

Pennsylvania Department of Environmental Protection

Data Gap Pre-Design Investigation Report Volume 1: Soil

GTAC 8-1-472 – Bishop Tube HSCA Site

1 S. Malin Road, East Whiteland Township, Chester County, Pennsylvania

July 15, 2026

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**Data Gap Pre-Design Investigation
Report Volume 1: Soil**

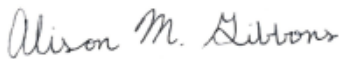
GTAC 8-1-472 – Bishop Tube HSCA Site
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EXECUTIVE SUMMARY

Groundwater and Environmental Services, Inc. (GES) has prepared this Soil Data Gap Pre-Design Investigation Report on behalf of the Pennsylvania Department of Environmental Protection (DEP) for the Bishop Tube HSCA Site (Site) located in East Whiteland Township, Chester County, Pennsylvania. The purpose of the data gap pre-design investigation was to conduct additional investigation and analysis of Site soils, including: an evaluation of perfluoroalkyl and polyfluoroalkyl substances (PFAS) and fluoride in Site soil; and completion of a limited background soil investigation for select inorganics, including total metals, fluoride, and PFAS.

The source property is an approximate 13.7-acre former stainless steel tube manufacturing facility located at 1 South Malin Road in Malvern, Pennsylvania. The area defined as the Site includes the area within the Property boundaries and the extent of groundwater contamination beyond the source property boundaries.

In January 2021, Roux Associates (Roux) submitted a Remedial Investigation Report and Feasibility Study (RI/FS), which were accepted by DEP. The RI/FS identified the Site constituents of concern (COCs) to include compounds related to historical manufacturing operations at the Site. Specifically, the RI/FS COCs for the Site included chlorinated volatile organic compounds (CVOCs) and inorganics (metals and fluoride).

In 2021 and 2022, Roux conducted additional investigation activities to complete soil delineation, refine the COC list for the Site, and evaluate PFAS in groundwater and surface water. The soil samples were analyzed for total chromium, hexavalent chromium, nickel, and fluoride. The results of this sampling concluded that the hexavalent chromium was not detected at concentrations above DEP medium specific concentrations (MSCs). However, fluoride was detected at concentrations above the DEP MSCs in multiple locations. Also, a partial round of groundwater samples was collected from a subset of the wells of the monitoring well network and analyzed for PFAS. It was determined that select PFAS compounds were detected at concentrations above the DEP MSCs established at that time. As a result of the additional investigation activities conducted by Roux, DEP updated the COC list for the Site to include PFAS in addition to the originally defined list presented in the RI/FS. Additionally, in its September 2022 Statement of Decision (SOD) for the Site, DEP determined that further delineation of fluoride in soils and of PFAS in soils and groundwater was needed.

GES completed the soil data gap pre-design investigation activities between December 2025 and March 2026. In total, 201 soil samples (94 PFAS samples, including duplicates; and 107 fluoride samples, including duplicates) were collected from the fluoride and PFAS investigation areas selected based on the results of Roux's investigation. The primary purpose of the soil data gap pre-design investigation was to delineate fluoride and PFAS in soils. Additionally, a limited background soil investigation was performed along the southern boundary of the source property for select inorganics and PFAS (9 PFAS samples, including duplicates; 9 fluoride samples, including duplicates; and 5 metals samples, including duplicates); and limited samples (18 soil



samples) from the data gap pre-design investigation were also submitted for laboratory analysis of target compound list (TCL) volatile organic compounds (VOCs) (including trichloroethene (TCE) and tetrachloroethene (PCE) and all daughter products). Collection of samples for VOCs was based on field observations (i.e., if staining was observed or an elevated PID reading was measured). The purpose of these VOC samples was to evaluate if historical soil concentrations of VOCs had remained stable or decreased, or if any locations outside the previously known VOC impacted areas were present.

The following conclusions can be drawn based on review of the soil data gap pre-design investigation analytical results:

- Fluoride was not detected at concentrations above the PA Act 2 Residential MSC in any unsaturated surface, unsaturated subsurface, or saturated subsurface soil samples during the data gap pre-design investigation. Based upon prior soil characterization performed by Roux, fluoride remains a COC in soil.
- Analyzed PFAS compounds were not detected at concentrations above the current or proposed PA Act 2 Residential MSC in unsaturated subsurface or saturated subsurface soils during the data gap pre-design investigation. Note that Perfluorohexanesulfonic acid (PFHxS) was not detected, but the laboratory RL exceeded the proposed PA Act 2 Residential MSC in all samples.
- Arsenic, cobalt, and manganese exceeded PA Act 2 Residential MSC in the limited background soil investigation area; however, all other metals were detected at concentrations below the PA Act 2 Residential MSC.



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Acronyms

AMSL	Above Mean Sea Level	PFNA	Perfluorononanoic acid
AOC	Area of Concern	PFOA	Perfluorooctanoic acid
bgs	Below Ground Surface	PFOS	Perfluorooctanesulfonic acid
CDP	Conestoga Drive Partners, L.P.	PID	Photoionization Detector
COC	Constituent of Concern	PLS	Professional Licensed Surveyor
CVOC	Chlorinated Volatile Organic Compounds	POCS	Pennsylvania One Call System
DEP	Pennsylvania Department of Environmental Protection	PPE	Personal Protective Equipment
DCNR	Department of Conservation and Natural Resources	QAPP	Quality Assurance Project Plan
ELLE	Eurofins Lancaster Laboratories Environmental, Inc.	RAA	Remedial Alternatives Analysis
FS	Feasibility Study	RI	Remedial Investigation Report
GES	Groundwater & Environmental Services, Inc.	SAP	Sampling and Analysis Plan
HASP	Health and Safety Plan	SOD	Statement of Decision
HFPO-DA	Hexafluoropropylene oxide dimer acid	TAL	Target Analyte List
HSCA	Hazardous Sites Cleanup Act	TAM	Technology Assessment Memorandum
IDW	Investigation Derived Waste	TAT	Turnaround Time
MDL	Method detection limit	TCE	Trichloroethene
MSC	Medium Specific Concentration	TCL	Target Compound List
OSHA	Occupational Safety and Health Administration	USCS	Unified Soil Classification System
PCE	Tetrachloroethylene	USGS	United States Geologic Survey
PDI	Pre-Design Investigation	VDA	Vapor Degreaser Area
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances	VOCs	Volatile Organic Compounds
PFCU	Pinpoint Financial Credit Union	XRF	X-Ray Fluorescence

1 Introduction

Groundwater and Environmental Services, Inc. (GES) has prepared this Soil Data Gap Pre-Design Investigation Report on behalf of the Pennsylvania Department of Environmental Protection (DEP) for the Bishop Tube Hazardous Sites Cleanup Act (HSCA) Site (Site), located in East Whiteland Township, Chester County, Pennsylvania, to document specific additional investigation activities and analyses that were conducted by GES at the Site from December 2025 through May 2026. A map depicting the location of the Site with topographic information on the surrounding area is presented as **Figure 1**. The purpose of the data gap pre-design investigation was to conduct additional investigation and analysis of Site soils, including: an evaluation of perfluoroalkyl and polyfluoroalkyl substances (PFAS) and fluoride in Site soil; and completion of a limited background soil investigation for select inorganics, including total metals, fluoride, and PFAS. The groundwater investigation activities and findings associated with the Data Gap Pre-Design Investigation will be reported separately.

The remainder of this report is organized as follows:

- **Site Description and Background** - This section provides a discussion of Site background information including: the location and description of the Site physical conditions, the physiographic setting, and Site history.
- **Soil Investigation Activities** – This section describes the data gap pre-design soil investigation plan, sampling activities, analysis methodologies, and modifications to the original Work Plan.
- **Summary of Soil Data Gap Pre-Design Investigation Analytical Results** – This section discusses the laboratory analytical results from the soil samples collected during the data gap pre-design investigation activities.
- **Investigation Derived Waste Disposal** – This section summarizes the waste classification and handling prior to disposal.
- **Conclusions** – This section summarizes conclusion based on the results of the investigation.
- **Recommendations** – This section presents recommendations for additional work needed at the Site.

During all field activities, GES personnel followed all appropriate worker health and safety guidelines as per Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. All operations were conducted using Level D protection measures with proper respiratory protection equipment and additional protective clothing readily available for use if site conditions warranted an upgrade to Level C protection. A site-specific health and safety plan (HASP) detailing applicable safety precautions, as well as specific emergency procedures, was prepared for this Site. A copy of the site-specific health and safety plan is on file at GES and DEP offices.

