proximity of this site to the Site and the presence or former presence of gasoline USTs, these USTs on nearby property are a REC.

  Langan subsequently collected a soil sample from a test pit excavated onsite, at a location nearest to 4735 North Marvine Street, to evaluate subsurface conditions related to this REC, as discussed in Section 7.0.

As a result of the ±4 acres that have been added to the extent of the Site since completion of the Phase I ESA in March 2015, Langan has identified one additional REC, as described below.

- **REC-7: Heating Oil Tank – Former Delicatessen at 4767 North 7th Street**

Langan reviewed a historic permit application for the installation of one 500-gallon heating oil UST at a small delicatessen store and dwelling located on the northeastern portion of the Site at 4767 North 7th Street. The permit application was submitted to the Philadelphia Department of Public Works in October 1933. The permit application indicates that the tank was buried two feet below the cellar floor and measured 4-feet in diameter by 5-feet in length. The application indicates that the tank was installed for private use to heat the structure. No figure accompanied the permit application. It is unknown whether the heating oil tank remains on the Site but its historical use represents a REC that has not yet been investigated.

Sections 7.0 through 9.0 present the methodology, results, QA/QC protocol, and health and safety measures pertaining to the previous investigations completed for the RECs, and Sections 10.0 and 11.0 present municipal and public notification information and the Baseline RI Work Plan for the only REC not yet investigated (suspect UST at 4767 North 7th Street).

7.0 SUMMARY OF PREVIOUS INVESTIGATIONS

Langan obtained and reviewed available files and reports detailing the previous investigations completed for the Site. The specific reports reviewed and discussed in this work plan are discussed in Section 1.2.

Section 7.1 presents a summary of our review of available historic geotechnical and environmental reports, copies of which are included as Appendix B. Section 7.2 presents a summary of the focused Phase II ESA that Langan completed on behalf of TGG in spring 2015 to investigate the RECs identified in our March 2015 Phase I ESA.

7.1 Historic Geotechnical and Environmental Investigations

Langan was provided with the Geotechnical Investigation report for the Logan Area prepared by Lippincott in August 1986, the Logan (Feltonville) Sinking Homes Study prepared by the USACE in July 2000, the Response Action Plan prepared by UEI in December 2000, and the Geotechnical Study prepared by UEI in November 2004. We also were provided with a more recent (June 2015) geotechnical due diligence report prepared by Earth Engineering Incorporated. Copies of the historic reports from 1986, 2000 and 2004, and the geotechnical report prepared in 2015 are provided as Appendix B.

- *Geotechnical Investigations Summary*

The in-depth geotechnical investigation completed for the Logan section by Lippincott in 1986 included surveying, drilling and geotechnical testing to determine the causes for settlement and provide recommendations for possible remedial measures. The study was completed on behalf of the City of Philadelphia Department of Licenses and Inspections and includes information regarding the historic course of the Wingohocking Creek and historic Site elevations, the filling of the Wingohocking Creek valley circa 1910, and the extent, thickness, and structural quality of the placed fill. The Lippincott investigation resulted in the identification of five strata, as discussed in Section 4.2.

The geotechnical investigation completed by the USACE in June 2000 was performed in the neighboring Feltonville section, not the Site. The USACE study reports that over 900 homes in the Logan section of Philadelphia were demolished because of severe settlement of their foundations. The homes were built on coal ash and/or cinder fill that was used to fill in the Wingohocking creek bed. The USACE was commissioned by the City of Philadelphia to investigate the problem. The investigation began by defining the horizontal and vertical extent of the original creek bed and then progressed by mapping the distribution of fill. It was found, as expected, that areas showing the greatest increase in elevation – or depth of fill – are closest to the original course of Wingohocking Creek.

The amount of fill varies in thickness over the Site from negligible to as much as 45 feet. Based on fill thickness contours prepared by Lippincott, no fill is mapped along the central portion of the western boundary of the Site (4600 block of North 11th Street), on the northwestern-most corner of the Site, and on the north-central portion of the Site. Additionally, no fill is mapped on the southwestern-most portion of the Site in the vicinity of the Baptist Church. Fill thickness was found to increase radially outward from these areas, with the deepest area of fill (40 to 50 feet) occurring along the southeastern boundary of the Site between Wyoming Avenue and Courtland Street from Hutchinson to 7th Street. Average fill thickness is 15 feet.

The 2004 Geotechnical Study mentions that the Phase I study completed by Lippincott in September 1995 indicated that soil did not contain significant amounts of VOCs, including BTEX. However, lead levels were high in nine out of ten soil samples, and a Toxicity Characteristic Leaching Procedure (TCLP) analysis for lead indicated that one of three samples had a concentration (5.11 mg/kg) that slightly exceeded the standard of 5 mg/kg.

- *Summary of Historic Environmental Investigation and Remediation of Soils*

The UEI Response Action Plan (RAP) was prepared in accordance with one of several requirements stipulated by the USEPA in the MoA entered into by the USEPA and the City of Philadelphia in October 2000. The RAP describes historic site investigation activities. A summary of the results of the historic soil investigations is presented in Section 5.4.

The EPA identified six distinct areas that had high lead levels in soils (average lead concentrations ranging from 868 mg/kg to 22,300 mg/kg) and required remediation because of the potentially unacceptable risk under a residential exposure scenario. The six areas comprise approximately 5.3 acres and are depicted on Figure 3. According to the November 2004 Geotechnical Report prepared by UEI, this surficial soil was remediated and the EPA approved site closure in 2001.

7.2 2015 Phase II ESA

Between March 31 and April 2, 2015, Langan completed a targeted Phase II environmental investigation on behalf of TGG to address the six RECs identified in our Phase I ESA Report dated March 27, 2015. The Phase II investigation included completion of geophysical surveys, test pit excavations, surface and subsurface soil sample collection and lab analyses. The targeted environmental investigation was completed concurrent with a geotechnical investigation completed by Earth Engineering Incorporated (EEI).

The first phase of the Phase II ESA consisted of geophysical investigation in the vicinity of the potential tanks located at 800 West Wyoming Avenue (REC 2), 4747 North 11th Street (REC 3), and 922 Courtland Street (REC 4) to determine whether the tanks and/or appurtenant features such as fill or vent pipes remain below ground surface. Following the geophysical investigation, Langan observed test pit excavations and collected surface and subsurface soil samples to further investigate soil conditions at the RECs identified in Section 6.0.

Activities were performed following guidelines described in Pennsylvania's Land Recycling Program Technical Guidance Manual (then-dated June 8, 2002), standard industry practices, and proper health and safety protocols required by Occupational Safety and Health Administration (OSHA) Regulations 1910.120. A Site-specific Health and

Safety Plan (HASP), dated March 30, 2015, was prepared and followed by Langan during the field activities performed.

The following sections describe the methodologies and findings of the geophysical and soil investigations completed in spring 2015.

7.2.1 Geophysical Investigation – March 31, 2015

On March 31, 2015, Langan observed a non-intrusive geophysical subsurface investigation conducted by TPI Environmental, Inc. (TPI) of Easton, Pennsylvania. The purpose of the preliminary geophysical survey was to determine the potential presence of USTs associated with RECs 2, 3 and 4. A copy of the geophysical investigation report is included as Appendix J.

Techniques employed during the geophysical survey included collection and interpretation of data from a: Geophysical Survey Systems (GSSI), Inc. Subsurface Interface Radar System 3000 (SIR-3000) Ground Penetrating Radar (GPR) unit with a 400 MHz antenna, a Fisher TW-6 electromagnetic metal detector, CST Magna-Trac 102 Magnetometer, and a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The geophysical search areas were focused at the following locations:

- Area 1 – 4747 North 11th Street property, which consisted of vacant, grassed land located immediately north of a standing detached row house located at 4745 North 11th Street. The geophysical survey focused on an apparent fuel fill port set within a large concrete pad at the eastern end of the parcel, which corresponds with the tank location figure that accompanied a city permit.
- Area 2 – 800 West Wyoming Avenue property, which consisted of vacant, grassed land. The geophysical survey was completed for this entire parcel.
- Area 3 – 922 West Courtland Street property, which was then developed with a one-story medical office building. The geophysical survey focused on an apparent fuel fill port present along the concrete sidewalk within a doorway of the building. Access was granted to the interior of the building, and the GPR unit scanned the floor adjacent to the fill port.

Based on site conditions, the approximate depth of penetration of the GPR signal achieved at the Site was approximately 6 to 8 feet below grade.

UST-style anomalies were detected by the GPR unit at the 4747 North 11th Street and 800 West Wyoming Avenue properties (RECs 2 and 3). A 6-foot by 10-foot UST-style anomaly was detected beneath the concrete pad on the eastern end of the 4747 North 11th Street parcel. The UST-style anomaly surrounds the apparent fill port that was observed at the ground level. The location of the UST-style anomaly coincides with a historic city permit for the installation of a 1,000 gallon heating oil UST that includes a map depicting a 9-foot long tank set beneath a 26-foot long 8-inch think reinforced concrete pad immediately west of the alley running behind the 11th Street row houses. Based on the results of the geophysical investigation, this historic heating oil UST remains in place.

Two adjacent UST-style anomalies were detected in a grassed area on the southern portion of the 800 West Wyoming Avenue parcel. A 9-foot by 16-foot UST-style anomaly was detected approximately 7 feet north of a former driveway. An 8-foot by 13-foot UST-style anomaly was detected approximately 16 feet north of the former driveway, immediately north of the larger UST anomaly. Additionally, two linear anomalies were detected to the south and north of the UST anomalies at distances of 4 feet and 29 feet north of the former driveway, respectively. The locations of the UST-style anomalies coincide with a figure included with a 1971 city permit to install two USTs and inert three USTs. The 1971 figure depicts a 2,000-gallon gasoline UST and a 1,000-gallon gasoline UST within an 8-inch block underground tank vault located on the southern portion of this parcel to the north of the driveway. The linear anomalies detected by the GPR unit are believed to be the block walls of the vault. Based on the results of the geophysical investigation, these historic gasoline USTs remain in place.

The geophysical investigation did not indicate the presence of the three 1,000 gallon gasoline USTs mapped beneath the 6-inch concrete basement floor of the former 2-story dwelling and gas station structure on the northeastern portion of the 800 West Wyoming Avenue property. These USTs had reportedly leaked; however, the 1971 permit indicates these tanks were inerted and not removed. The presumed depth of the tanks (8 feet below grade) may be beyond the practical limits of detection by the GPR unit. As a prudent measure, these tanks should be presumed present and

properly investigated and managed as part of the proposed plan for remediation of the SIA property.

No anomalies were detected within the sidewalk adjacent to the 922 Courtland Street property or within the office room located adjacent to the apparent fill port along the sidewalk. The concrete sidewalk in the area of the apparent fill port is steel-reinforced. While no UST-style anomalies were detected beneath the concrete in this area, steel reinforcement precludes the use of EM equipment and severely limits the effectiveness of GPR. As a result, the geophysical investigation in this area could not eliminate the possibility of a UST beneath the steel reinforced concrete sidewalk.

A table summarizing the characteristics of known and suspect USTs at the Site is presented below. Figure 3 includes depictions of the known and suspect USTs.

