

**PUBLIC INVOLVEMENT PLAN**

**SHEPARD RECREATION CENTER  
5700 HAVERFORD AVENUE  
PHILADELPHIA, PENNSYLVANIA**

October 2022  
(Revised)

Prepared on behalf of:

Nicetown Community Development Corporation  
4414 Germantown Avenue  
Philadelphia, PA 19140

And

Philadelphia Parks and Recreation  
1515 Arch Street, 10<sup>th</sup> Floor  
Philadelphia, PA 19102

Prepared by:

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Philadelphia, Pennsylvania 19107

Duffield Associates, LLC (Duffield) has prepared this Public Involvement Plan (PIP) on behalf of the Nicetown Community Development Corporation (Nicetown CDC) and Philadelphia Parks and Recreation (PPR), who are the “Remediators” of the property identified as Shepard Recreation Center (Site), which is bound by Haverford Avenue, North 57th Street, Vine Street, and North 58th Street in the Haddington Neighborhood of Philadelphia. Shepard Recreation Center is approximately 4.73-acres in size and is shown on the image to the right.



This document provides a brief outline of the environmental activities and results performed to characterize the Site. The activities described herein were completed to provide the information necessary to obtain a release of liability under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, also known as Act 2. Remediation activities are complete and included the removal of a buried tank containing heating oil. It is the intent of Nicetown CDC and PPR to demonstrate attainment of Residential Site Specific Standards at the Site.

## OBJECTIVE

The objectives of this PIP are to provide information to the community concerning the environmental assessments conducted at the Site. Further, it is intended to meet the requirements of Title 25, Chapter 250, § 250.6 of the Pennsylvania Code (Act 2) regarding Public Participation and to satisfy the request made by the City of Philadelphia Department of Public Health (DPH) to conduct public outreach and education of site conditions.

Both PADEP and DPH require the preparer of the PIP provide the following:

- Public access at a convenient location for document review. This PIP will be located in the Haverford Library of the Free Library of Philadelphia, 5543 Haverford Avenue, Philadelphia, Pennsylvania 19139.
- Designation of a single contact person to address questions from the community. The contact person will be:  
Jennifer Gresh, PG  
Duffield Associates, LLC  
211 N. 13<sup>th</sup> Street, Suite 704  
Philadelphia, PA 19107  
215-545-7295
- A location near the Property for any public hearing and meeting. The Meeting will be held on November 21, 2022, and will begin at 6:30 PM. The location for the public meeting is Shepard Recreation Center, 5700 Haverford Avenue, Philadelphia, PA.

## LOCATION

Shepard Recreation Center is located in the Haddington Neighborhood of Philadelphia and is bound by Haverford Avenue, North 57<sup>th</sup> Street, Vine Street, and North 58<sup>th</sup> Street. The Site is currently used as a recreation center and playing fields, primarily consisting of open fields, baseball diamonds, a pool, track, basketball courts, playground equipment, a pavilion, and two buildings. Surrounding land uses include the SEPTA Callowhill Bus Depot and mixed residential and commercial properties.

## ENVIRONMENTAL CONDITIONS

Duffield conducted several environmental assessments at the Site to include a Phase I Environmental Site Assessment (ESA), a lead in surface soil assessment, and site-wide characterization of soil and groundwater. A brief summary of activities and findings is presented below.

- The Phase I ESA identified historic uses of the Site for auto repair and metal working shops along with the presence of groundwater monitoring wells as recognized environmental conditions. The monitoring wells were installed to evaluate off-site migration of contaminants on the water table from the western adjoining, Septa – Callowhill Garage site. Free phase petroleum (oil) and 1,2,4-trimethylbenzene were detected in groundwater samples collected from one of the wells.
- A geophysical survey was conducted in the area of the wells. An unregulated buried tank along with piping were identified by the survey. The tank was estimated to be approximately 2,000 gallons in size and presumed to contain heating oil.
- Soil borings were installed for sampling in the area of the buried tank to delineate petroleum impact in soils to support planning for the tank and piping removal.
- Site-wide assessment of soils was conducted. Forty soil samples were collected from 26 sampling locations (soil borings) throughout the property from varying depths to characterize surface soils (0-2 feet below the ground surface) and apparent fill materials and natural soils occurring in the 2 to 15 foot interval. Soil samples were analyzed by a laboratory for a full suite of U.S. EPA target substances including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals.
- Analytic results for the site-wide sampling indicate the following:
  - Arsenic was reported in one sample at a concentration that exceeded the Residential Direct Contact SWHS. The reported concentration was 13.1 mg/kg and the SWHS is 12 mg/kg. The sample was collected at 7 feet below the ground surface.
  - Lead was reported in one surface soil sample at a concentration that exceeded the Residential Soil-to-Groundwater SWHS. The reported concentration was 491 mg/kg, exceeding the Soil-to-Groundwater SWHS of 450 mg/kg. The reported concentration of lead was less than the Residential Direct Contact SWHS.