2 Site Description and Background

This section provides a discussion of Site background information, including the location and description of the Site physical conditions; the physiographic setting; and Site background and environmental investigation history.

2.1 Location and Description

The source property is an approximate 13.7-acre former manufacturing facility located at 1 South Malin Road in Malvern, East Whiteland Township, Chester County, Pennsylvania. The approximate geographical coordinates of the center of the property are 40 degrees, 02 minutes, 23 seconds north (latitude) by 75 degrees, 32 minutes, 12 seconds west (longitude). The area defined as the Site includes the area within the source property boundaries and the extent of groundwater contamination beyond the property boundaries. **Figure 1** (Site Location Map) illustrates the location of the Site on the U.S. Geological Survey (USGS) 7.5-Minute Topographic Map for Malvern, Pennsylvania. **Figure 2** (Site Map) is an aerial photograph, which illustrates the layout of the source property.

Current features include two large vacant structures identified as Building 5 and Building 8 that cover approximately 3.7 acres of the source property. The area immediately surrounding the two buildings predominantly consists of concrete and asphalt covered surfaces formerly used for facility driveways, parking and loading areas. The remainder of the Site, primarily in the southern and eastern portions, is forested with mature trees and brush. The source property was historically zoned industrial; however, the sources property was rezoned by East Whiteland Township for residential use in 2014.

Surrounding land use consists of commercial, residential, and industrial properties. A Norfolk Southern rail line is located immediately north of the source property, with commercial properties bordering Lancaster Avenue (Route 30) located beyond the rail line. Little Valley Creek is located on the eastern portion of the property near the boundary with a residential area (General Warren Village) located beyond the stream. South Malin Road is located immediately west of the source property with a bulk petroleum storage terminal owned and operated by Buckeye Partners, L.P., located across South Malin Road. A wooded area and Amtrak rail line are located south of the source property.

2.2 Physiographic Setting

This section provides a discussion of the Site physiographic setting (including the topography and drainage, the geology, and the hydrogeology) as presented in the Remedial Investigation Report dated January 13, 2021 (Roux 2021). This information has been paraphrased by GES to remove references to attachments not included in this report. [Note that Roux (2021) uses of the term “Site” in the text below and it should be considered as “Source Property” for this report.]

2.2.1 Topography and Drainage

The topography of the Site is moderately sloped, ranging from a topographic high of 450 feet above mean seal level (amsl) in the southwestern corner to a topographic low of 375 feet amsl in the northeast corner. Portions of the Site (e.g., the former southern parking area and Building 8 area) reportedly were topographically altered through cut-and fill activities to produce a “benched” condition more suitable for construction and use.

Little Valley Creek runs south to north just within the eastern property boundary. Beyond the Site, the stream travels north and runs through a culvert beneath the Norfolk Southern rail line and Lancaster Avenue. Approximately 500 feet after exiting the culvert to the north of Lancaster Avenue, the stream begins a northeasterly trend, joins Little Valley Creek, and travels approximately 5,000 feet crossing Conestoga Road and Route 29. Little Valley Creek then begins a more easterly trend.

2.2.2 Geology

The Site and surrounding area are located within the Piedmont Physiographic Province and are underlain by rocks that are folded, faulted and metamorphosed. The Site is located primarily within the northeast trending Chester Valley. Chester Valley is predominantly underlain by less resistant carbonate rocks and is bounded by more resistant upland areas to the north and south. These upland areas are also northeast trending, bounding the valley itself, and are referred to as the North Valley Hills and South Valley Hills, respectively.

The carbonate rocks in the vicinity of the Site are the Ordovician Conestoga Formation. According to Sloto (1987, 1990) and Sloto and others (1997), the upper portion of the Conestoga Formation in the Chester Valley area consists of blue-gray to light gray, thin-bedded, argillaceous limestone with intervals of purer, granular limestone. In addition, the carbonate rock of the upper portion of the Conestoga Formation has a finely laminated appearance with shaley partings along bedding planes. The South Valley Hills are underlain by non-carbonate metamorphic phyllite and schist rocks that, in the vicinity of the Site, make up the Octoraro Formation. According to Sloto, the Octoraro Formation in the vicinity of the Site consists of green to silver-gray, fine to medium grained phyllite.

2.2.3 Hydrogeology

Groundwater transport in Chester Valley is primarily through fractures, joints, faults, foliation parting planes and bedding planes, some of which have been enlarged by solution. According to Sloto, the primary porosity in the carbonate rocks of Chester Valley is virtually non-existent (Sloto 1990). In the Chester Valley, groundwater reportedly flows through a network of fractures that more closely resembles a fractured rock groundwater system than a karst terrain flow system (Sloto 1990). On a regional scale, groundwater flow in eastern Chester Valley converges from the North Valley Hills and South Valley Hills toward the center of Chester Valley and then flows to the east-northeast with discharge to the Schuylkill River (Sloto 1990). However, Sloto also reports that most groundwater flow in Valley Creek Basin, the portion of Chester Valley where the Site is located, is local with discharge to local streams (Sloto 1990).

Field observations, water level elevation data and precipitation data indicate that the overburden aquifer within the Site exhibits characteristics of a hydraulically unconfined system (i.e., water table conditions exist). The bedrock aquifer within the Site also largely exhibits characteristics of a hydraulically unconfined system. However, in some locations the bedrock aquifer exhibits hydraulically confined or semi-confined characteristics and likely becomes increasingly confined with depth as a result of decreasing fracture density and connectivity. Water levels from some of the deeper bedrock monitoring wells indicate that the bedrock fractures encountered by those wells are hydraulically isolated or are in poor communication with the shallower portions of the bedrock aquifer.

2.3 Site Background and Environmental Investigation History

In 1951, J. Bishop & Co. Platinum Works was the first entity known to begin manufacturing operations at the Site. The plant was used primarily for the manufacturing of tubing from stainless steel and, among other things, for specialty metal fabrication. The facility that was built in 1951 (referred to as “Plant 5”) is the more southerly of the two current buildings. In 1958, a second building was constructed, referred to as “Plant 8.” The facility continued to operate under various owners and operators as a metal alloy tube manufacturing facility until 1999. Metal alloy tube production concentrated on seamless stainless-steel products for much of the period of operation. During certain periods of time, chlorinated solvents were used for degreasing at the Property. The Property is currently owned by Constitution Drive Partners, L.P. (CDP), who purchased it from the Central and Western Chester County Industrial Development Authority in 2005. The Site has been vacant from 1999 to present (Roux, 2021). This information has been paraphrased by GES to remove references to attachments not included in this report.

Roux Associates (Roux) submitted a Remedial Investigation Report and a Feasibility Study (RI/FS) to DEP in 2021, which were accepted by DEP. The RI/FS identified the Site COCs to include compounds related to historical manufacturing operations at the Site. Specifically, the RI/FS COCs for the Site included CVOCs and inorganics (metals and fluoride). The primary source areas for CVOCs were identified in the RI/FS as the former Building 8 vapor degreaser area (VDA), former drum storage area 3 outside Building 8, and the former Building 5 VDA. The source areas for inorganics (metals and fluoride) were identified in the RI/FS to include, among other areas, the area east of Building 8, an area south of the eastern portion of Building 8, and an area south of the central portion of Building 5. Additionally, arsenic, nickel, and vanadium were detected at concentrations above the DEP MSCs for a Residential Area (0-15 feet) in soil samples collected across the Site as part of the RI/FS.

In 2021 and 2022, Roux conducted additional investigation activities to complete soil delineation, refine the COC list for the Site, and evaluate PFAS in groundwater and surface water. These activities involved collection of soil samples from select treatment areas previously identified by GES in the 2020 Remedial Alternatives Analysis (RAA) (GES, 2020) and in the 2020 Technology Assessment Memorandum (TAM) (GES, 2020). Roux identified the treatment areas as Areas of Concern (AOCs) in their documentation. The locations of the GES-identified treatment areas are identified on **Figure 3**. The soil samples were analyzed for total chromium, hexavalent chromium,



nickel, and fluoride. The results of this sampling concluded that the hexavalent chromium was not detected at concentrations above DEP medium specific concentrations (MSCs). However, fluoride was detected at concentrations above the DEP MSCs in multiple locations. Also, a partial round of groundwater samples was collected from a subset of the wells of the monitoring well network and analyzed for PFAS. It was determined that select PFAS compounds were detected at concentrations above the DEP MSCs established at that time. Soil and groundwater PFAS MSCs have become more stringent since the Roux investigation and new soil standards are currently in the rulemaking process. As a result of the additional investigation activities conducted by Roux, DEP updated the COC list for the Site to include PFAS in addition to the originally defined list presented in the RI/FS. Additionally, in its September 2022 Statement of Decision (SOD) for the Site, DEP determined that further delineation of fluoride in soils and of PFAS in soils and groundwater was needed.