Location	Tank Size (gallons)	Tank Content	Other
Known USTs			
4747 N. 11th Street	1,000	Heating Oil	Located beneath a large concrete slab with an apparent fill port on the eastern end of this parcel.
800 W. Wyoming Ave.	2,000	Gasoline	Located in a grassy area within an underground block vault on the southern end of this parcel (immediately north of driveway).
800 W. Wyoming Ave.	1,000	Gasoline	Located in a grassy area within an underground block vault adjacent to and immediately north of the 2,000 gallon UST on the southern portion of this parcel.
Suspect USTs			
800 W. Wyoming Ave.	1,000	Gasoline (possibly leaded)	Located beneath a former row house basement floor on the northeastern portion of this parcel. Depth of tank may preclude it from detection via geophysics. 1971 city permit indicates leakage and proposal to inert.
800 W. Wyoming Ave.	1,000	Gasoline (possibly leaded)	Located beneath a former row house basement floor on the northeastern portion of this parcel. Depth of tank may preclude it from detection via geophysics. 1971 city

			permit indicates leakage and proposal to inert.
800 W. Wyoming Ave.	1,000	Gasoline (possibly leaded)	Located beneath a former row house basement floor on the northeastern portion of this parcel. Depth of tank may preclude it from detection via geophysics. 1971 city permit indicates leakage and proposal to inert.
922 W. Courtland St.	1,550	Gasoline (possibly leaded)	Apparent fill port along sidewalk within doorway of medical office. Overlying concrete is steel-reinforced, which could interfere with tank detection via geophysics.

7.2.2 Subsurface Soil Investigation – April 1 & 2, 2015

On April 1 and 2, 2015, Langan completed subsurface investigation and sampling activities at the Site. Langan personnel observed test pit excavations at 31 locations across the Site, completed as part of EEI's geotechnical investigation and/or Langan's environmental investigation. EEI's contractor James D. Morrissey, Inc. (Morrissey) excavated each test pit. Soil samples for environmental lab analyses were collected from 9 of the 31 test pits (L-TP-1 through L-TP-9) based on their location within or adjacent to an identified REC. Test pit locations are depicted in Figure 3. It should be noted that no test pits were advanced within the vicinity of the suspect UST at the 922 West Courtland Street property because this area was surrounded by sidewalk, road or building and buried utilities at the time of the investigation.

Test pits were excavated using a track-mounted Komatsu E-210 bucket excavator operated by an employee of Morrissey, contracted by EEI for their geotechnical investigation. Test pits were advanced to a point of refusal or a depth of approximately 10 feet below ground surface (bgs). Langan test pits ranged in final depth from 9 to 12 feet bgs. All test pits were backfilled with their excavated material.

Soils were continuously logged and screened for volatile organic vapors using a calibrated Photoionization Detector (PID). Elevated PID readings, odors and material discoloration were only noted in one of the test pits, L-TP-8, as discussed below. All soil samples were collected directly into laboratory-supplied bottleware and were

immediately labeled and placed into an iced cooler. Soil samples targeted for Volatile Organic Compound (VOC) analysis were collected using 5-gram En-Core® samplers. Samples were submitted to a PA-certified laboratory (TestAmerica Laboratories) under chain-of-custody protocol. Photographs were taken of the test pits and excavated materials. Test pit logs containing details of soil lithology, PID readings, and sample collection information are included as Appendix K; note that test pit logs were prepared only for the test pits of interest from which samples were collected (L-TP-1 through L-TP-9). The laboratory analytical data reports for the 17 soil samples are included as Appendix L. Soil sampling methodology is discussed below.

Test pits L-TP-1, L-TP-6, and L-TP-7 were excavated within the three largest areas of the site that were previously remediated by EPA (Areas 1, 3 and 6, respectively) to address REC 1. Three discrete soil samples were collected at varying depths from each of these test pits to establish a vertical profile of lead and arsenic concentrations in soils. As the top foot of soil at these locations was excavated and replaced with clean fill circa 2000/2001, Langan collected soil samples from depth intervals beneath the clean fill of 1.5 to 2 feet bgs, 5 to 5.5 feet bgs, and 8 to 9.5 feet bgs. The samples from these test pits were analyzed for lead and arsenic by US EPA Method SW846 6010C on a standard laboratory turnaround time. Sand, silt and gravel fill material with building demolition debris, including brick, boulders, scrap metal, wood, concrete and glass, was encountered in all three of these test pits. Gray ash/cinder fill with gravel and fragments of wood and glass was encountered beneath building foundation slabs underlying the demolition fill material in each of these test pits. Four of the nine samples collected from these test pits consisted of ash/cinder fill, and the balance of the samples consisted of sandy fill with building demolition debris. A more detailed narrative description of the material encountered in these test pits is included with the test pit logs in Appendix K.

Additionally, Langan collected discrete samples from a test pit (L-TP-3) that was excavated in an area not associated with any specifically identified RECs. These samples were collected to investigate conditions of placed urban fill material that exists across the Site, as discussed in REC 1. One sample was collected from the ash/cinder fill at 8.5 to 9 feet bgs and the second sample was collected from overlying urban fill containing demolition rubble at 4 to 4.5 feet bgs, as further described in Appendix K. Both samples were submitted for laboratory analysis of full Target

Compound List/Target Analyte List (TCL/TAL) parameters, including Volatile Organic Compounds (VOCs) by EPA Method SW846 8260C, Semi-Volatile Organic Compounds (SVOCs) by EPA Method SW846 8270D, pesticides by EPA Method SW846 8081B, Polychlorinated Biphenyls (PCBs) by EPA Method SW846 8082A and metals by EPA Methods SW846 6010C, 7471A and 9021B on a standard laboratory turnaround time.

Test pits L-TP-4, L-TP-5 and L-TP-8 were excavated adjacent to known or suspect onsite USTs to address RECs 2 and 3. L-TP-4 and L-TP-5 were excavated on the 800 West Wyoming Avenue property (REC 2) immediately west of known USTs that remain in place (L-TP-4) and suspect USTs that potentially remain in place (L-TP-5). Discrete samples were collected from 8 to 9 feet bgs from these test pits, which is near the expected depth of the tank inverts. These soil samples were analyzed for PADEP leaded gasoline parameters, including select VOCs by EPA Method SW846 8260C and lead by EPA Method SW846 6010C. Sand, silt and gravel fill with building demolition rubble, including large slabs of concrete, boulders, brick, wood and scrap metal pipe, underlain by ash/cinder fill was encountered in both L-TP-4 and L-TP-5 test pits.

Test pit L-TP-8 was excavated approximately two feet west of the known UST that remains in place at the 4747 N. 11th Street property (REC 3). A cut-off fill or vent pipe was encountered at approximately 1.5 feet bgs along the eastern sidewall of L-TP-8. A PID reading of 0.5 parts per million (ppm) was detected within the opening of the cut-off tank-related pipe. No odors or discoloration were encountered immediately surrounding the pipe.

Gray-discolored greenish-brown, slightly moist, silty clay with petroleum-like odors was encountered in L-TP-8 from 3 to 9 feet bgs and was underlain by mottled tan and orange clay with no discoloration or odors to 10 feet bgs (end of test pit), as detailed further in Appendix K. The maximum PID reading detected was 36.2 ppm at approximately 3 feet bgs. Two discrete samples were collected from L-TP-8 for PADEP No. 2 fuel oil parameters, including select VOCs by EPA Method SW846 8260C. One sample was collected from visually impacted material at a depth of 3 to 3.5 feet bgs, and a second sample was collected from 8.5 to 9 feet bgs at the bottom extent of visually impacted material. The western portion of L-TP-8 (away from the

tank) appeared to be non-discolored orange-brown clayey silt. Based on these observations, it appears that the heating oil release is localized and does not appear to extend beyond approximately 10 feet vertically or westward.

Test pits L-TP-2 and L-TP-9 were excavated along the property boundary at the nearest onsite location to offsite RECs 5 and 6. L-TP-2 was excavated along the northern property boundary across Loudon Street from a vacant pizza shop (Ed's Pizza House) that used to operate as a curbside gas station and has a history of leaking tanks (REC 5). Land along the northern property boundary in this area is elevated approximately four feet above Loudon Street level; therefore, one discrete sample was collected from a depth of 11.5 to 12 feet bgs, which corresponds to the expected offsite tank invert. This sample was analyzed for PADEP leaded gasoline parameters, including select VOCs by EPA Method SW846 8260C and lead by EPA Method SW846 6010C.

L-TP-9 was excavated along the western property boundary across N. 11th Street from an auto repair shop along Marvine Street that has or had tanks (REC 6). One discrete sample was collected from 7.5 to 8 feet bgs, the expected depth interval near the bottom depth of the offsite tank, and was also analyzed for PADEP leaded gasoline parameters, including select VOCs by EPA Method SW846 8260C and lead by EPA Method SW846 6010C.

Sandy fill with some building demolition debris (brick, boulders, wood, fabric and plastic) was encountered in both L-TP-2 and L-TP-9, underlain by moist, clayey sand and silt or clay material. Ash/cinder fill was not encountered in either of these peripheral test pits, which is consistent with historic fill location maps.

Soil Analytical Results – April 2015

Soil analytical results were compared to the most recent PADEP Statewide Health Standards (last updated in August 2016, with revisions in March 2018), specifically the Act 2 Residential and Non-Residential Direct Contact Medium Specific Concentrations (MSCs), and the Soil-to-Groundwater MSC (higher of the Generic or 100xGW PADEP Act 2 Soil to Groundwater MSCs) for a Residential Used Aquifer (RUA) with Total Dissolved Solids (TDS) less than 2,500 mg/l. Note that the three surface soil samples collected from 1 to 1.5 feet bgs (above 2 feet bgs) from L-TP-1, L-TP-6 and L-TP-7 (Table 1) were compared to the PADEP Non-Residential Surface Soil MSC, and all

other soil samples (collected below 2 feet bgs) were compared to the PADEP Non-Residential Subsurface Soil MSC. Analytical results were also compared to PADEP Clean Fill and Regulated Fill Concentration Limits, in accordance with the January 2020 PA Management of Fill Policy, for future construction planning purposes. Results of the vertical profile samples collected from L-TP-1, L-TP-6 and L-TP-7 for lead and arsenic within three of the EPA remediated areas are presented in Table 1. Results of the tank-related samples collected from test pits L-TP-4, L-TP-5, L-TP-8 and L-TP-9 are presented in Table 2. Results of the fill characterization samples collected from L-TP-3 are presented in Table 3. Copies of the analytical laboratory reports are presented as Appendix L.

Vertical Profile Samples at EPA Remediated Areas (REC-1)

The only arsenic concentrations detected above any of the applicable soil MSCs or fill limits were detected in the deep soil samples (8.5 to 9.5 feet bgs) at both L-TP-6 and L-TP-7 locations. The arsenic concentrations in these two deeper samples (14.5 mg/kg and 16 mg/kg) slightly exceed the PADEP Residential Direct Contact MSC and the PADEP Clean Fill Concentration Limit, both of which are 12 mg/kg (see Table 1). However, these concentrations are below the Non-Residential Direct Contact MSC, the Soil-to-Groundwater MSC and the Regulated Fill Concentration Limit for arsenic. Analytical results for the intermediate depth (5 to 5.5 feet bgs) and shallow depth (1.5 to 2 feet bgs) soil samples from both of these locations are below 12 mg/kg of arsenic.

Lead concentrations from all three depth intervals at both the L-TP-1 and L-TP-6 locations are below applicable PADEP Soil MSCs and Clean Fill limits. However, all three samples collected from L-TP-7 have lead detections above the Residential Direct Contact MSC of 500 mg/kg and above the Soil-to-Groundwater MSC, Clean Fill Concentration Limit and Regulated Fill Concentration Limit of 450 mg/kg. Lead concentrations at the L-TP-7 location increased with depth from 679 mg/kg (1.5 to 2 feet bgs) to 2,180 mg/kg (9 to 9.5 feet bgs). The encountered fill material in test pit L-TP-7 (demolition debris underlain by ash/cinder fill) visibly resembled most of the fill that was encountered at other test pit locations.