- Vanadium concentrations exceeded the Residential Direct Contact SWHS in all analyzed samples. Vanadium concentrations were similar for all samples analyzed and analytic results are consistent with published background concentrations.
- On-site groundwater monitoring wells were sampled and analyzed by a laboratory for U.S. EPA VOCs and SVOCs. Oil was not observed in any of the on-site wells and analytic results indicated that groundwater quality is acceptable under the PADEP Residential Used Aquifer Standards (Residential Statewide Health Standards).
- The tank, associated piping, and petroleum-impacted soils were excavated and removed in May-June 2022. Approximately 125 tons of soil was disposed off-site and fifteen post-excavation soil samples were collected along with two samples of groundwater encountered in the excavation. Samples were analyzed by the laboratory for PADEP's Short List of Petroleum Product for Fuel Oil No. 2 (heating oil). Analytic results indicate the following:
  - Two samples collected from the bottom of the excavation (approximately 15 feet below the ground surface) were reported with concentrations of naphthalene that exceeded the Residential Direct Contact SWHS. The maximum reported naphthalene concentration was 55.8 mg/kg, exceeding the SWHS of 13 mg/kg.
  - No exceedances of the analyzed substances were reported for the groundwater samples.

## CONCEPTUAL SITE MODEL (CSM)

The conceptual site model is an overview that describes the main source areas on the Site, summarizes the geologic and hydrogeologic framework that controls the transport of constituents of concern (COCs), and describes the distribution of COCs in soil and groundwater. The CSM supports the identification of potential exposure pathways, which are discussed in the Site Specific Standard-Risk Assessment Section of this PIP.

The Site, formerly occupied by industrial uses, was subject to placement of historic soil fill mixed with construction and demolition debris consisting of brick, concrete, asphalt, and other materials. A buried tank containing residual heating oil was identified and removed from the ground as part of the site work. Historic groundwater sampling conducted by others to assess groundwater impact from an adjoining site indicated that oil was present on the water table and that 1,2,4-trimethylbenzene was detected at a concentration that exceeded the SWHS. Subsequent sampling of groundwater at the Site has indicated no exceedances of the applicable SWHS and no oil has been observed on the water table since July 2014. No further assessment of groundwater was recommended.

A buried tank removed in 2022 was considered the source of oil and historic petroleum compounds detected in analytic results for groundwater. The substance naphthalene was reported at concentrations that exceeded the SWHS in 2 of 15 soil samples collected to document subsurface conditions after the tank removal. In accordance with the procedures established under 25 Pa. Code §250.707(b)(1)(i) demonstration of a cleanup standard allows for the use of the 75%/10X rule. This rule requires that 75% of the samples collected for demonstration attainment be equal to or below the risk-based cleanup standard and that no single sample result exceeds the risk based standard by more than ten times. For naphthalene, 87% of the results

were less than the standard and the maximum concentration of 55.8 mg/kg is less than 10X the SWHS of 13 mg/kg. The number of samples required to be collected to use this approach is established under §250.703(b), which requires up to 12 samples for soil disposal volumes up to 290 tons (3,000 tons). Also, while naphthalene exceeded the Soil-to-Groundwater SWHS, this substance has not been identified as a COC in groundwater during any of the sampling events. For these reasons, naphthalene was not considered for further assessment.

#### Human Health – Direct Contact SWHS

Arsenic was identified in one sample collected of the subsurface soils. As a conservative approach, this substance was considered for exposure and risk assessment even though concentrations of substances reported at depths greater than 2-feet are unlikely to come in contact with users of the Recreational Center.

#### Soil-to-Groundwater – Impact to Groundwater

Analytic results for one sample collected of the surface soils (SB-19) was reported with a lead concentration that exceeded the Soil-to-Groundwater SWHS. The Soil-to-Groundwater SWHS is a leachability standard used to assess the potential for impact to groundwater.

As per § 250.308(b) and (c) if the soil buffer distance is satisfied, the direct contact numeric value is applied. The soil buffer distance is 10 feet for lead as per Table 4.b. of the regulation. The soil buffer distance is defined as the area between the regulated substance and the groundwater table or bedrock.

For the sample collected at SB-19, groundwater was not encountered in the upper 15 feet of the sample location. Accordingly, the Direct Contact SWHS is the appropriate standard. The reported concentration of lead in sample SB-14B was 491 mg/kg, which is less than the Direct Contact SWHS for lead of 500 mg/kg, thus demonstrating attainment of the SWHS for lead.