3 Soil Investigation Activities

This section describes soil investigation activities that were conducted by GES at the Site from December 2025 through March 2026 to: evaluate PFAS and fluoride in Site soil; and to complete a limited background soil investigation for select inorganics, including total metals and fluoride, and PFAS at the Site.

3.1 Site Preparation

On December 22 and 23, 2025, prior to the soil sampling activities, Odyssey Environmental Services, Inc. (Odyssey) of Dauphin, Pennsylvania completed brush clearing activities using a skid steer with a brush hog attachment and hand tools to allow safe and easy access to all of the planned investigation locations. Brush clearing activities included removal of the shrubs/trees and cutting vegetation to allow access to the area west of the Village Way cul-de-sac, the area near the former cesspool, and along the eastern end of Building 8. All vegetative debris was left onsite in a centralized location that would not affect pre-design investigation activities. Odyssey also procured and delivered materials for construction of a decontamination pad.

On February 2, 2026, Eichelberger's, of Mechanicsburg, Pennsylvania mobilized to the Site to begin clearing excessive amounts of snow that had accumulated in the investigation areas. A skid steer was utilized as a plow to clear paths to the building and proposed boring locations. Snow clearing activities then continued in tandem with drilling activities until all locations could be safely accessed.

Prior to initiating subsurface work, the Pennsylvania One Call System (POCS) was utilized to request location of underground lines within the project area to satisfy requirements of the Underground Utility Line Protection Law, Pennsylvania Act 287 of 1974, amended by Act 50 of 2017.

3.2 PFAS and Fluoride Data Gap Soil Sampling

From February 3 through March 6, 2026, GES mobilized to the Site to oversee the advancement of 90 soil borings to investigate concentrations of PFAS (42 locations), fluoride (39 locations) or both (9 locations) in the following areas of the Site as shown in **Figure 4**:

- Fluoride near the former cesspool area (9 locations)
- Fluoride near the acid rinsewater handling/spill area at the eastern end of Building 8 (34 locations)
- PFAS in the former pipe drawing and vapor degreasing areas in Building 8 (39 locations)
- PFAS and/or fluoride in AOCs identified in the GES TAM as shown on **Figure 3**, including:
 - GES AOC 1 – Two (2) Fluoride samples
 - GES AOC 2 – One (1) PFAS sample
 - GES AOC 3 – Two (2) PFAS samples



- GES AOC 4 – One (1) PFAS sample / One (1) Fluoride sample
 - GES AOC 7 – Two (2) PFAS samples
 - GES AOC 8 – One (1) PFAS sample
 - GES AOC 9 – Two (2) PFAS samples / Two (2) Fluoride samples
 - GES AOC 10 – One (1) PFAS sample
- Volatile organic compound (VOC) samples were also collected from soil boring locations based on field observations (i.e., elevated PID readings and visual impacts) to provide additional information for the upcoming Pre-Design Investigation (PDI) activities.
 - Note that proposed borings in GES AOC 5 and 6 were eliminated due to safety concerns within Building 5.

GES retained Pennsylvania-licensed driller Eichelberger's to complete the soil borings. A Geoprobe® Model 7822DT was utilized to advance the soil borings via direct push methodologies. Prior to soil boring advancement, each location was hand cleared to five (5) feet below ground surface (bgs) with a hand auger and/or vacuum excavation methodology.

The soil borings were advanced to approximately 20 feet bgs or to bedrock refusal, whichever came first. During the advancement of each boring, soil cores were collected continuously within each soil boring location for lithologic evaluation and sampling. The borings were logged for lithology and screened using a photoionization detector (PID) with an 11.7 eV lamp. The composition, color, texture, and moisture content of the soil were monitored as it was recovered and recorded on a subsurface log. Additionally, for cores that were to be sampled for fluoride, each one-foot interval of soil was field-screened utilizing X-Ray Fluorescence (XRF) technology to evaluate the presence/absence of metals, which may have been released during the acid rinse process. These readings were also recorded on the subsurface logs for cores where this analysis was conducted. Copies of the soil boring logs are provided in **Appendix A**.

At each soil sampling location, soil samples for laboratory analysis were collected in the following order: VOCs first (if collected from same interval), PFAS second, metals third, and fluoride last. The samples were obtained directly from the acetate sleeves or hand auger, placed into the appropriate laboratory-supplied sample containers, chilled, and processed for shipment to the laboratory. If multiple bottles were required for a particular analytical method, all bottles designated for that particular analytical method were filled sequentially before bottles designated for the next analysis were filled (e.g., all VOC bottles were filled before filling PFAS bottles). If a duplicate sample was collected at a location, all bottles designated for a particular analysis for both the primary and duplicated samples were filled sequentially before the bottles for another analysis were filled. See **Sections 4.1 and 4.2** below for analysis results.

The fluoride delineation borings were sampled from: the 0-2 foot surface soil interval; and the subsurface soil interval with the highest field screening results via XRF, or the soil/bedrock interface if no impacts were identified via XRF screening. The PFAS investigation soil boring locations were sampled from the depth of historically identified impacts in previous close-proximity

sampling locations and from the soil/water interface or soil/bedrock interface, whichever was encountered first.

Approximately 17% of the soil boring locations included collection of a saturated soil sample for analysis. These locations were selected based on field observation (i.e., visual impacts and/or elevated PID readings). Analytical data from these soil samples will be used to characterize saturated soil quality as saturated soils are expected to be mixed and treated as part of the planned remediation activities.

The locations of the PFAS and fluoride samples collected from the soil borings in this data gap pre-design investigation relative to the GES-defined AOCs are shown in **Figure 4**. These samples were collected from the same boring location, when possible, with the exception of individual PFAS boring locations within GES AOCs 2, 8, and 10. The purpose of these samples was to evaluate if any PFAS or fluoride impacts were collocated with known VOC and/or inorganic impacted areas.

QA/QC samples were collected in accordance with Table 7 of the approved Sampling Analysis Plan and Quality Assurance Project Plan (SAP-QAPP) and included one duplicate sample, one field blank, and one equipment blank per every 20 samples or fraction thereof. One trip blank per day, per cooler with VOC samples was also submitted.

The soil samples were packed in a cooler on ice to maintain a temperature of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and were shipped under proper chain-of custody procedures to Eurofins Lancaster Laboratories Environmental (ELLE) of Lancaster, PA for standard turn-around time (TAT) analyses.

In total, 170 soil samples (37 surface, 123 unsaturated subsurface, and 16 saturated subsurface soil samples, including duplicate samples) were collected during the data gap pre-design investigation. Soil samples (108 including duplicates) from the fluoride data gap pre-design analysis investigation areas were submitted for fluoride analysis via EPA Method 9056A. Soil samples (94 including duplicates) from the PFAS data gap pre-design investigation areas were analyzed for PFAS via EPA Method 1633A. Although the primary purpose of the soil data gap pre-design investigation was to delineate fluoride and PFAS in soils, 13 samples from the data gap pre-design investigation soil samples were also submitted for laboratory analysis of target compound list (TCL) volatile organic compounds (VOCs) (including trichloroethene (TCE) and tetrachloroethene (PCE) and all daughter products) via EPA Method 8260D. These locations were based on field observations (i.e., if staining was observed or an elevated PID reading was measured), and were collected to evaluate if historical soil concentrations of VOCs had remained stable or decreased, or if any locations outside the previously known VOC impacted areas were present.

The soil boring locations for the data gap investigation activities are shown on **Figure 4**. Soil analytical data results are summarized in **Tables 1A (VOCs), 1B (PFAS), and 1C (Fluoride)**.

3.3 Limited Background Soil Sampling

The limited background soil investigation was conducted near the southern boundary of the source property where no known activities related to the Site operations occurred. On March 5, 2026, GES completed oversight of the advancement of four (4) soil borings to depths ranging from nine (9) to 14 feet bgs to collect soil samples that are believed to be representative of background conditions. The limited background investigation soil borings were logged for lithology and screened using a PID with an 11.7 eV lamp. The composition, color, texture, and moisture content of the soil were recorded on a subsurface log. Additionally, for cores that were to be sampled for fluoride and metals, each one-foot interval of soil was field-screened utilizing XRF technology to evaluate the presence/absence of metals. These readings were also recorded on the subsurface logs for cores where this analysis was conducted. Copies of the soil boring logs for the background soil locations are provided in **Appendix A**.