Based on current Site redevelopment concept plans, the L-TP-6 location will be developed as a paved parking lot (e.g. an impermeable surface and cap). The L-TP-7 location is proposed to be developed with a storm water management feature, specifically a lined, non-infiltrating basin surrounded by landscaped areas.

Tank-Related Samples for Onsite and Offsite USTs

Samples collected from L-TP-2, L-TP-4, L-TP-5 and L-TP-9 were analyzed for PADEP leaded gasoline parameters, and soil samples collected from L-TP-8 were analyzed for PADEP Number 2 fuel oil parameters. VOCs were not detected above laboratory Method Detection Limits (MDLs) in samples collected from L-TP-2, L-TP-4, L-TP-5 and L-TP-9; these are all test pits excavated to investigate soils that surround former or existing onsite (L-TP-4 and L-TP-5) and offsite (L-TP-2 and L-TP-9) gasoline USTs. Lead levels in samples collected from the gasoline tank test pits ranged from 6.3 mg/kg to 134 mg/kg, all of which are below applicable criteria.

VOCs were detected in samples collected from L-TP-8, which was excavated to investigate the existing heating oil UST on the northwestern portion of the Site. These samples were collected from field-evident impacted material that was discolored and exhibited petroleum odors. All VOC concentrations are below their respective PADEP Soil MSCs and Clean Fill limits (see Table 2). Contaminant concentrations are generally one to two orders of magnitude higher in the deeper soil sample (8.5 to 9 feet bgs) than the shallower sample (3 to 3.5 feet bgs); although low levels of benzene and naphthalene were detected in the shallower sample and not the deeper sample. Although a release from this tank has apparently occurred, analytical results of soil samples collected at locations biased to field-observed impacts do not indicate any constituents of concern were found at concentrations above the Pennsylvania State-Wide Health Soil MSCs.

Fill Characterization Samples for Demolition Fill and Ash Fill

With the exception of a low-level detection of chloroform, a common laboratory artifact, in the soil sample collected from 8.5 to 9 feet bgs at the L-TP-3 location, no VOCs were detected at concentrations above laboratory MDLs in ether sample of the fill collected from this test pit. The chloroform concentration (0.0012 J mg/kg) is orders of magnitude below the most stringent applicable PADEP Soil MSC or Fill criteria (2.4 mg/kg). Also, no pesticide compounds or PCBs were detected at concentrations above laboratory MDLs in either fill sample. Polycyclic Aromatic Hydrocarbons (PAHs), which are a class of SVOCs, were detected at similar concentrations in both fill samples. None of the reported PAH concentrations are above any of the applicable PADEP Soil MSCs or Fill criteria (see Table 3). Of the

Target Analyte List (TAL) metals analyzed, only vanadium was detected above a PADEP MSC value or fill limit. Vanadium was detected in both samples at concentrations of 33.1 mg/kg (4-4.5 ft bgs) and 21.3 mg/kg (8.5-9 ft bgs), which exceed the Residential Direct Contact MSC and the PA Clean Fill Concentration Limits, both of which are 15 mg/kg. The vanadium concentrations do not exceed the Non-Residential Direct Contact MSC, Soil-to-Groundwater MSC, or Regulated Fill Concentration Limit. Other metals were detected above laboratory MDLs in both fill samples but not at concentrations above the applicable PADEP criteria, including lead and arsenic (see Table 3).

Based on current Site redevelopment concept plans, the L-TP-3 location will be covered by a paved parking lot (e.g. an impermeable surface and cap).

8.0 QUALITY ASSURANCE/QUALITY CONTROL

The following sections outline the field and laboratory quality assurance/quality control (QA/QC) measures that were incorporated into the Phase II soil investigation completed by Langan in spring 2015.

Equipment Decontamination

Sampling equipment was decontaminated prior to sampling and between sampling intervals and investigation locations to prevent cross-contamination. Sampling equipment, which included a stainless steel trowel, was decontaminated using a mixture of non-phosphate detergent and tap water followed by a rinse using deionized water. The excavated soil from each test pit was returned to the test pit from which it was excavated after soil characterization and sampling.

Equipment Calibration

The Photoionization Detector (PID) was calibrated at the beginning of each field day in accordance with the manufacturer's specifications. The PID was zero-calibrated using fresh air (atmosphere) away from potential emissions containing VOCs (e.g. vehicle or equipment exhaust). The PID was then span-calibrated using a Tedlar bag filled with 100 parts per million (ppm) isobutylene gas. The PID was re-calibrated if the reading after the zero or span calibrations were ±2.0 ppm of 0.0 ppm or 100.0 ppm, respectively. The PID was re-calibrated during the day if background readings appeared erroneous.

Sample Handling and Preservation

Samples were collected directly into laboratory-provided, new and certified clean bottleware and labeled with sample identification information, including a unique sample name, the date and time of collection, the requested laboratory analysis, the project name, and the client name. Following collection, the soil samples were immediately transferred to and preserved in a laboratory-provided cooler that was maintained at an internal temperature of ±4°C. Soil VOC samples were collected directly into three laboratory supplied 5-gram EnCore™ samplers in accordance with EPA Method 5035. The EnCore™ sampling devices were dedicated per sample. Soil samples for all other parameters were collected directly into laboratory-supplied, unpreserved, clear glass jars.

Laboratory Quality Assurance/Quality Control

The laboratory performed QA/QC analyses, including matrix spikes and matrix spike duplicates, surrogate spikes, method blanks and QA/QC checks, such as GC/MS instrument tuning and mass calibration. Laboratory deliverable check lists, chronicles and non-conformance summaries are presented in the analytical laboratory reports laboratory reports presented as Appendix L.

Documentation

Chain-of-custody protocol was maintained throughout the sampling program for all fixed based laboratory samples. Chain-of-custody forms were originated in the field and accompanied all samples from the field to the laboratory. The chains-of-custody also documented the specific parameter analytical requirements for each sample. Copies of chain-of-custody forms are included with the laboratory data packages provided as Appendix L.

9.0 HEALTH AND SAFETY PLAN

In accordance with OSHA Regulations CFR 1910.120, Langan prepared a Health and Safety Plan specific to the Site dated March 30, 2015 before the RI field activities were completed. A copy of the Health and Safety Plan is included as Appendix M. The Health and Safety Plan included descriptions of the specific RECs identified in the Phase I ESA as well as the specific tasks planned to investigate each REC. The HASP identified the appropriate procedures to be followed and the potential chemical and physical hazards associated with each task, and the roles and

duties of various Site personnel involved in the investigation activities. A hard copy of the Health and Safety Plan was available onsite during all field activities and was reviewed and signed by Site workers prior to the onset of Site work.

Onsite air monitoring was utilized during the field work as the basis for determination of levels of required respiratory protective equipment, if any. Workers donned Level D personal protection (hard hat, steel toe shoes, high-visibility safety vests, hearing protection, safety glasses) and conditions did not necessitate an upgrade to Level C protection during the course of the fieldwork.

10.0 MUNICIPAL AND PUBLIC NOTICIFICATION

On behalf of LWA/TGG, Langan submitted a Notice of Intent to Remediate (NIR) to the PADEP Southeast Regional Office (SERO) for the Logan Redevelopment Area via e-mail on April 1, 2020. In accordance with PADEP instruction, the City of Philadelphia, Department of Public Health was notified of LWA/TGG's submission of the NIR by letter dated March 26, 2020 that was sent via FedEx (Tracking No. 770119416669) on March 27, 2020. FedEx delivery confirmation was received on March 30, 2020. The public was notified of the NIR submission by publication of a notice in the April 3, 2020 issue of the Philadelphia Tribune newspaper. Copies of the NIR, the letter that was sent to the city with the FedEx delivery confirmation, and proof of publication of the newspaper notice are included as Appendix N.

The NIR for soils was submitted for proposed attainment of the Special Industrial Area Standard for inorganic contaminants (lead, arsenic and vanadium) that have been detected in soil at concentrations above the residential statewide health standards. In accordance with PADEP Land Recycling Program guidance for the SIA Standard, the city and the public are being provided an opportunity for participation and given a 30-day comment period (to end May 4, 2020). No public comments have been received to date. If comments are received and/or if the city requests to be involved in the development of the remediation and reuse plan for the site (i.e., a Public Involvement Plan), these documents will be referenced and included in the Baseline Environmental Report (see Section 11.6).

Per PADEP guidelines regarding the SIA remedial process, municipal and public notifications are required for submission of an NIR to the Department, but they are not required for submission of a Baseline Remedial Investigation Work Plan or a Baseline Environmental Report.

11.0 BASELINE RI WORKPLAN

11.1 Purpose and Objective

This Baseline RI Work Plan was prepared in accordance with Pennsylvania's Land Recycling Program Final Draft Technical Guidance Manual (January 2019) and the conditions pertaining to SIA designated sites under Sections 305 and 502 of Act 2. The Baseline RI is substantially complete and relies heavily on the extensive soil sampling completed in the late 1990s, the surface soil remediation completed under the direction of USEPA in 2001, and the focused Phase II ESA completed in 2015, as discussed in Section 7.0. These historical investigations/remediation and related data sufficiently characterize environmental conditions in accordance with requirements for the SIA-designated Site, except for REC-7 (heating oil UST). No further investigation is warranted as environmental conditions have been sufficiently characterized to be documented in a final Baseline Environmental Report which is further discussed in Section 11.2 below.

For REC-7 (heating oil UST) Sections 11.3 through 11.6 describe the proposed investigation activities under this Baseline RI Work Plan.

11.2 Immediate, Direct, or Imminent Threats and Potential Migration Pathways

The findings of the Phase I and Phase II ESAs indicate that at least three USTs are located on the Site, and up to five additional USTs may be located on the Site; however, subsurface soil sampling in the vicinity of the known and suspect tanks does not indicate the presence of petroleum contaminants at concentrations above PADEP Statewide Health Standards or Vapor Intrusion Screening Values for Soil. The contents of the USTs, if any, are unknown at this time. In accordance with SIA regulations, the tanks and their contents should be removed or rendered safe in accordance with PADEP Storage Tank Program regulations as part of SIA remediation at the Site.

Additionally, remediation related to the known and potential contaminants associated with the imported fill that was historically placed throughout the Site will be completed in concert with the redevelopment, which will involve Site-wide capping by a combination of building foundation slabs, asphalt and concrete paving, and 2-foot clean soil caps in landscaped areas. The capping will eliminate the pathway for chronic exposure to future Site occupants whereby the physical barriers will prevent ingestion, direct contact, and inhalation of the contaminants associated with the fill. An Environmental Covenant will be recorded in

accordance with UECA as an institutional control to notify the public of the existence of remnant soil impacts at the Site and to serve as a mechanism for ensuring preservation of the cap where needed.

As reported in the geotechnical investigation completed by the USACE in June 2000 at the neighboring Feltonville section, groundwater was encountered in only a few borings, and depths-to-groundwater ranged from 21 to 42 feet bgs. Groundwater was not encountered in the test pits excavated to depths of approximately 10 to 12 feet bgs in 2015. Based on the soil analytical results from the 2015 investigation, the only exceedance of a PADEP Soil-to-Groundwater MSC was lead at the L-TP-7 location (all three depths). The lead exceedances along the southeastern border of the Site are believed to represent a low risk for impacting groundwater because lead is considered an immobile analyte that strongly adsorbs to soil and is not likely to impact groundwater[1]. Additionally, the Site and surrounding properties are located in an urban area (North Philadelphia) that obtains potable water from the Philadelphia Water Department (PWD). PWD derives their water entirely from surface water sources, namely from the Delaware River (57% supply) and the Schuylkill River (43% supply), and groundwater is not used as a source of potable water in Philadelphia. Furthermore, the Site redevelopment plan includes construction of impervious caps (e.g. buildings, asphalt paving, concrete paving) over the majority of the Site, and the proposed storm basin will be lined and non-infiltrating, which will reduce the potential for rain infiltration and potential transfer of inorganic contaminants to groundwater. Based on the expected depth-to-groundwater, soil analytical results, groundwater (non-) use, and the components of the Site redevelopment plan, groundwater investigation is not warranted or planned as part of the Baseline RI Work Plan.