#### Potential for Vapor Intrusion

The potential for vapor intrusion of volatile organic substances into buildings was assessed. The following is noted about the current and future use of the Site:

- Generally, VOCs were not detected at elevated concentrations in soil or groundwater samples.
- There are no known sources of separate phase liquid (SPL) remaining on the Site.
- Naphthalene was reported at a concentration that exceeded the Residential Soil SWHS Vapor Intrusion Screening Value. Naphthalene was not detected in groundwater at the site at concentrations that exceeded the SWHS. The location of this exceedance is in an area of that is currently used for playing fields and redevelopment plans intend to maintain that use. Accordingly, potential vapor pathways from soil present negligible risk as per Act 2 guidelines and no further assessment of the potential for vapor intrusion is required.

## RISK ASSESSMENT

- To confirm the site was adequately characterized and the CSM, the coefficient of variation (COV) was calculated for each compound. The COV is a statistical measure of how individual data points vary about the mean value. Values less than or near 1.0 indicate that the data form a relatively close group about the mean value. Values larger than 1.0 indicate that the data show a greater degree of scatter about the mean. Accordingly, results less than 1.0 are interpreted to be uniform or homogeneous, while greater than 1.0 are interpreted to be heterogeneous.
  - Arsenic: The CoV for arsenic was 0.58, indicating a homogenous distribution.
- Numerous current and future exposure scenarios were considered to evaluate risk, however the most conservative exposure, residential land use is presented herein. The residential exposure, while not likely at the Site considers exposure to site soils as follows:
  - The resident is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, inhalation of volatiles and fugitive dust. Adults and children exhibit different ingestion rates for soil. For example, the child resident is assumed to ingest 200 mg per day while the adult ingests 100 mg per day.

## RISK CHARACTERIZATION - SOIL

Risk characterization integrates the results of the exposure and toxicity assessments to estimate potential cancer risks and non-cancer hazards. Carcinogenic risk estimates are expressed in terms of the probability that an individual will contract cancer over a lifetime of exposure. Cancer risk attributable to exposure from a single chemical by a single exposure route is estimated by multiplying the exposure dose for that chemical through the exposure route by the chemical's cancer slope factor. Chemical-specific risks are then summed to provide a calculated total cancer risk associated with each exposure route. Risks for each exposure route of concern are then summed to estimate a total risk for an individual receptor exposed. The calculated cancer risk estimates are then compared to the human health protection goals established in §250.402 of Act 2 of  $10^{-4}$  to  $10^{-6}$ , which represent an excess upper-bound lifetime risk of between 1 in 10,000 and 1 in 1 million.

Non-carcinogenic hazards are expressed in terms of hazard quotient (HQs) and hazard index (HI). A HQ is calculated for each chemical for each exposure route by dividing the exposure dose by the chemical-specific reference dose. A HI is calculated for each exposure route by summing the HQs. HIs for each exposure route are summed to derive a total HI for each scenario. A HI may not exceed one, per the human health protection goals established in §250.402 of Act 2.

Cancer risk and non-cancer hazard estimates are presented in the table below.

COC	Hazard Index	Cancer Risk
Arsenic	0.5	$8.3 \times 10^{-6}$

- Cancer risk estimates for potential exposure scenarios did not exceed the target risk of  $10^{-4}$  for any receptor.
- Non-cancer hazard index estimates do not exceed the regulatory value of 1.

## SUMMARY- SITE SPECIFIC STANDARD

This PIP describes the environmental condition of soils and groundwater located on the property identified as the Shepard Recreation Center site. The site characterization of soils included collection and analysis of 40 samples from 26 locations across the 4.73-acre site. Soils were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. The results indicated that one result for arsenic in soils was present at a concentration in excess of the SWHS.

A human health risk assessment was performed based on current and future use of the Site. An exposure assessment was performed for the most conservative land use scenario, residential use. Based on the exposure scenario, risk calculations. The results of the risk calculations indicated that under current and future land use scenarios, conditions caused by the presence of regulated substances in soils do not pose unacceptable cancer and non-cancer risks.

Analytic results indicate that the substance naphthalene was present at concentrations that exceeded the Direct Contact SWHS and the Soil-to-Groundwater SWHS. Demonstration of attainment of the SWHS for soil was presented using the 75%/10X rule. Naphthalene was not detected in groundwater at the site. Also, groundwater is not a source of potable water in the City of Philadelphia. A vapor intrusion screening was performed and the potential for vapor intrusion of volatile organic compounds into nearby buildings was considered negligible.

Based on these results, demonstration of the Site Specific Standard has been attained. No restrictions are proposed for the site.

## CLEANUP PLAN

These results indicate that for soils, the site is within the human health and environmental protection goals specified in 25 Pa. Code § 250.402 under both current and currently planned future site conditions. No further assessment of soils or restrictions are required.

For groundwater, an institutional control that restricts the use of groundwater for potable purposes is recommended based on the exceedances of the SWHS for naphthalene and lead. No other engineering controls, remediation, or mitigation measures are required.

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