A total of nine (9) soil samples (including a duplicate sample) were collected during the limited background investigation. This limited background investigation was not planned or conducted to meet the requirements to calculate applicable Act 2 background concentrations. Each sample was submitted for laboratory analysis of total metals, including arsenic, manganese, and nickel, via EPA Method 6020B, fluoride via EPA Method 9056A, and PFAS via EPA Method 1633A.

The locations of the background borings are depicted on **Figure 5**. Soil analytical data results are summarized in **Tables 1B (PFAS), 1C (Fluoride), and 1D (Metals)**.

3.4 Work Plan Deviations

Due to snow accumulation, access issues, and health and safety concerns regarding the structural integrity of Building 5, multiple proposed boring locations could either not be drilled or were offset to other locations where they could be advanced.

The following proposed locations were eliminated from the sampling plan:

- DG-FL-32: Excessive perched water under concrete slab did not allow safe advancement
- DG-FL-41: Originally planned inside Building 5
- DG-FL-42: Originally planned inside Building 5
- DG-FL-43: Originally planned inside Building 5
- DG-PF/FL-07: Originally planned inside Building 5
- DG-PF/FL-10: Originally planned inside Building 5
- DG-PF/FL-12: Originally planned between Building 5 and Building 8

The following proposed locations were relocated outside Building 5:

- DG-FL-39: Originally planned inside Building 5; relocated outside former pickle house (northwest corner of former cesspool area)
- DG-FL-40: Originally planned inside Building 5; relocated along southern wall of Building 5

Other than the specific eliminated or relocated borings identified above, all other borings were installed at their proposed locations or within a few feet of their proposed locations (due to slight adjustments to avoid subsurface piping or reinforced concrete).

During the planning for this investigation, an estimated 20% of soil boring locations were anticipated to have saturated soil samples collected; however, some saturated samples were planned to be collected from the soil borings that were eliminated in Building 5. Therefore, approximately 17% of locations had saturated soil samples collected.

3.5 IDW Management

Direct-push rods, drilling equipment, the electronic oil-water interface probe, and non-dedicated sampling equipment were decontaminated prior to initial use and before each re-use. When non-dedicated sampling equipment was used, a daily field blank, consisting of deionized PFAS-free water that had been run through or poured over the cleaned sample collection equipment, was collected at the end of each day to determine if cleaning procedures were effective and adequate.

Soil cuttings, used PPE (e.g., disposable gloves), disposable equipment (e.g., plastic baggies), and disposable sampling materials were containerized in 55-gallon drums, properly labeled with the type of waste and date of accumulation, sealed and temporarily staged in the controlled work zone to minimize risk of contact by the general public until each waste stream could be characterized and transported off-site for proper disposal.

4 Summary of Pre-Design Data Gap Soil Investigation Analytical Results

This section presents the analytical results for the soil samples that were collected as part of the soil Pre-Design Data Gap Investigation sampling activities described above.

Surface soil, unsaturated subsurface soil, and saturated subsurface soil samples were collected and submitted for laboratory analysis during these sampling activities. Soil laboratory analytical data were evaluated using the PA Act 2 Soil to Groundwater Values for Unsaturated/Saturated Soil in a Residential, Used Aquifer and the PA Act 2 Residential Direct Contact Numeric Values for Surface Soil (0-15 feet). Comparison of the soil analytical data to the applicable PA Act 2 Medium Specific Concentrations (MSC) are presented in **Tables 1A (VOCs), 1B (PFAS), 1C (Fluoride) and 1D (Metals)**. The soil laboratory analytical reports and chain-of-custody documentation are included in **Appendix E**.

For unsaturated soils, the applicable PA Act 2 MSCs were determined to be the lower value of the PA Act 2 Soil to Groundwater Pathway Values (which is the higher of the Generic Soil Generic Values versus the 100x Groundwater MSC) and the PA Act 2 Residential Direct Contact Numeric Values. For the saturated soil samples, only the PA Act 2 Soil to Groundwater MSCs apply. If the 100x Groundwater MSC value is higher, then that value applies to the saturated soil; however, if the Generic Value is higher, then 1/10th of the Generic Value is then selected as the saturated

soil MSC. Please note that the PFAS analytical results are compared to the proposed MSCs currently in the rulemaking process.

Observations that can be made from these data for the fluoride and PFAS data gap investigation/supplemental VOC sampling and the limited background soil investigation sampling are summarized in **Section 4.1 and 4.2**. Additionally, the results of the quality control sampling are also presented in **Section 4.3**.

4.1 Soil Data Gap Pre-Design Investigation

A comparison of the laboratory analytical results to the applicable PA Act 2 Residential MSCs for the soil data gap pre-design investigation samples showed the following.

- PFAS compounds were not detected at concentrations above the applicable proposed PA Act 2 Residential MSC in any unsaturated or saturated soil samples. Although PFHxS was not detected at concentrations above the laboratory method detection limit (MDL) for any sample, the laboratory RL exceeded the applicable proposed PA Act 2 Residential MSC.
- Fluoride was not detected at concentrations above the applicable PA Act 2 Residential MSC in any unsaturated or saturated soil samples.
- VOCs were detected at concentrations above the applicable PA Act 2 Residential MSC in unsaturated subsurface soil samples:
 - 1,1,1-Trichloroethane (one sample)
 - 1,1-Dichloroethane (one sample)
 - Note: 1,1-Dichloroethane was not identified as a soil COC in the 2022 SOD.
 - cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene) (two samples)
 - Tetrachloroethene (PCE) (two samples)
 - Trichloroethene (TCE) (four samples)
- Please note that the limited VOC soil sampling conducted during this investigation was not intended to delineate the current extent of VOC contaminated soil.

Figures showing PFAS, fluoride, and VOC distributions within the data gap pre-design investigation analysis areas are included as **Figures 6 through 8**.

4.2 Background Soil Investigation Soil Sampling Results

A comparison of the laboratory analytical results for the limited background soil investigation samples to the applicable Residential MSCs showed the following:

- Fluoride was not detected at concentrations above the applicable PA Act 2 Residential MSC in any unsaturated subsurface soil sample in the limited background study
- PFAS compounds were not detected at concentrations above the applicable PA Act 2 Residential MSC in any unsaturated subsurface soil sample in the limited background

- study. Although Perfluorohexanesulfonic acid (PFHxS) was not detected at concentrations above the laboratory reporting limit (RL) for any sample, the laboratory RL and method detection limit (MDL) exceeded the proposed applicable PA Act 2 Residential MSC.
- Metals were detected at concentrations above the applicable PA Act 2 Residential MSC in unsaturated subsurface soil samples in the limited background study, including:
 - Arsenic (one sample)
 - Cobalt (one sample and duplicate sample from same location)
 - Manganese (one sample)
 - The following metals listed as soil COCs were detected at concentrations below the applicable PA Act 2 Residential MSC:
 - Antimony
 - Lead
 - Nickel
 - Thallium
 - Vanadium

Figures showing PFAs, fluoride, and metals exceedances within the limited background investigation area are included as **Figures 9** through **14**.

4.3 Quality Assurance/Quality Control

QA/QC samples were collected as discussed in **Section 3**. A summary of the QA/QC sample data evaluation is provided below. The compounds detected in the QA/QC samples are common laboratory contaminants.

Soil - VOCs

- Acetone, Chloroform, and methylene chloride were detected at concentrations below the applicable Residential MSC in the aqueous Equipment Blank QA/QC samples.
- Acetone and chloroform were also detected at concentrations below the applicable Residential MSC in the aqueous Field Blank QA/QC samples.
- 1,2-Dibromo-3-chloropropane (DBCP) and ethylene dibromide (EDB) were not detected at concentrations above the laboratory RL; however, the laboratory RLs exceeded the applicable Residential MSC in all the aqueous QA/QC samples. Note the DBCP is not a COC at the Site.

Soil - Fluoride

- Fluoride was not detected at concentrations above the laboratory RL in the aqueous QA/QC samples.

Soil - PFAS

- PFAS compounds were not detected at concentrations above the laboratory RL in the aqueous QA/QC samples.

Soil - Metals

Metals were not detected at concentrations above the laboratory RL in the aqueous QA/QC samples.

5 Investigation Derived Waste Disposal

Upon completion of site characterization activities, solid and liquid samples were collected for the appropriate analyses in accordance with the recommended disposal facility's requirements and any applicable municipal or regulatory agency requirements to determine waste disposition.