None of the historic or more recent soil analytical results indicate the presence of volatile organic compounds at concentrations above the most stringent PADEP Soil MSCs or the PADEP Vapor Intrusion Screening Values for Soil. The only class of contaminants detected above the most stringent MSCs are inorganic analytes, which do not pose vapor intrusion concerns. Therefore, the potential vapor intrusion exposure pathway is not a realistic concern and does not warrant further investigation or mitigation.

[1] New Jersey Department of Environmental Protection, Site Remediation Program, "Guidance for the Evaluation of Immobile Chemicals for the Impact to Ground Water Pathway," June 2, 2008.

Site conditions do not pose risks to water bodies, wildlife or ecosystems. As discussed in Section 3.5, ecological receptors, including surface waters, wetlands, threatened or endangered species, and habitats for sensitive species, are not present on or adjacent to the Site based on review of state and federal mapping databases and Site inspection. Therefore, ecological exposure pathway is not complete and does not warrant further investigation or mitigation.

11.3 Geophysical Investigation – REC- 7

A geophysical investigation will be completed to determine whether the 500-gallon heating oil UST reportedly installed in 1933 at the property located at 4767 North 7th Street (REC-7) remains present onsite. Because a figure was not included in the historic permit application, the geophysical survey will be completed for the entire former individual parcel (approximately 18 feet by 80 feet) located at the southeastern corner of West Loudon Street and North 7th Street. Techniques employed during the geophysical survey will included collection and interpretation of data from a: Ground Penetrating Radar (GPR) survey, an electromagnetic metal detector survey, and a magnetometer survey. Any anomalies detected as part of the geophysical investigation will be measured, marked using spray paint or flags in the field, and photographed.

If investigation reveals more definitive evidence of a former UST, the tank will be closed in accordance with the state and local requirements for unregulated USTs during the remediation of the SIA Site, as will the other on-Site known and suspected unregulated USTs.

11.4 Data Reduction/Interpretation

The data and results generated during the previously completed Baseline RI activities have been tabulated (Tables 1 through 3) and summarized onto appropriate figures (Figure 3). As discussed in detail in Section 7.2.2, the laboratory analytical results were compared to PADEP Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018) and fill concentration limits (PA Management of Fill Policy, effective January 2020). Exceedances of these standards are illustrated in the summary tables and on Figure 3. Based on the data, the site conceptual model, and the proposed Site redevelopment plan, an updated evaluation of the pathways/receptors and fate and transport mechanisms will be performed and reported in the Baseline Environmental Report. Given the proposed commercial/industrial redevelopment of the property, an

evaluation of site specific standards through pathway elimination via engineering and/or institutional controls as a product of the Site redevelopment will be considered.

11.5 Site Conceptual Model

All of the pertinent information generated during the past and proposed site characterization activities will be used to present a site conceptual model. The site conceptual model will describe the physical site conditions, the nature and extent of site-related constituents in soil and groundwater and potential exposure pathways to receptors, as appropriate.

11.6 Baseline Environmental Report Preparation

Upon approval of this Work Plan and completion of the proposed focused Remedial Investigation activities, a Baseline Environmental Report (BER) will be prepared and submitted to PADEP. The Baseline Environmental Report will include a description of investigation activities similar to the discussion and data summary contained herein for the abundant work previously completed and will supplement with the results of the proposed geophysical investigation. The Baseline Environmental Report will follow regulations and guidance provided in the PADEP Technical Guidance Manual, January 2019 (Document No. 261-0300-101) and 25 Pa. Code Section 250.503 (d). Baseline Site conditions will be described based upon the findings of historic geotechnical and environmental reports, the Phase I ESA, the focused Phase II ESA completed for RECs 1 through 6 (as identified in the Phase I ESA), and the proposed geophysical investigation for REC 7. The report will include a description of the site conceptual model, descriptions of the source, nature, concentrations, locations and extents of identified contamination, exposure pathway assessment, vapor intrusion assessment, ecological evaluation, summary tables of the soil data as compared to PADEP MSCs, figures depicting the locations of areas investigated, soil samples, and results, test pit logs, geophysical reports, and laboratory analytical reports.

Potential remediation concepts and a technical rationale will be described in context of the conceptual site redevelopment plan. The report will also include the conceptual plan and approach for cleanup of the Site, soil and material management requirements during construction and post remediation care needs, which will serve as the basis for the SIA Consent Order and Agreement (CO&A).

12.0 REFERENCES

The following references were reviewed as part of this Baseline RI Work Plan:

1. Environmental Data Resources, Inc., Inquiry Number: 4175973.9, January 8, 2015. Aerial Photo Decade Package.
2. Environmental Data Resources, Inc., Inquiry Number: 4175973.5, January 8, 2015. City Directory Abstract.
3. Environmental Data Resources, Inc., Inquiry Number: 4175973.4, January 8, 2015. Historical Topographic Map Report.
4. Environmental Data Resources, Inc., Inquiry Number: 4175973.2s, January 8, 2015. Radius Map with GeoCheck.
5. Environmental Data Resources, Inc., Inquiry Number: 4175973.3, January 8, 2015. Sanborn Map Report.
6. City of Philadelphia, Zoning Archive Online, http://www.phila.gov/zoningarchive/.
7. New Jersey Department of Environmental Protection, Site Remediation Program, Guidance for the Evaluation of Immobile Chemicals for the Impact to Ground Water Pathway, June 2, 2008.
8. Pennsylvania Department of Environmental Protection, Land Recycling Program Technical Guidance Manual, January 19, 2019.
9. Pennsylvania Code, Title 25, Chapter 250.
10. PNDI Environmental Review Tool, http://www.gis.dcnr.state.pa.us/hgis-er/login.aspx.
11. US Fish & Wildlife Service, National Wetlands Inventory, http://www.fws.gov/wetlands/Data/Mapper.html.
12. US Department of Homeland Security, Federal Emergency Management Agency, Flood Map Service Center, https://msc.fema.gov/portal.
13. U.S. Department of the Treasury, Community Development Financial Institutions (CDFI) Fund, Qualified Opportunity Zone GIS Data Layer, Census Tract 2010.
14. Southeastern Pennsylvania Environmental Assistance Program, Logan (Feltonville) Sinking Homes Study, Philadelphia, PA, prepared by the U.S. Army Corps of Engineers Philadelphia District for the Philadelphia Federal Congressional Delegation, July 2000.
15. Response Action Plan for Logan Section of Philadelphia, prepared by Urban Engineers, Inc. of Philadelphia, PA for Risk Management Division, City of Philadelphia, PA, November 2000 (Revised December 11, 2000).
16. Geotechnical Study for Logan Triangle Redevelopment, prepared by Urban Engineers, Inc. of Philadelphia, PA for The Reinvestment Fund, November 2004.
17. Phase I Environmental Site Assessment, Logan Redevelopment Area, prepared by Langan Engineering & Environmental Services, Inc. for The Goldenberg Group, Inc., March 2015.

18. Limited Phase II Site Investigation, Logan Pointe, prepared by Langan Engineering & Environmental Services, Inc. for The Goldenberg Group, Inc., May 2015.
19. Preliminary Report of Due Diligence Geotechnical Investigation, Logan Triangle, prepared by Earth Engineering Incorporated for Logan West Associates, L.P., June 2015.



Legend

- Qualified Opportunity Zone
- Site Boundary

Notes:
1. Nearmap Aerial Photography is provided by Nearmap.com, dated 10/14/2019.
2. Qaulified Opportunity Zone layer provided by the U.S. Department of the Treasury, CDFI Fund, Census Tract 2010.

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Project

LOGAN POINTE

PHILADELPHIA

PHILADELPHIA COUNTY PENNSYLVANIA

Drawing Title

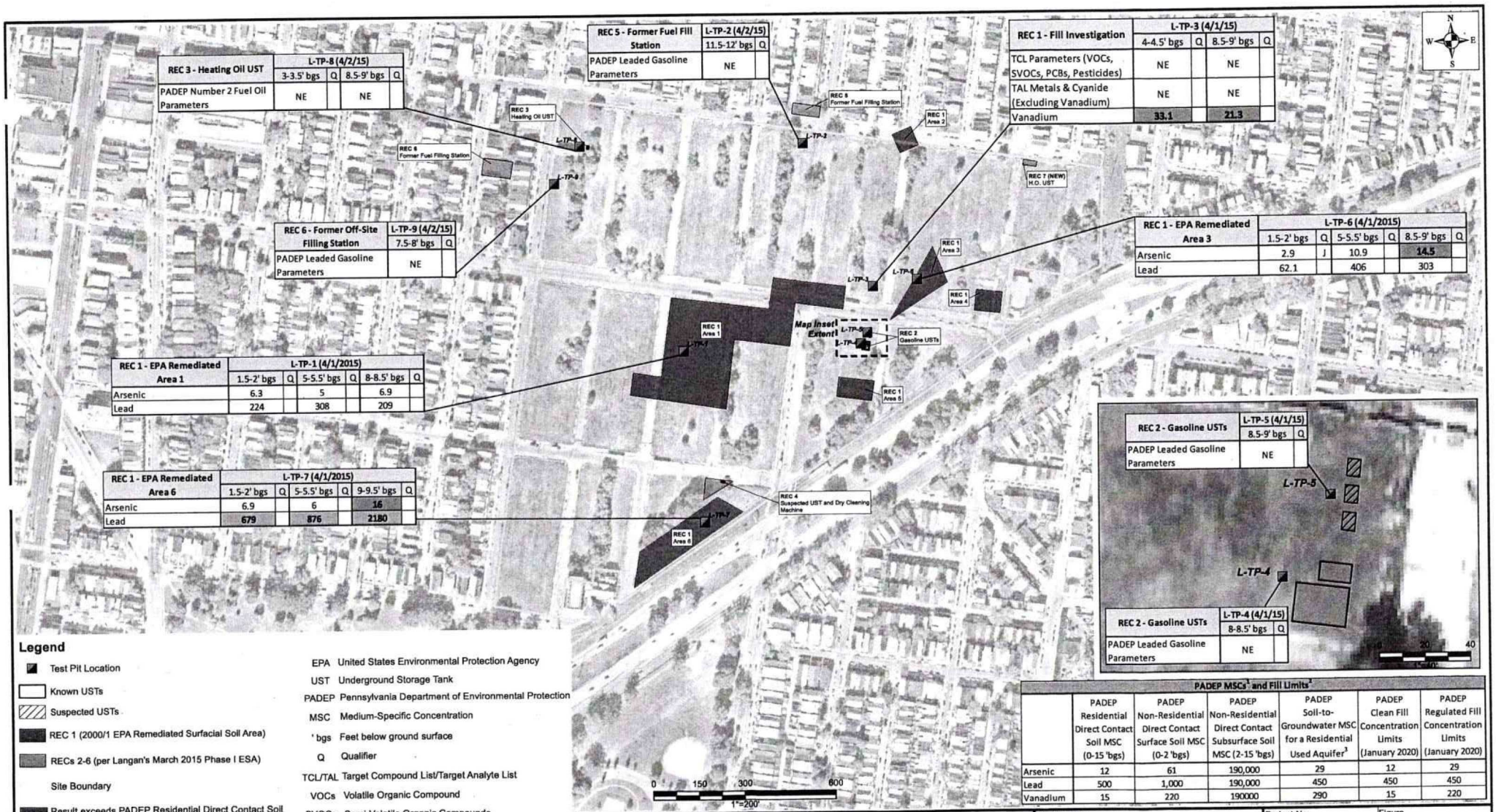
FEDERAL QUALIFIED OPPORTUNITY ZONES

Project No.	220080901
Date	2/21/2020
Scale	1"=200'
Drawn By	HJD
Submission Date	

Figure **2**

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Path: \\langan.com\data\PH\data9\220080901\ArcGIS\ArcMap_Documents\Phase II\Figure 2 - Federal Opportunity Zones_2-21-20.mxd Date: 2/21/2020 User: hdubinsky Time: 1:49:12 PM



Legend

- Test Pit Location
- Known USTs
- Suspected USTs
- REC 1 (2000/1 EPA Remediated Surfacial Soil Area)
- RECs 2-6 (per Langan's March 2015 Phase I ESA)
- Site Boundary
- 11.5 Result exceeds PADEP Residential Direct Contact Soil MSC and PADEP Clean Fill Concentration Limit
- 679 Result exceeds PADEP Residential Direct Contact Soil MSC, Soil-to-Groundwater MSC and both Clean and Regulated Fill Concentration Limits

EPA	United States Environmental Protection Agency
UST	Underground Storage Tank
PADEP	Pennsylvania Department of Environmental Protection
MSC	Medium-Specific Concentration
' bgs	Feet below ground surface
Q	Qualifier
TCL/TAL	Target Compound List/Target Analyte List
VOCs	Volatile Organic Compound
SVOCs	Semi-Volatile Organic Compounds
PCBs	Polychlorinated Biphenyls
NE	No Exceedances of analyzed parameters compared to applicable PADEP Statewide Health Standards and fill limits
J	Lab estimated value. Detection above MDL but below RL

PADEP MSCs[1] and Fill Limits[2]

	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Surface Soil MSC (0-2 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for a Residential Used Aquifer[3]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)
Arsenic	12	61	190,000	29	12	29
Lead	500	1,000	190,000	450	450	450
Vanadium	15	220	190000	290	15	220

Notes:
1. Nearmap Aerial Photography is provided by Nearmap.com, dated 10/14/2019.
2. PADEP MSCs reflect the PA Land Recycling Program (Act 2) cleanup standards presented in 25 Pa. Code Chapter 250 (last updated in August 2016, with revisions in March 2018).
3. Clean and Regulated Fill Concentration Limits determined in accordance with the January 2020 PA Management of Fill policy.
4. The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs for a Residential Used Aquifer with Total Dissolved Solids (TDS) less than 2,500 milligrams per liter (mg/L).

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Drawing Title
REC AND TEST PIT LOCATION MAP WITH SOIL SAMPLE RESULTS

Project No. 220080901
Date 2/6/2020
Scale SEE MAP
Drawn By HJD
Submission Date

Figure 3

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Path: \\langan.com\data\PHL\data9\220080901\ArcGIS\ArcMap_Documents\Phase II\Figure 2 - Test Pit and REC Location Map with Results_1-28-20.mxd Date: 2/6/2020 User: hdubinsky Time: 9:08:36 AM

Table 1
EPA Previously Remediated Areas - April 2015 Soil Sample Analytical Results
Logan Pointe Redevelopment Area
North Philadelphia, Pennsylvania

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Surface Soil MSC (0-2 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Sample ID	L-TP-1_1.5-2				L-TP-1_5-5.5				L-TP-1_8-8.5			
								Lab Sample ID	460-92589-1				460-92589-2				460-92589-3			
								Sampling Date	04/01/2015 08:05:00				04/01/2015 08:10:00				04/01/2015 08:15:00			
								Sample Depth (' bgs)	1.5 - 2				5 - 5.5				8 - 8.5			
								Matrix	Soil				Soil				Soil			
Metals by US EPA Method SW846 6010C								**Unit**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**
Arsenic	7440-38-2	12	61	190,000	29	12	29	mg/kg	6.3		0.81	3.0	5.0		0.85	3.1	6.9		0.89	3.3
Lead	7439-92-1	500	1,000	190,000	450	450	450	mg/kg	224		0.81	2.0	308		0.86	2.1	209		0.90	2.2

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Surface Soil MSC (0-2 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Sample ID	L-TP-6_1.5-2				L-TP-6_5-5.5				L-TP-6_8.5-9			
								Lab Sample ID	460-92589-8				460-92589-9				460-92589-10			
								Sampling Date	04/01/2015 13:25:00				04/01/2015 13:30:00				04/01/2015 13:35:00			
								Sample Depth (' bgs)	1.5 - 2				5 - 5.5				8.5 - 9			
								Matrix	Soil				Soil				Soil			
Metals by US EPA Method SW846 6010C								**Unit**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**
Arsenic	7440-38-2	12	61	190,000	29	12	29	mg/kg	2.9	J	0.84	3.1	10.9		0.95	3.5	**14.5**		1.0	3.8
Lead	7439-92-1	500	1,000	190,000	450	450	450	mg/kg	62.1		0.84	2.0	406		0.95	2.3	303		1.0	2.5

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Surface Soil MSC (0-2 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Sample ID	L-TP-7_1.5-2				L-TP-7_5-5.5				L-TP-7_9-9.5			
								Lab Sample ID	460-92589-13				460-92589-12				460-92589-11			
								Sampling Date	04/01/2015 15:00:00				04/01/2015 14:55:00				04/01/2015 14:50:00			
								Sample Depth (' bgs)	1.5 - 2				5 - 5.5				9 - 9.5			
								Matrix	Soil				Soil				Soil			
Metals by US EPA Method SW846 6010C								**Unit**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**	**Result**	**Q**	**MDL**	**RL**
Arsenic	7440-38-2	12	61	190,000	29	12	29	mg/kg	6.9		0.81	3.0	6.0		0.87	3.2	**16**		0.97	3.5
Lead	7439-92-1	500	1,000	190,000	450	450	450	mg/kg	**679**		0.81	2.0	**876**		0.87	2.1	**2,180**		0.97	2.4

Notes:

14.5 Result exceeds PADEP Residential Direct Contact Soil MSC and PADEP Clean Fill Concentration Limit

679 Result exceeds PADEP Residential Direct Contact Soil MSC, Soil-to-Groundwater MSC and both Clean and Regulated Fill Concentration Limits

PADEP - Pennsylvania Department of Environmental Protection

MSC - Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018)

RUA - Residential Used Aquifer

TDS - Total Dissolved Solids in milligrams per liter (mg/L)

Q - Qualifier

RL - Reporting Limit

MDL - Method Detection Limit

mg/kg - milligrams per kiligram

J - Laboratory estimated value due to detection above MDL but below RL.

' bgs - feet below ground surface

[1] - The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs.

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Table 2
April 2015 Analytical Results for Tank-Related Investigation Soil Samples
Logan Pointe Redevelopment Area
North Philadelphia, Pennsylvania

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Sample ID	L-TP-2_11.5-12				L-TP-4_8-8.5				L-TP-5_8.5-9				L-TP-8_3-3.5				L-TP-8_8.5-9				L-TP-9_7.5-8			
							Lab Sample ID	460-92680-1				460-92589-6				460-92589-7				460-92680-2				460-92680-3				460-92680-4			
							Sampling Date	04/02/2015 09:15:00				04/01/2015 11:20:00				04/01/2015 11:48:00				4/2/2015 10:25				04/02/2015 11:10:00				04/02/2015 12:00:00			
							Sample Depth (' bgs)	11.5 - 12				8 - 8.5				8.5 - 9				3 - 3.5				8.5 - 9				7.5 - 8			
							Matrix	Soil				Soil				Soil				Soil				Soil				Soil			
							Dilution Factor	1				1				1				1				50				1			
Volatile Organic Compounds (VOCs) by US EPA Method SW846 8260C							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
1,2,4-Trimethylbenzene	95-63-6	130	640	8.4	8.4	35	mg/kg	ND		0.00030	0.00090	ND		0.00036	0.0011	ND		0.00035	0.0010	0.12		0.00040	0.0012	3.6	*	0.023	0.099	ND		0.00039	0.0011
1,2-Dibromoethane (EDB)	106-93-4	0.74	4.3	0.005	0.0012	0.0012	mg/kg	ND		0.00011	0.00090	ND		0.00013	0.0011	ND		0.00012	0.0010	NR		-	-	NR		-	-	ND		0.00014	0.0011
1,2-Dichloroethane	107-06-2	17	98	0.5	0.1	0.1	mg/kg	ND		0.000099	0.00090	ND		0.00012	0.0011	ND		0.00011	0.0010	NR		-	-	NR		-	-	ND		0.00013	0.0011
1,3,5-Trimethylbenzene	108-67-8	2,200	10,000	74	74	210	mg/kg	ND		0.00012	0.00090	ND		0.00014	0.0011	ND		0.00013	0.0010	0.07		0.00015	0.0012	2.3		0.025	0.099	ND		0.00015	0.0011
Benzene	71-43-2	57	330	0.5	0.13	0.13	mg/kg	ND		0.00018	0.00090	ND		0.00021	0.0011	ND		0.0002	0.0010	0.0062		0.00024	0.0012	ND		0.019	0.099	ND		0.00023	0.0011
Cumene	98-82-8	7,700	10,000	600	600	2,500	mg/kg	ND		0.00015	0.00090	ND		0.00018	0.0011	ND		0.00017	0.0010	0.014		0.00020	0.0012	0.57		0.032	0.099	ND		0.00019	0.0011
Ethylbenzene	100-41-4	180	1,000	70	46	46	mg/kg	ND		0.00016	0.00090	ND		0.00019	0.0011	ND		0.00018	0.0010	0.037		0.00021	0.0012	0.51		0.030	0.099	ND		0.00021	0.0011
Methyl-t-Butyl Ether (MTBE)	1634-04-4	1,700	9,900	2	0.28	0.28	mg/kg	NR		-	-	NR		-	-	NR		-	-	ND		0.00020	0.0012	ND		0.013	0.099	NR		-	-
Naphthalene	91-20-3	160	190,000	25	25	25	mg/kg	ND		0.00011	0.00090	ND		0.00013	0.0011	ND		0.00012	0.0010	0.19		0.00014	0.0012	ND		0.026	0.099	ND		0.00014	0.0011
Toluene	108-88-3	10,000	10,000	100	44	44	mg/kg	ND		0.00017	0.00090	ND		0.00020	0.0011	ND		0.00019	0.0010	ND		0.00022	0.0012	ND		0.025	0.099	ND		0.00022	0.0011
Xylenes, Total	1330-20-7	1,900	9,100	1,000	990	990	mg/kg	ND		0.000099	0.0018	ND		0.00012	0.0021	ND		0.00011	0.0020	NR		-	-	NR		-	-	ND		0.00013	0.0023
Metals by US EPA Method SW846 6010C							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
Lead	7439-92-1	500	190,000	450	450	450	mg/kg	6.3		0.78	0.0019	54.4		0.77	1.9	134		0.73	1.8	NR		-	-	NR		-	-	11.1		0.92	2.2

Notes:

PADEP - Pennsylvania Department of Environmental Protection
MSC - Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018)
RUA - Residential Used Aquifer
TDS - Total Dissolved Solids in milligrams per liter (mg/L)
Q - Qualifier
RL - Reporting Limit
MDL - Method Detection Limit
mg/kg - milligrams per kiligram
ND - Not detected above laboratory MDL
NR - Constituent not analyzed
* - Recovery or Relative Percent Difference (RPD) exceeds control limits
'bgs - feet below ground surface
[1] - The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs.