The waste classification samples were submitted to ELLE for analysis to determine appropriate waste classification and handling requirements. All waste classification and handling activities were conducted in accordance with DEP Title 25 hazardous and residual waste regulations, including the requirements of 25 Pa. Code, Articles VII, Chapters 260a through 270a (DEP, 2025) and 25 Pa. Code, Article IX, Chapter 287 (DEP, 2025). ELLE is accredited by the Pennsylvania Bureau of Laboratories, Laboratory Accreditation Program (LAP), for all analytical parameters, methods, and technologies used per 25 Pa. Code, Chapter 252 (DEP, 2025).

Based on the waste classification analytical results, the bidding waste contractors indicated that the waste would meet non-hazardous classification requirements. Pending approval of the recommended subcontractor and disposal facility, the waste will be removed from the Site and properly disposed.

6 Conclusions

The following conclusions can be drawn based on review of the soil data gap pre-design investigation analytical results:

- Fluoride was not detected at concentrations above the PA Act 2 Residential MSC in any unsaturated surface, unsaturated subsurface, or saturated subsurface soil samples during the data gap pre-design investigation. Based upon prior soil characterization performed by Roux, fluoride remains a COC in soil.
- Analyzed PFAS compounds were not detected at concentrations above the current or proposed PA Act 2 Residential MSC in unsaturated subsurface or saturated subsurface soil samples during the data gap pre-design investigation. Note that PFHxS was not detected, but the laboratory RL exceeded the proposed PA Act 2 Residential MSC in all samples.
- Arsenic, cobalt, and manganese exceeded PA Act 2 Residential MSC in the limited background unsaturated subsurface soil samples during the data gap pre-design investigation; however, all other metals in these soil samples were detected at concentrations below the PA Act 2 Residential MSC.



7 Recommendations

Based on the conclusions listed above GES recommends the following:

- No additional data gap pre-design PFAS or fluoride investigation activities are recommended related to soil at the Site, except for installation of eliminated boring locations when Building 5 is deemed safe for work.
- Additional VOC delineation for soil contamination is recommended as part of the OU1 (Operable Unit 1) Remedial Design Investigation (RDI) to further evaluate extent of impacts within AOC 1, 4, 6, and 9. (See **Figure 3.**)
- Additional delineation for soil contamination during the OU1 RDI is recommended in AOCs impacted by inorganic contaminants (including fluoride) to determine the extent of soil contamination in each treatment area.
- During the OU1 RDI, further assessment and/or delineation of Site soil COCs around BKG-1 is recommended.

References

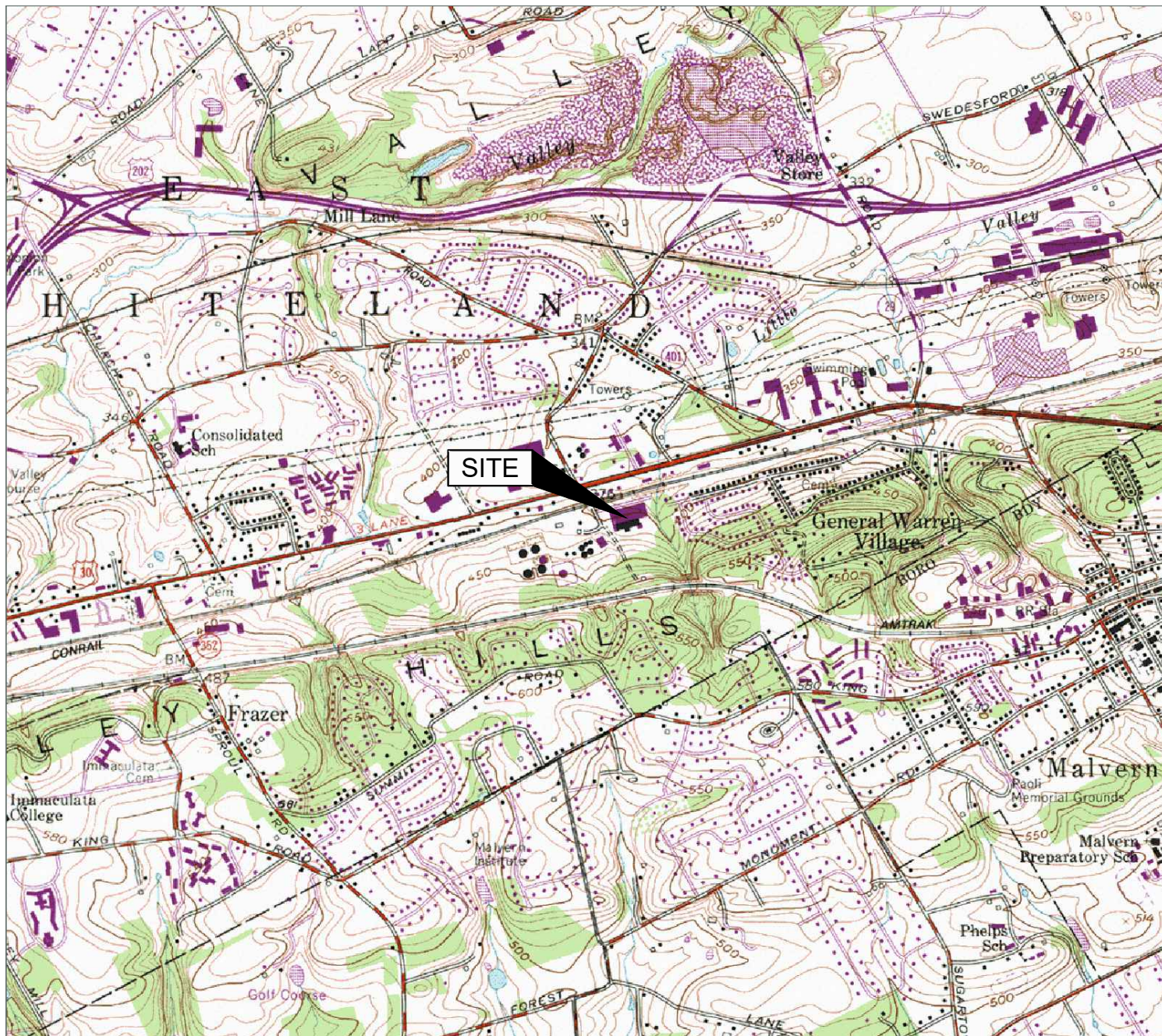
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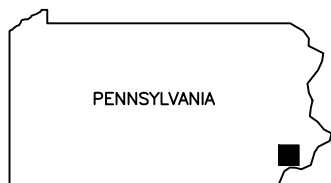
Figures



Figure 1 – Site Location Map



Source:
USGS 7.5 Minute Series
Topographic Quadrangle, 1966 (1983)
Malvern, Pennsylvania
Contour Interval = 10'



QUADRANGLE LOCATION

Site Location Map

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
A.G.
Approved
D.N.G.

Date
10/13/25
Figure
1



Scale In Feet

0 2,000



Groundwater & Environmental Services, Inc.



Figure 2 – Source Property Layout



SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

Source Property Layout

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
D.Y.
Approved
T.F.U.