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Table 3
April 2015 Urban Fill Characterization Samples - VOC Analytical Results
Logan Pointe Redevelopment Area
North Philadelphia, Pennsylvania

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Client ID	L-TP-3_4-4.5				L-TP-3_8.5-9			
							Lab Sample ID	460-92589-5				460-92589-4			
							Sampling Date	4/1/2015 10:15				4/1/2015 10:05			
							Sample Depth ('bgs)	4 - 4.5				8.5 - 9			
							Matrix	Soil				Soil			
							Dilution Factor	1				1			
Volatile Organic Compounds (VOCs) by US EPA Method SW846 8260C							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL
1,1,1-Trichloroethane	71-55-6	10,000	10,000	20	7.2	7.2	mg/kg	ND		0.00039	0.0010	ND		0.00052	0.0014
1,1,2,2-Tetrachloroethane	79-34-5	7.7	44	0.08	0.026	0.13	mg/kg	ND		0.00018	0.0010	ND		0.00023	0.0014
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	10,000	10,000	10,000	10,000	10,000	mg/kg	ND		0.00045	0.0010	ND		0.00060	0.0014
1,1,2-Trichloroethane	79-00-5	4	18	0.5	0.15	0.15	mg/kg	ND		0.00029	0.0010	ND		0.00038	0.0014
1,1-Dichloroethane	75-34-3	280	1,600	3.1	0.75	3.9	mg/kg	ND		0.00035	0.0010	ND		0.00046	0.0014
1,1-Dichloroethene	75-35-4	3,800	10,000	0.7	0.19	0.19	mg/kg	ND		0.00042	0.0010	ND		0.00056	0.0014
1,2,3-Trichlorobenzene	87-61-6	NS	NS	NS	NS	NS	mg/kg	ND		0.00011	0.0010	ND		0.00015	0.0014
1,2,4-Trichlorobenzene	120-82-1	640	10,000	27	27	27	mg/kg	ND		0.00033	0.0010	ND		0.00044	0.0014
1,2,4-Trimethylbenzene	95-63-6	130	640	8.4	8.4	35	mg/kg	NR		-	-	NR		-	-
1,2-Dibromo-3-Chloropropane	96-12-8	0.029	0.43	0.02	0.0092	0.0092	mg/kg	ND		0.00048	0.0010	ND		0.00064	0.0014
1,2-Dibromoethane (EDB)	106-93-4	0.74	4.3	0.005	0.0012	0.0012	mg/kg	NR		-	-	NR		-	-
1,2-Dichlorobenzene	95-50-1	3,800	10,000	60	59	59	mg/kg	ND		0.00014	0.0010	ND		0.00019	0.0014
1,2-Dichloroethane	107-06-2	17	98	0.5	0.1	0.1	mg/kg	ND		0.00011	0.0010	ND		0.00015	0.0014
1,2-Dichloropropane	78-87-5	45	260	0.5	0.11	0.11	mg/kg	ND		0.00018	0.0010	ND		0.00023	0.0014
1,3,5-Trimethylbenzene	108-67-8	2,200	10,000	74	74	210	mg/kg	NR		-	-	NR		-	-
1,3-Dichlorobenzene	541-73-1	10,000	10,000	61	61	61	mg/kg	ND		0.00012	0.0010	ND		0.00016	0.0014
1,4-Dichlorobenzene	106-46-7	40	230	10	10	10	mg/kg	ND		0.00013	0.0010	ND		0.00018	0.0014
1,4-Dioxane	123-91-1	58	330	0.64	0.084	0.42	mg/kg	ND		0.0066	0.021	ND		0.0087	0.027
2-Butanone (MEK)	78-93-3	10,000	10,000	400	76	76	mg/kg	ND		0.00079	0.0052	ND		0.0010	0.0068
2-Hexanone	591-78-6	570	2,800	6.3	1.6	6.4	mg/kg	ND		0.00097	0.0052	ND		0.0013	0.0068
4-Methyl-2-pentanone (MIBK)	108-10-1	10,000	10,000	330	51	140	mg/kg	ND		0.0023	0.0052	ND		0.0030	0.0068
Acetone	67-64-1	10,000	10,000	3,800	430	1,200	mg/kg	ND		0.0011	0.0052	ND		0.0014	0.0068
Benzene	71-43-2	57	330	0.5	0.13	0.13	mg/kg	ND		0.00021	0.0010	ND		0.00027	0.0014
Bromomethane	74-83-9	96	460	1	0.54	0.54	mg/kg	ND		0.00033	0.0010	ND		0.00044	0.0014
Carbon disulfide	75-15-0	10,000	10,000	150	130	530	mg/kg	ND	*	0.00044	0.0010	ND	*	0.00059	0.0014
Carbon tetrachloride	56-23-5	74	430	0.5	0.26	0.26	mg/kg	ND		0.00044	0.0010	ND		0.00059	0.0014
Chlorobenzene	108-90-7	960	4,600	10	6.1	6.1	mg/kg	ND		0.00014	0.0010	ND		0.00019	0.0014
Chlorobromomethane	74-97-5	770	3,600	9	1.6	1.6	mg/kg	ND		0.00018	0.0010	ND		0.00023	0.0014
Chlorodibromomethane	124-48-1	17	95	8	2.5	2.5	mg/kg	ND		0.00015	0.0010	ND		0.00020	0.0014
Chloroethane	75-00-3	6,400	10,000	25	5.4	26	mg/kg	ND		0.00036	0.0010	ND		0.00048	0.0014
Chloroform	67-66-3	19	110	8	2	2	mg/kg	ND		0.00022	0.0010	0.0012	J	0.00029	0.0014
Chloromethane	74-87-3	250	1,400	3	0.38	0.38	mg/kg	ND		0.00039	0.0010	ND		0.00052	0.0014
[illegible]-Dichloroethene	156-59-2	440	10,000	7	1.6	1.6	mg/kg	ND		0.00023	0.0010	ND		0.00030	0.0014
[illegible]-Dichloropropene	542-75-6	110	640	0.73	0.13	0.61	mg/kg	ND		0.00015	0.0010	ND		0.00020	0.0014
Cumene	98-82-8	7,700	10,000	600	600	2,500	mg/kg	NR		-	-	NR		-	-
Cyclohexane	110-82-7	10,000	10,000	1,700	1,700	6,900	mg/kg	ND		0.00047	0.0010	ND		0.00063	0.0014
Dichlorobromomethane	75-27-4	12	69	8	2.7	2.7	mg/kg	ND		0.00039	0.0010	ND		0.00052	0.0014
Dichlorodifluoromethane	75-71-8	1,900	9,100	100	100	100	mg/kg	ND		0.00033	0.0010	ND		0.00044	0.0014
Ethylbenzene	100-41-4	180	1,000	70	46	46	mg/kg	ND		0.00019	0.0010	ND		0.00025	0.0014
Ethylene Dibromide	106-93-4	0.74	4.3	0.005	0.0012	0.0012	mg/kg	ND		0.00012	0.0010	ND		0.00016	0.0014
Isopropylbenzene	98-82-8	7,700	10,000	600	600	2,500	mg/kg	ND		0.00018	0.0010	ND		0.00023	0.0014
Methane, tribromo-	75-25-2	410	2,300	8	3.5	3.5	mg/kg	ND		0.00013	0.0010	ND		0.00018	0.0014
Methyl acetate	79-20-9	10,000	10,000	4,200	780	2,200	mg/kg	ND		0.00093	0.0052	ND		0.0012	0.0068
Methyl tert-butyl ether	1634-04-4	1,700	9,900	2	0.28	0.28	mg/kg	ND		0.00018	0.0010	ND		0.00023	0.0014
Methylcyclohexane	108-87-2	NS	NS	NS	NS	NS	mg/kg	ND		0.00052	0.0010	ND		0.00068	0.0014
Methylene Chloride	75-09-2	1,300	10,000	0.5	0.076	0.076	mg/kg	ND		0.00033	0.0010	ND		0.00044	0.0014
m-Xylene & p-Xylene	N/A	NS	NS	NS	NS	NS	mg/kg	ND		0.00011	0.0010	ND		0.00015	0.0014
Naphthalene	91-20-3	160	190,000	25	25	25	mg/kg	NR		-	-	NR		-	-
o-Xylene	95-47-6	NS	NS	NS	NS	NS	mg/kg	ND		0.00016	0.0010	ND		0.00022	0.0014
Styrene	100-42-5	10,000	10,000	24	24	24	mg/kg	ND		0.00015	0.0010	ND		0.00020	0.0014
Tetrachloroethene	127-18-4	770	3,600	0.5	0.43	0.43	mg/kg	ND		0.00029	0.0010	ND		0.00038	0.0014
Toluene	108-88-3	10,000	10,000	100	44	44	mg/kg	ND		0.00020	0.0010	ND		0.00026	0.0014
trans-1,2-Dichloroethene	156-60-5	1,100	5,500	10	2.3	2.3	mg/kg	ND		0.00040	0.0010	ND		0.00053	0.0014
trans-1,3-Dichloropropene	10061-02-6	NS	NS	NS	NS	NS	mg/kg	ND		0.00010	0.0010	ND		0.00014	0.0014
Trichloroethene	79-01-6	38	180	0.5	0.17	0.17	mg/kg	ND		0.00027	0.0010	ND		0.00035	0.0014
Trichlorofluoromethane	75-69-4	10,000	10,000	200	87	87	mg/kg	ND		0.00035	0.0010	ND		0.00046	0.0014
Vinyl chloride	75-01-4	0.9	280	0.2	0.027	0.027	mg/kg	ND		0.00040	0.0010	ND		0.00053	0.0014
Xylenes, Total	1330-20-7	1,900	9,100	1,000	990	990	mg/kg	NR		-	-	NR		-	-
Total Estimated Conc. (TICs)	N/A	NS	NS	NS	NS	NS	mg/kg	0		-	-	0		-	-

Notes:

PADEP - Pennsylvania Department of Environmental Protection
MSC - Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018)
RUA - Residential Used Aquifer
TDS - Total Dissolved Solids in milligrams per liter (mg/L)
[1] - The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs.
'bgs - feet below ground surface
Q - Qualifier
RL - Reporting Limit
[illegible] - Method Detection Limit
[illegible] - milligrams per kilogram
NS - No PADEP MSC available.
ND - Not detected above laboratory MDL
NR - Constituent not analyzed
* - Recovery or Relative Percent Difference (RPD) exceeds control limits
J - Laboratory estimated value due to detection above MDL but below RL.

Table 3
April 2015 Urban Fill Characterization Samples - SVOC Analytical Results
Logan Pointe Redevelopment Area
North Philadelphia, Pennsylvania

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC (2-15 'bgs)	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Client ID	L-TP-3_4-4.5				L-TP-3_8.5-9			
							Lab Sample ID	460-92589-5				460-92589-4			
							Sampling Date	4/1/2015 10:15				4/1/2015 10:05			
							Sample Depth ('bgs)	4 - 4.5				8.5 - 9			
							Matrix	Soil				Soil			
							Dilution Factor	1				1			
Semi-Volatile Organic Compounds (SVOCs) by US EPA Method SW846 8270D							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL
1,1'-Biphenyl	92-52-4	2,300	190,000	40	40	190	mg/kg	ND		0.034	0.40	ND		0.035	0.41
1,2,4,5-Tetrachlorobenzene	95-94-3	66	190,000	6	6	16	mg/kg	ND		0.029	0.40	ND		0.031	0.41
2,2'-oxybis[1-chloropropane]	108-60-1	44	250	30	8	8	mg/kg	ND		0.016	0.40	ND		0.017	0.41
2,3,4,6-Tetrachlorophenol	58-90-2	6,600	190,000	2,000	2,000	5,500	mg/kg	ND		0.037	0.40	ND		0.039	0.41
2,4,5-Trichlorophenol	95-95-4	22,000	190,000	2,600	2,600	7,300	mg/kg	ND		0.039	0.40	ND		0.041	0.41
2,4,6-Trichlorophenol	88-06-2	220	190,000	12	12	34	mg/kg	ND		0.011	0.16	ND		0.012	0.17
2,4-Dichlorophenol	120-83-2	660	190,000	2	1	1	mg/kg	ND		0.0093	0.16	ND		0.0098	0.17
2,4-Dimethylphenol	105-67-9	4,400	10,000	83	36	100	mg/kg	ND		0.087	0.40	ND		0.091	0.41
2,4-Dinitrophenol	51-28-5	440	190,000	8.3	0.94	2.6	mg/kg	ND		0.30	0.32	ND		0.31	0.33
2,4-Dinitrotoluene	121-14-2	60	190,000	0.24	0.057	0.26	mg/kg	ND		0.016	0.080	ND		0.016	0.084
2,6-Dinitrotoluene	606-20-2	12	190,000	0.049	0.015	0.068	mg/kg	ND		0.021	0.080	ND		0.022	0.084
2-Chloronaphthalene	91-58-7	18,000	190,000	7,000	7,000	20,000	mg/kg	ND		0.0090	0.40	ND		0.0094	0.41
2-Chlorophenol	95-57-8	1,100	10,000	4.4	4.4	4.4	mg/kg	ND		0.010	0.40	ND		0.011	0.41
2-Methylnaphthalene	91-57-6	880	190,000	680	680	1,900	mg/kg	ND		0.0087	0.40	0.036	J	0.0091	0.41
2-Methylphenol	95-48-7	11,000	190,000	210	35	96	mg/kg	ND		0.017	0.40	ND		0.018	0.41
2-Nitroaniline	88-74-4	2,200	190,000	42	8	21	mg/kg	ND		0.013	0.40	ND		0.014	0.41
2-Nitrophenol	88-75-5	1,800	190,000	33	6.7	19	mg/kg	ND		0.013	0.40	ND		0.014	0.41
3,3'-Dichlorobenzidine	91-94-1	41	190,000	8.8	8.8	42	mg/kg	ND		0.044	0.16	ND		0.046	0.17
3-Nitroaniline	99-09-2	NS	NS	NS	NS	NS	mg/kg	ND		0.012	0.40	ND		0.012	0.41
4,6-Dinitro-2-methylphenol	534-52-1	18	190,000	0.33	0.3	0.7	mg/kg	ND		0.11	0.32	ND		0.11	0.33
4-Bromophenyl phenyl ether	101-55-3	NS	NS	NS	NS	NS	mg/kg	ND		0.012	0.40	ND		0.013	0.41
4-Chloro-3-methylphenol	59-50-7	22,000	190,000	870	870	2,500	mg/kg	ND		0.017	0.40	ND		0.018	0.41
4-Chloroaniline	106-47-8	93	190,000	0.47	0.5	2.1	mg/kg	ND		0.01	0.40	ND		0.011	0.41
4-Chlorophenyl phenyl ether	7005-72-3	NS	NS	NS	NS	NS	mg/kg	ND		0.012	0.40	ND		0.012	0.41
4-Methylphenol	106-44-5	1,100	190,000	21	4.9	14	mg/kg	ND		0.011	0.40	ND		0.011	0.41
4-Nitroaniline	100-01-6	880	190,000	3.7	0.55	2.5	mg/kg	ND		0.015	0.40	ND		0.016	0.41
4-Nitrophenol	100-02-7	1,800	190,000	6	4.1	4.1	mg/kg	ND		0.19	0.80	ND		0.20	0.84
Acenaphthene	83-32-9	13,000	190,000	3,100	3,100	4,700	mg/kg	0.014	J	0.0096	0.40	0.015	J	0.01	0.41
Acenaphthylene	208-96-8	13,000	190,000	2,800	2,800	8,000	mg/kg	ND		0.010	0.40	0.021	J	0.011	0.41
Acetophenone	98-86-2	10,000	10,000	420	230	640	mg/kg	ND		0.0086	0.40	ND		0.009	0.41
Anthracene	120-12-7	66,000	190,000	350	350	350	mg/kg	0.042	J	0.038	0.40	ND		0.039	0.41
Atrazine	1912-24-9	81	190,000	0.3	0.13	0.13	mg/kg	ND	*	0.018	0.16	ND	*	0.018	0.17
Benzaldehyde	100-52-7	NS	NS	NS	NS	NS	mg/kg	ND		0.03	0.40	ND		0.032	0.41
Benzo[a]anthracene	56-55-3	6	190,000	28	6	130	mg/kg	0.20		0.033	0.040	0.14		0.035	0.041
Benzo[a]pyrene	50-32-8	0.58	190,000	46	0.58	12	mg/kg	0.19	*	0.012	0.040	0.091	*	0.013	0.041
Benzo[b]fluoranthene	205-99-2	3.5	190,000	26	3.5	76	mg/kg	0.27	*	0.015	0.040	0.18	*	0.016	0.041
Benzo[g,h,i]perylene	191-24-2	13,000	190,000	180	180	180	mg/kg	0.096	J	0.023	0.40	0.051	J	0.024	0.41
Benzo[k]fluoranthene	207-08-9	4	190,000	210	4	76	mg/kg	0.088		0.017	0.040	0.051		0.018	0.041
Bis(2-chloroethoxy)methane	111-91-1	660	10,000	13	3.4	9.2	mg/kg	ND		0.012	0.40	ND		0.013	0.41
Bis(2-chloroethyl)ether	111-44-4	1.3	7.7	0.015	0.0045	0.023	mg/kg	ND		0.0093	0.040	ND		0.0098	0.041
Bis(2-ethylhexyl) phthalate	117-81-7	1,300	10,000	130	130	130	mg/kg	0.027	J	0.015	0.40	ND		0.016	0.41
Butyl benzyl phthalate	85-68-7	9,800	10,000	3,200	3,200	10,000	mg/kg	ND		0.012	0.40	ND		0.013	0.41
Caprolactam	105-60-2	NS	NS	NS	NS	NS	mg/kg	ND		0.029	0.40	ND		0.030	0.41
Carbazole	86-74-8	930	190,000	24	24	110	mg/kg	0.025	J	0.0098	0.40	0.014	J	0.010	0.41
Chrysene	218-01-9	35	190,000	230	35	230	mg/kg	0.20	J	0.011	0.40	0.22	J	0.011	0.41
Dibenz(a,h)anthracene	53-70-3	1	190,000	25	1	22	mg/kg	0.035	J	0.021	0.040	0.024	J	0.022	0.041
Dibenzofuran	132-64-9	220	190,000	110	110	310	mg/kg	0.012	J	0.012	0.40	0.016	J	0.013	0.41
Diethyl phthalate	84-66-2	10,000	10,000	3,300	1,000	2,900	mg/kg	ND		0.011	0.40	ND		0.012	0.41
Dimethyl phthalate	131-11-3	NS	NS	NS	NS	NS	mg/kg	ND		0.012	0.40	ND		0.012	0.41
Di-n-butyl phthalate	84-74-2	10,000	10,000	1,700	1,700	4,900	mg/kg	ND		0.012	0.40	ND		0.012	0.41
Di-n-octyl phthalate	117-84-0	2,200	10,000	10,000	2,200	10,000	mg/kg	ND	*	0.020	0.40	ND	*	0.021	0.41
Fluoranthene	206-44-0	8,800	190,000	3,200	3,200	3,200	mg/kg	0.35	J	0.012	0.40	0.31	J	0.012	0.41
Fluorene	86-73-7	8,800	190,000	3,400	3,400	3,800	mg/kg	0.015	J	0.0086	0.40	0.02	J	0.009	0.41
Hexachlorobenzene	118-74-1	12	190,000	0.96	0.96	0.96	mg/kg	ND		0.016	0.040	ND		0.017	0.041
Hexachlorobutadiene	87-68-3	220	10,000	11	11	52	mg/kg	ND		0.011	0.080	ND		0.012	0.084
Hexachlorocyclopentadiene	77-47-4	1,300	10,000	91	91	91	mg/kg	ND		0.025	0.40	ND		0.026	0.41
Hexachloroethane	67-72-1	44	260	0.56	0.56	0.56	mg/kg	ND		0.014	0.040	ND		0.015	0.041
Indeno[1,2,3-cd]pyrene	193-39-5	3.5	190,000	1,500	3.5	76	mg/kg	0.12		0.026	0.040	0.058		0.028	0.041
Isophorone	78-59-1	10,000	10,000	10	1.9	1.9	mg/kg	ND		0.0085	0.16	ND		0.0089	0.17
Naphthalene	91-20-3	160	190,000	25	25	25	mg/kg	0.032	J	0.010	0.40	0.1	J	0.011	0.41
Nitrobenzene	98-95-3	440	10,000	8.3	3.6	10	mg/kg	ND		0.012	0.040	ND		0.013	0.041
N-Nitrosodi-n-propylamine	621-64-7	2.7	10,000	0.01	0.0014	0.0068	mg/kg	ND		0.013	0.040	ND		0.014	0.041
N-Nitrosodiphenylamine	86-30-6	3,800	190,000	23	23	110	mg/kg	ND		0.036	0.40	ND		0.038	0.41
Pentachlorophenol	87-86-5	47	190,000	5	5	5	mg/kg	ND		0.048	0.32	ND		0.050	0.33
Phenanthrene	85-01-8	66,000	190,000	10,000	10,000	10,000	mg/kg	0.21	J	0.011	0.40	0.28	J	0.011	0.41
Phenol	108-95-2	3,800	18,000	200	33	33	mg/kg	ND		0.013	0.40	ND		0.014	0.41
Pyrene	129-00-0	6,600	190,000	2,200	2,200	2,200	mg/kg	0.36	J	0.018	0.40	0.33	J	0.019	0.41
Total Estimated Conc. (TICs)	N/A	NS	NS	NS	NS	NS	mg/kg	2.53		-	-	2.25		-	-

Notes:

0.30	Laboratory MDL exceeds PADEP Fill Concentration Limit
PADEP -	Pennsylvania Department of Environmental Protection
MSC -	Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018)
RUA -	Residential Used Aquifer
TDS -	Total Dissolved Solids in milligrams per liter (mg/L)
[1] -	The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs.
'bgs -	feet below ground surface
Q -	Qualifier
RL -	Reporting Limit
MDL -	Method Detection Limit
mg/kg -	milligrams per kilgram
NS -	No PADEP MSC available.
ND -	Not detected above laboratory MDL
* -	Recovery or Relative Percent Difference (RPD) exceeds control limits
J -	Laboratory estimated value due to detection above MDL but below RL.