Date
06/26/26
Figure
2



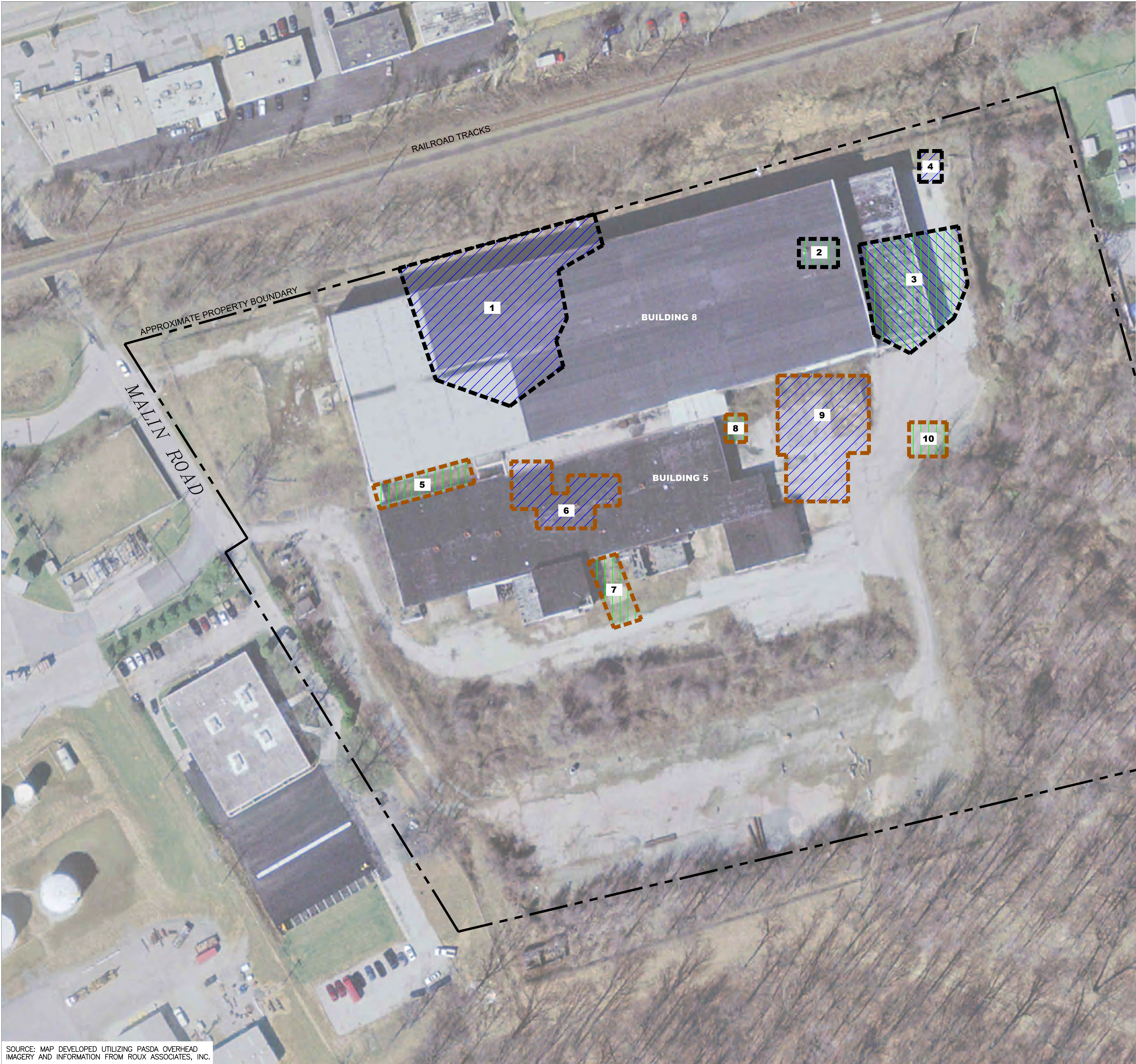
Scale In Feet
0 30 60



Groundwater & Environmental Services, Inc.



Figure 3 – Targeted Treatment Area (GES AOC) Location Map



LEGEND

BLACK OUTLINE	UNSATURATED OVERBURDEN = 0-6 FEET BGS SATURATED OVERBURDEN = 6-12 FEET BGS TOP OF BEDROCK = 12 FEET BGS
ORANGE OUTLINE	UNSATURATED OVERBURDEN = 0-12 FEET BGS SATURATED OVERBURDEN = 12-26 FEET BGS TOP OF BEDROCK = 26 FEET BGS
	VOCs ARE THE PRIMARY DRIVER
	INORGANICS ARE THE PRIMARY DRIVER
	VOCs AND INORGANICS ARE THE PRIMARY DRIVER
BGS	BELOW GRADE SURFACE
VOCs	VOLATILE ORGANIC COMPOUNDS

NOTES:

1) THE TARGETED TREATMENT AREAS ARE APPROXIMATE AND BASED ON REMEDIAL INVESTIGATIONS BY OTHERS. ADDITIONAL SOIL SAMPLING MAY NEED TO BE CONDUCTED DURING PRE-DESIGN ACTIVITIES TO CONFIRM TREATMENT AREA BOUNDARIES.

2) PINNACLED BEDROCK IS PRESENT AT THE PROPERTY AND THEREFORE THE DEPTH TO BEDROCK IS HIGHLY VARIABLE. THE TOP OF BEDROCK IN EACH AREA REPRESENTS AN ESTIMATED AVERAGE IN THE IMMEDIATE AREA.

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

Target Treatment Area (GES AOC)
Location Map

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
B.A.H.
Approved
D.N.G.

Scale In Feet
0 30 60

Groundwater & Environmental Services, Inc.

Date
10/31/25
Figure
3



Figure 4 – Soil Sample Location Map

N:\Graphics\Graphics\0200-Exton\PADEP-GTAC-IRRSC\GTAC Bishop Tube\1 South Malin Rd SM.dwg, B(SM 60), TPeters



LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- HISTORIC SOIL SAMPLE
- SOIL BORING (FLUORIDE)
- SOIL BORING (PFAS)
- SOIL BORING (PFAS/FLUORIDE)
- SOIL BORING (PROPOSED NOT DRILLED)
- NOVEMBER 2020 GES AOC (APPROXIMATE)
- PFAS PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES
- DEP DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIUM-SPECIFIC CONCENTRATIONS

Source:
Map prepared utilizing PASDA Overhead
imagery, and ROUX Associates, Inc.

Soil Sample Location Map

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
R.O.
Approved
T.F.U.



Date
06/17/26
Figure
4





Figure 5 – Background Soil Sample Location Map



LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- SOIL BORING (BACKGROUND)

Background Soil Sample Locations

Pennsylvania Dept of Environmental Protection
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1 South Malin Road
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Designed
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Approved
T.F.U.



Scale In Feet
0 30 60



Date
06/26/26
Figure
5

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

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Figure 6 –Soil Sample PFAS Detection Map (February/March 2026)

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LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- HISTORIC SOIL SAMPLE
- SOIL BORING (FLUORIDE)
- SOIL BORING (PFAS)
- SOIL BORING (PFAS/FLUORIDE)
- SOIL BORING (PROPOSED NOT DRILLED)
- NOVEMBER 2020 GES AOC (APPROXIMATE)
- PFAS PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES
- DEP DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIUM-SPECIFIC CONCENTRATIONS
- Concentration was detected for one or more PFAS compounds

- 1) Historical soil sample locations and soil borings for fluoride (DG-FL-# borings) were not analyzed for PFAS.
- 2) No PFAS concentrations were detected at levels exceeding current or proposed PA Act 2 MSCs. Note that the reporting limits for Perfluorohexanesulfonic acid (PFHxS) exceeded the proposed MSCs for Residential Direct Contact in Surface Soil (0-15 feet) for all samples.

Source:
Map prepared utilizing PASDA Overhead imagery, and ROUX Associates, Inc.

PFAS Soil Sample Detection Map (February/ March 2026)

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
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R.O.
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T.F.U.



Date
06/17/26
Figure
6

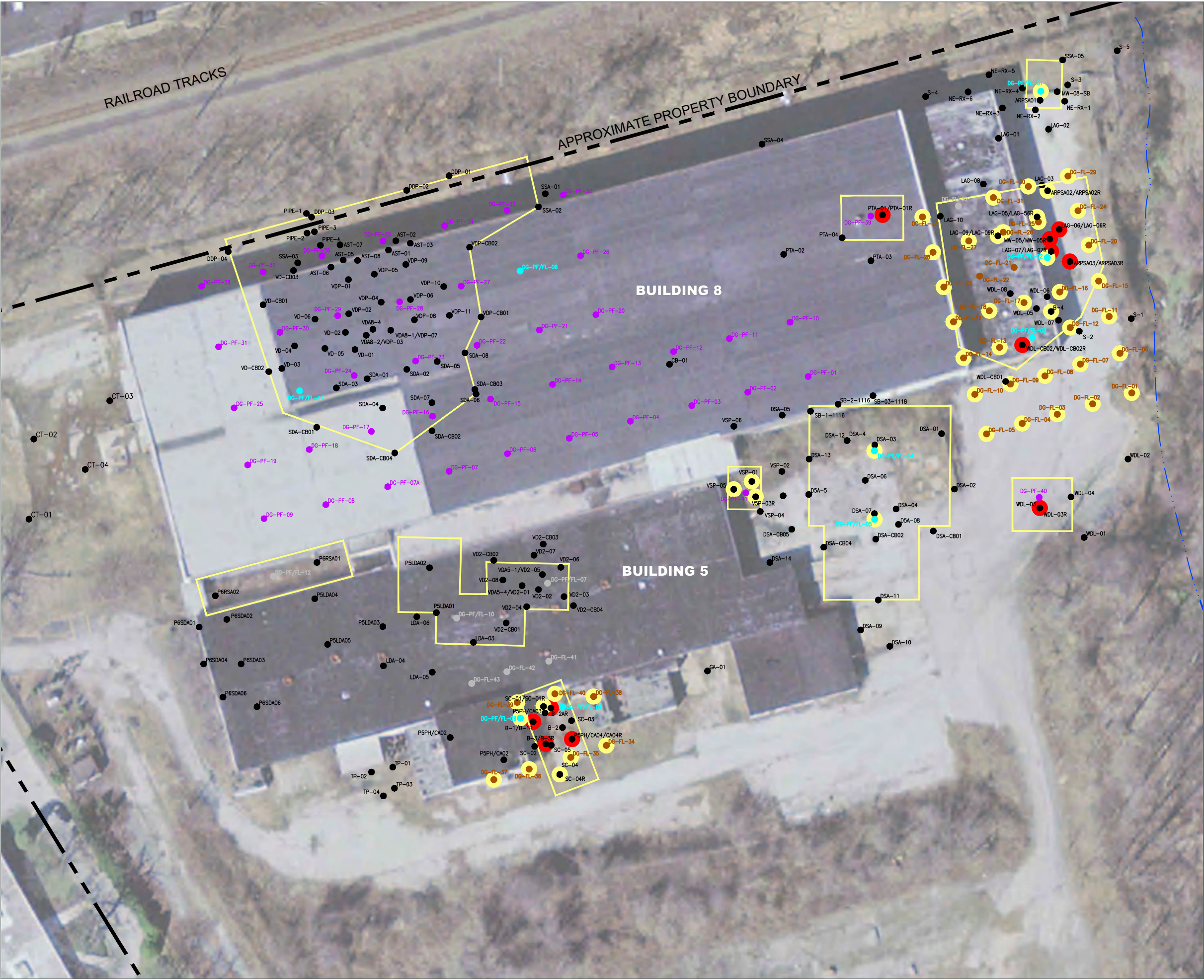
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Figure 7 –Soil Sample Fluoride Detection Map (February/March 2026)