Table 3
April 2015 Urban Fill Characterization Samples - Pesticide, PCB and Metal Analytical Results
Logan Pointe Redevelopment Area
North Philadelphia, Pennsylvania

	CAS No.	PADEP Residential Direct Contact Soil MSC (0-15 'bgs)	PADEP Non-Residential Direct Contact Subsurface Soil MSC	PADEP Soil-to-Groundwater MSC for RUA with TDS < 2500 mg/L[1]	PADEP Clean Fill Concentration Limits (January 2020)	PADEP Regulated Fill Concentration Limits (January 2020)	Client ID	L-TP-3_4-4.5				L-TP-3_8.5-9			
							Lab Sample ID	460-92589-5				460-92589-4			
							Sampling Date	4/1/2015 10:15				4/1/2015 10:05			
							Sample Depth ('bgs)	4 - 4.5				8.5 - 9			
							Matrix	Soil				Soil			
							Dilution Factor	1				1			
Pesticides by US EPA Method SW846 8081B							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL
4,4'-DDD	72-54-8	78	190,000	33	33	150	mg/kg	ND		0.0016	0.0081	ND		0.0016	0.0084
4,4'-DDE	72-55-9	55	190,000	46	46	220	mg/kg	ND		0.0016	0.0081	ND		0.0016	0.0084
4,4'-DDT	50-29-3	55	190,000	130	130	270	mg/kg	ND		0.0020	0.0081	ND		0.0019	0.0084
Aldrin	309-00-2	1.1	190,000	0.52	0.52	2.4	mg/kg	ND		0.0018	0.0081	ND		0.0017	0.0084
alpha-BHC	319-84-6	3	190,000	0.055	0.055	0.25	mg/kg	ND		0.0019	0.0024	ND		0.0018	0.0025
beta-BHC	319-85-7	10	190,000	0.24	0.24	1.1	mg/kg	ND		0.0020	0.0024	ND		0.0019	0.0025
Chlordane (technical)	57-74-9	53	190,000	49	49	49	mg/kg	ND		0.024	0.081	ND		0.023	0.084
delta-BHC	319-86-8	NS	NS	NS	NS	NS	mg/kg	ND		0.0015	0.0024	ND		0.0014	0.0025
Dieldrin	60-57-1	1.2	190,000	0.13	0.13	0.58	mg/kg	ND		0.0015	0.0024	ND		0.0014	0.0025
Endosulfan I	959-98-8	1,300	190,000	130	130	260	mg/kg	ND		0.0019	0.0081	ND		0.0018	0.0084
Endosulfan II	33213-65-9	1,300	190,000	150	150	260	mg/kg	ND		0.0016	0.0081	ND		0.0016	0.0084
Endosulfan sulfate	1031-07-8	1,300	190,000	70	70	70	mg/kg	ND		0.0016	0.0081	ND		0.0016	0.0084
Endrin	72-20-8	66	190,000	5.5	5.5	5.5	mg/kg	ND		0.0020	0.0081	ND		0.0019	0.0084
Endrin aldehyde	7421-93-4	NS	NS	NS	NS	NS	mg/kg	ND		0.0013	0.0081	ND		0.0012	0.0084
Endrin ketone	53494-70-5	NS	NS	NS	NS	NS	mg/kg	ND		0.0016	0.0081	ND		0.0016	0.0084
gamma-BHC (Lindane)	58-89-9	17	190,000	0.072	0.072	0.072	mg/kg	ND		0.0015	0.0024	ND		0.0014	0.0025
Heptachlor	76-44-8	4	190,000	0.68	0.68	0.68	mg/kg	ND		0.0020	0.0081	ND		0.0019	0.0084
Heptachlor epoxide	1024-57-3	2	190,000	1.1	1.1	1.1	mg/kg	ND		0.0019	0.0081	ND		0.0018	0.0084
Methoxychlor	72-43-5	1,100	190,000	630	630	630	mg/kg	ND		0.0020	0.0081	ND		0.0019	0.0084
Toxaphene	8001-35-2	17	190,000	1.2	1.2	1.2	mg/kg	ND		0.023	0.081	ND		0.022	0.084
Polychlorinated Biphenyls (PCBs) by US EPA Method SW846 8082A							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL
Aroclor 1016	12674-11-2	9	10,000	10	9	46	mg/kg	ND		0.018	0.080	ND		0.019	0.084
Aroclor 1221	11104-28-2	9	10,000	0.18	0.18	0.83	mg/kg	ND		0.018	0.080	ND		0.019	0.084
Aroclor 1232	11141-16-5	9	10,000	0.14	0.14	0.7	mg/kg	ND		0.018	0.080	ND		0.019	0.084
Aroclor 1242	53469-21-9	9	10,000	4	4	20	mg/kg	ND		0.018	0.080	ND		0.019	0.084
Aroclor 1248	12672-29-6	9.3	10,000	18	18	46	mg/kg	ND		0.018	0.080	ND		0.019	0.084
Aroclor 1254	11097-69-1	4.4	10,000	75	4.4	46	mg/kg	ND		0.023	0.080	ND		0.024	0.084
Aroclor 1260	11096-82-5	9	190,000	170	9	46	mg/kg	ND		0.023	0.080	ND		0.024	0.084
Aroclor 1268	11100-14-4	NS	NS	NS	NS	NS	mg/kg	ND		0.023	0.080	ND		0.024	0.084
Aroclor 1262	37324-23-5	NS	NS	NS	NS	NS	mg/kg	ND		0.023	0.080	ND		0.024	0.084
[illegible] PCBs	N/A	NS	NS	NS	NS	NS	mg/kg	ND		0.023	0.080	ND		0.024	0.084
[illegible]als by US EPA Methods SW846 6010C, 7471A and 9012B							Unit	Result	Q	MDL	RL	Result	Q	MDL	RL
Aluminum	7429-90-5	190,000	190,000	NS	NS	NS	mg/kg	12,500		21.6	39.1	6,490		23.1	41.8
Antimony	7440-36-0	88	190,000	27	27	27	mg/kg	ND		1.5	3.9	ND		1.6	4.2
Arsenic	7440-38-2	12	190,000	29	12	29	mg/kg	6.9		0.80	2.9	8.9		0.86	3.1
Barium	7440-39-3	44,000	190,000	8,200	8,200	8,200	mg/kg	116		1.7	39.1	166		1.8	41.8
Beryllium	7440-41-7	440	190,000	320	320	320	mg/kg	ND		0.27	0.39	ND		0.28	0.42
Cadmium	7440-43-9	110	190,000	38	38	38	mg/kg	ND		0.28	0.78	ND		0.30	0.84
Calcium	7440-70-2	NS	NS	NS	NS	NS	mg/kg	4,840		74.7	977	7,150		80	1,050
Chromium	7440-47-3	NS	NS	NS	NS	NS	mg/kg	23.3		0.78	2.0	11.7		0.84	2.1
Cobalt	7440-48-4	66	190,000	59	59	160	mg/kg	6.9	J	0.88	9.8	5.6	J	0.94	10.5
Copper	7440-50-8	8,100	190,000	43,000	8,100	43,000	mg/kg	42.8		1.7	4.9	50.6		1.8	5.2
Iron	7439-89-6	150,000	190,000	NS	NS	190,000	mg/kg	18,500		24.3	29.3	10,300		26	31.4
Lead	7439-92-1	500	190,000	450	450	450	mg/kg	399		0.80	2.0	377		0.86	2.1
Magnesium	7439-95-4	NS	NS	NS	NS	NS	mg/kg	3,040		64.9	977	3,440		69.5	1,050
Manganese	7439-96-5	10,000	190,000	2,000	2,000	2,000	mg/kg	226		0.84	2.9	133		0.9	3.1
Nickel	7440-02-0	4,400	190,000	650	650	650	mg/kg	12.7		1.7	7.8	11.9		1.9	8.4
Potassium	7440-09-7	NS	NS	NS	NS	NS	mg/kg	1,300		27	977	1,330		28.9	1,050
Selenium	7782-49-2	1,100	190,000	26	26	26	mg/kg	ND		1.1	3.9	ND		1.2	4.2
Silver	7440-22-4	1,100	190,000	84	84	84	mg/kg	ND		0.38	2.0	ND		0.41	2.1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	110	J	73.9	977	188	J	79.1	1,050
Thallium	7440-28-0	2.2	190,000	14	2.2	14	mg/kg	ND		1.9	3.9	ND		2.1	4.2
Vanadium	7440-62-2	15	190,000	290	15	220	mg/kg	33.1		0.81	9.8	21.3		0.87	10.5
Zinc	7440-66-6	66,000	190,000	12,000	12,000	12,000	mg/kg	127		1.7	5.9	135		1.8	6.3
Mercury	7439-97-6	35	190,000	10	10	10	mg/kg	0.34		0.014	0.020	0.47		0.015	0.021
Cyanide	57-12-5	130	190,000	200	130	200	mg/kg	0.069	J	0.019	0.12	0.36		0.022	0.14

Notes:

33.1 Result exceeds PADEP Residential Direct Contact Soil MSC and PADEP Clean Fill Concentration Limit

PADEP - Pennsylvania Department of Environmental Protection

MSC - Medium-Specific Concentrations (last updated in August 2016, with revisions in March 2018)

RUA - Residential Used Aquifer

TDS - Total Dissolved Solids in milligrams per liter (mg/L)

[1] - The appropriate PADEP Soil-to-Groundwater MSC was selected by selecting the higher of the Generic and 100XGW Soil-to-Groundwater MSCs.

'bgs - feet below ground surface

Q - Qualifier

RL - Reporting Limit

MDL - Method Detection Limit

mg/kg - milligrams per kiligram

NS - No PADEP MSC available.

ND - Not detected above laboratory MDL

J - Laboratory estimated value due to detection above MDL but below RL.

Appendix A

City and State Letters Regarding SIA Eligibility

pennsylvania
DEPARTMENT OF COMMUNITY
AND ECONOMIC DEVELOPMENT

February 21, 2019

Mr. Troy Conrad
Acting Director
Department of Environmental Protection
Environmental Cleanup & Brownfields
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17105

RE: Federal Opportunity Zones

Dear Mr. Conrad:

This letter is written in response to your question concerning the basis for continuation of Act 2 eligibility for sites located within Federal Opportunity Zones, Keystone Opportunity Zones, Keystone Opportunity Expansion Zones, and Keystone Opportunity Investment Zones (KOZs/KOEZs/KOIZs). The Department of Community and Economic Development (DCED) believes that Act 2 site clean-up activities are vital to the redevelopment and marketability of these older strategically located industrial sites throughout the Commonwealth and the Federal Opportunity Zones and KOZs/KOEZs/KOIZs play an important role in enabling communities to attract new business investment and job creation at these sites.

For these reasons, DCED will continue the policy established in 1999 to consider all Opportunity Zones including Federal Opportunity Zones and KOZs/KOEZs/KOIZs as enterprise zones for Act 2 purposes, specifically the Special Industrial Area (SIA) designation. If you have any questions regarding this letter, please feel free to contact me.

Sincerely,

Carol L. Kilko

Carol L. Kilko
Deputy Secretary for Business Finance

Division of Development Services
CITY OF PHILADELPHIA

1515 Arch St., 13th Floor
Philadelphia, PA 19102
P: (215) 683-4614
john.mondlak@phila.gov
phila.gov/development-services

John Mondlak
Deputy Director for Development Services

February 25, 2020

Secretary Patrick McDonnell
Department of Environmental Protection
Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, Pa. 17105- 2063

RE: Logan Triangle, Philadelphia, PA

Dear Secretary McDonnell,

Please accept this letter as an acknowledgement that the Logan Triangle site in Philadelphia is located within a Qualified Opportunity Zone and therefore eligible for consideration as a Special Industrial Area. The Logan Triangle site is bounded by Roosevelt Boulevard and Wingohocking Street on the south, 11th Street on the west, Loudon Street on the north and a utility right-of-way parallel to 6th St on the east.

The current owner of the site is the Philadelphia Redevelopment Authority and has a signed redevelopment agreement with the Goldenberg Group to develop this site. The City of Philadelphia wishes to encourage the redevelopment of this site which has sat blighted and vacant for several decades. Classifying this area as a Special Industrial Area will help bring it back to productive use. I request that you consider classifying this site as a Special Industrial Area.

Thank you for your on-going support of projects in Philadelphia.

Sincerely,

John Mondlak
Deputy Director for Development Services
City of Philadelphia