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LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- HISTORIC SOIL SAMPLE
- SOIL BORING (FLUORIDE)
- SOIL BORING (PFAS)
- SOIL BORING (PFAS/FLUORIDE)
- SOIL BORING (PROPOSED NOT DRILLED)
- NOVEMBER 2020 GES AOC (APPROXIMATE)
- PFAS PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES
- DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIA SPECIFIC CONCENTRATION
- CONCENTRATION OF 2021 HISTORICAL SOIL SAMPLE OR 2026 SOIL BORING FOR FLUORIDE (DG-FL# BORINGS) SAMPLE WAS DETECTED BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR FLUORIDE
- CONCENTRATION OF 2021 HISTORICAL SOIL SAMPLE WAS DETECTED ABOVE THE DEP ACT 2 RESIDENTIAL MSCs FOR FLUORIDE

NOTES:

- 1) SOIL BORINGS FOR PFAS (DG-PF# BORINGS) WERE NOT ANALYZED FOR FLUORIDE.
- 2) CONCENTRATIONS OF HISTORICAL SOIL SAMPLES (PRIOR TO 2021) DETECTED ABOVE OR BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR FLUORIDE ARE NOT INCLUDED ON THIS FIGURE.

Source:
Map prepared utilizing PASDA Overhead imagery, and ROUX Associates, Inc.

Soil Sample Fluoride Detection Map
(February/March 2026)
Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

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T.P.
Designed
R.O.
Approved
T.F.U.



Date
06/17/26
Figure
7

Scale In Feet
0 60





**Figure 8 –Soil Sample Volatile Organic Compounds (VOCs) Detection Map
(February/March 2026)**

N:\Graphics\Graphics\0200-Exton\PADEP-GTAC-IRRRC\GTAC Bishop Tube\1 South Malin Rd SM.dwg, B(SM 60), TPeters



LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- HISTORIC SOIL SAMPLE
- SOIL BORING (FLUORIDE)
- SOIL BORING (PFAS)
- SOIL BORING (PFAS/FLUORIDE)
- SOIL BORING (PROPOSED NOT DRILLED)
- NOVEMBER 2020 GES AOC (APPROXIMATE)
- PFAS PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES
- DEP DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIUM-SPECIFIC CONCENTRATIONS
- Concentration of 2026 soil sample was detected below the DEP Act 2 Residential MSCs for one or more volatile organic compounds (VOCs).
- Laboratory reporting limits for 2026 soil boring sample exceed the DEP Act 2 Residential MSCs for one or more VOCs.
- Concentration of 2026 soil sample or historical soil sample was detected above the DEP Act 2 Residential MSCs for one or more VOCs

- 1) Only select 2026 soil boring samples were analyzed for VOCs.
- 2) Concentrations of historical soil samples detected below the DEP ACT 2 Residential MSCs for VOCs are not highlighted on this figure.

Source:
Map prepared utilizing PASDA Overhead imagery, and ROUX Associates, Inc.

Soil Sample Volatile Organic Compounds (VOCs) Exceedance Map
(February/March 2026)

Pennsylvania Dept of Environmental Protection
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Frazer, Pennsylvania

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T.F.U.



Date
06/17/26
Figure
8





Figure 9 – PFAS Background Soil Sample Detection Map (March 2026)



LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- SOIL BORING (BACKGROUND)
- DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIA SPECIFIC CONCENTRATION
- PFAS PERFLUROAKLYL AND POLYFLUROAKLYL SUBSTANCES
- CONCENTRATION WAS DETECTED FOR ONE OR MORE PFAS COMPOUNDS
- LABORATORY REPORTING LIMITS EXCEED THE DEP ACT 2 RESIDENTIAL MSCs FOR ONE OR MORE PFAS COMPOUNDS

NOTE:
1) NO PFAS CONCENTRATIONS WERE DETECTED AT LEVELS EXCEEDING CURRENT OR PROPOSED ACT 2 MSCs. NOTE THAT THE REPORTING LIMITS FOR PERFLUROHEXANESULFONIC ACID (PFHxS) EXCEEDING THE PROPOSED MSCs FOR RESIDENTIAL DIRECT CONTACT IN SURFACE SOIL (0-15 FEET) FOR ALL PFAS SAMPLES.

PFAS Background Soil Sample
Detection Map (March 2026)

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

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Designed
D.Y.
Approved
T.F.U.



Scale In Feet



Date
06/26/26
Figure
9

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.



Figure 10 – Fluoride Background Soil Sample Detection Map (March 2026)



- LEGEND**
- PROPERTY BOUNDARY (APPROXIMATE)
 - - - - - STREAM
 - SOIL BORING (BACKGROUND)
 - DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
 - MSC MEDIA SPECIFIC CONCENTRATION
 - CONCENTRATION WAS DETECTED BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR FLUORIDE

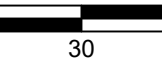
Fluoride Background Soil Sample
Detection Map
(March 2026)

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
D.Y.
Approved
T.F.U.



Scale In Feet



Date
06/26/26
Figure
10

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

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Figure 11 – Arsenic Background Soil Sample Exceedance Map (March 2026)



- LEGEND**
- PROPERTY BOUNDARY (APPROXIMATE)
 - - - - - STREAM
 - SOIL BORING (BACKGROUND)
 - DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
 - MSC MEDIA SPECIFIC CONCENTRATION
 - CONCENTRATION WAS DETECTED BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR ARSENIC
 - CONCENTRATION WAS DETECTED ABOVE THE DEP ACT 2 RESIDENTIAL MSCs FOR ARSENIC

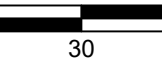
Arsenic Background Soil
Sample Exceedance Map
(March 2026)

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
D.Y.
Approved
T.F.U.



Scale In Feet



Date
06/26/26
Figure
11

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

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Figure 12 – Cobalt Background Soil Sample Exceedance Map (March 2026)



- LEGEND**
- PROPERTY BOUNDARY (APPROXIMATE)
 - - - - - STREAM
 - SOIL BORING (BACKGROUND)
 - DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
 - MSC MEDIA SPECIFIC CONCENTRATION
 - CONCENTRATION WAS DETECTED BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR COBALT
 - CONCENTRATION WAS DETECTED ABOVE THE DEP ACT 2 RESIDENTIAL MSCs FOR COBALT

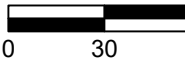
Cobalt Background Soil Sample
Exceedance Map
(March 2026)

Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
D.Y.
Approved
T.F.U.



Scale In Feet



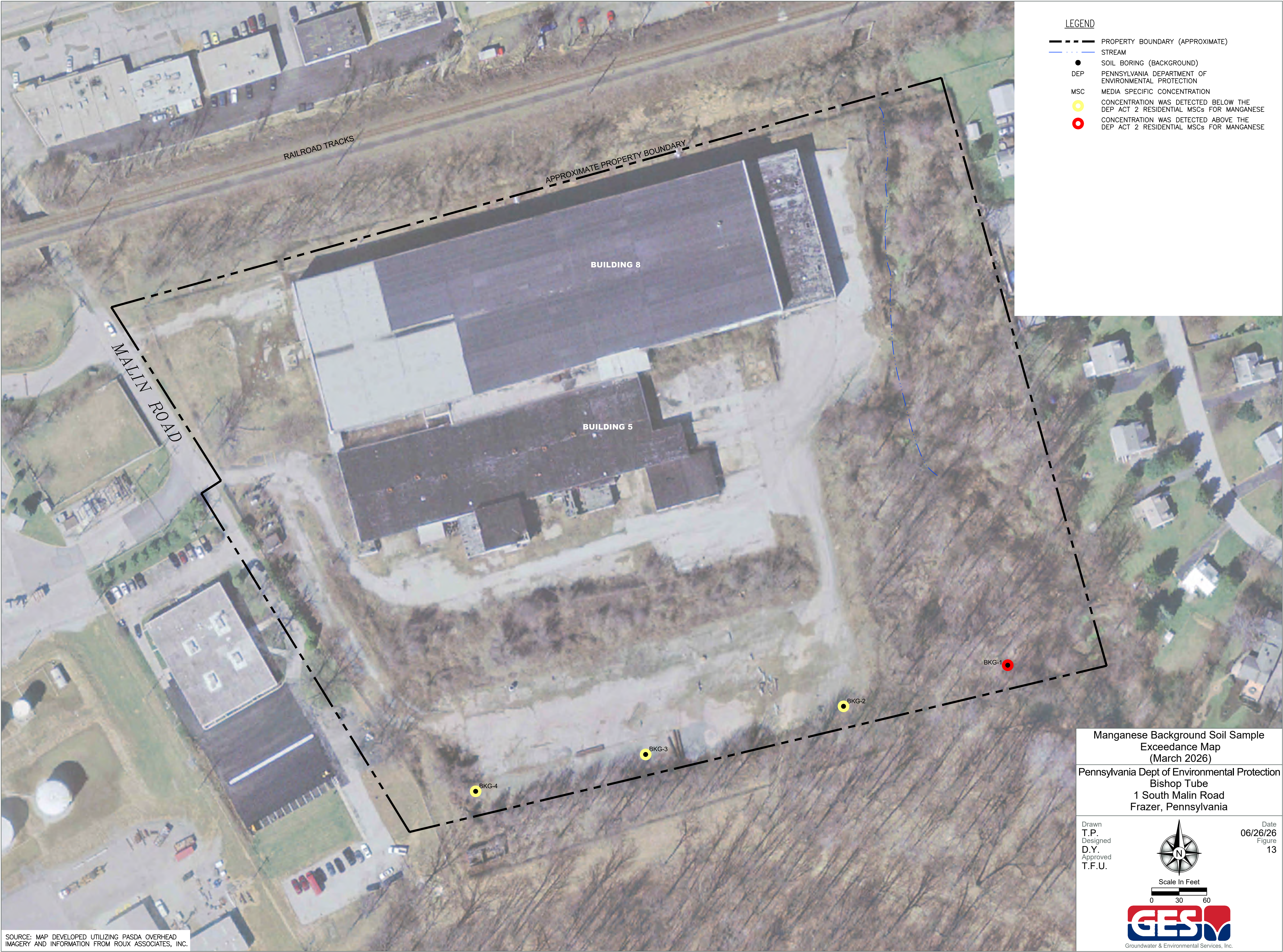
Date
06/26/26
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12

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

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Figure 13 – Manganese Background Soil Sample Exceedance Map (March 2026)



LEGEND

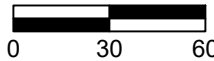
- PROPERTY BOUNDARY (APPROXIMATE)
- STREAM
- SOIL BORING (BACKGROUND)
- DEP PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
- MSC MEDIA SPECIFIC CONCENTRATION
- CONCENTRATION WAS DETECTED BELOW THE DEP ACT 2 RESIDENTIAL MSCs FOR MANGANESE
- CONCENTRATION WAS DETECTED ABOVE THE DEP ACT 2 RESIDENTIAL MSCs FOR MANGANESE

Manganese Background Soil Sample
Exceedance Map
(March 2026)
Pennsylvania Dept of Environmental Protection
Bishop Tube
1 South Malin Road
Frazer, Pennsylvania

Drawn
T.P.
Designed
D.Y.
Approved
T.F.U.



Scale In Feet



Date
06/26/26
Figure
13

SOURCE: MAP DEVELOPED UTILIZING PASDA OVERHEAD
IMAGERY AND INFORMATION FROM ROUX ASSOCIATES, INC.

N:\Graphics\Graphics\0200-Exon\PADEP-GTAC\HRBSC\GTAC\GTAC Bishop Tube\1 South Malin Rd SM.dwg, C:\SM 60\ TPeiers



Tables



Table 1A - Soil Analytical Data Summary: Volatile Organic Compounds

Table 1A

Soil Analytical Data Summary
Volatile Organic Compounds

Sampling Event	Sample ID	Depth (ft)	Sample Date	Soil Condition	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene (1,1-Dichloroethylene)	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene Dibromide, EDB)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene (p-Dichlorobenzene)	2-Butanone (Methyl ethyl ketone)	2-Hexanone (Methyl n-butyl ketone)
Matrix: Solid					(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PROPOSED DEP Soil to Groundwater Values for Unsaturated Soil in a Residential, Used Aquifer					20	0.084	0.5	3.1	0.7	27	0.02	0.005	60	0.5	0.5	61	10	400	6.3
PROPOSED DEP Soil to Groundwater Values for Saturated Soil in a Residential, Used Aquifer					20	0.084	0.5	3.1	0.7	7	0.02	0.005	60	0.5	0.5	60	7.5	400	6.3
PROPOSED DEP Residential Direct Contact Numeric Values Surface Soil (0-15 feet)					10,000	7.6	3.8	280	3,800	39	0.029	0.74	10,000*	17	76*	10,000	40	10,000	570
Data Gap Investigation - Surface and Subsurface Soil Samples - Feburary and March 2026	DG-FL-08 @ 9'-10'	9-10	2/27/2026	Unsaturated	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.71	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.71	ND<0.71
	DG-FL-13 @ 1'-2'	1-2	2/19/2026	Unsaturated	ND<0.0072	ND<0.0072	ND<0.0072	0.0088	ND<0.0072	ND<0.014	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	0.013 J	ND<0.014
	DG-FL-15 @ 4'-5'	4-5	3/2/2026	Unsaturated	24	ND<0.32	0.039 J	28	0.240 J	ND<0.63	ND<0.32	ND<0.32	0.056 J	0.056 J	ND<0.32	0.093 J	0.033 J	0.910	ND<0.63
	DG-FL-25 @ 29'-30'	29-30	2/26/2026	Saturated	ND<0.0061 *3	ND<0.0061 *3	ND<0.0061 *3	ND<0.0061 *3	0.0050 J,*3	0.021 *3	ND<0.0061 *3	ND<0.0061 *3	0.0054 J,*3	ND<0.0061 *3	ND<0.0061 *3	0.010 *3	ND<0.0061 *3	ND<0.012	ND<0.012 *3
	DG-FL-26 @ 1'-2'	1-2	2/17/2026	Unsaturated	ND<0.0055	ND<0.0055	ND<0.0055	0.0011 J	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.011	ND<0.011
	DG-FL-28 @ 4'-5'	4-5	2/17/2026	Unsaturated	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	0.0015 J	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.011	ND<0.011
	DG-FL-31 @ 0'-1'	0-1	2/18/2026	Unsaturated	0.0045 J	ND<0.0060	ND<0.0060	0.0042 J	ND<0.0060	ND<0.012	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.012	ND<0.012
	DG-PF-34 @ 7'-9'	7-9	2/18/2026	Unsaturated	0.0087	ND<0.0044	ND<0.0044	ND<0.0044	0.00071 J	ND<0.0088	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0088	ND<0.0088
	DG-PF/FL-01 @ 11'-14'	11-14	3/4/2026	Unsaturated	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0099	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0099	ND<0.0099
	DG-PF/FL-04 @ 19'-20'	19-20	3/4/2026	Unsaturated	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	0.0023 J	ND<0.011
	DG-PF/FL-05 @ 6.5'-7.5'	6.5-7.5	3/4/2026	Unsaturated	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.76	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.76	ND<0.76
	DG-PF/FL-08 @ 14'-15'	14-15	3/4/2026	Unsaturated	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.013	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	0.018	0.0051 J
	DG-PF/FL-11 @ 3'-4'	3-4	2/16/2026	Unsaturated	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.01	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	0.0025 J	ND<0.01
	DG-PF-22 @ 7'-8'	7-8	2/13/2026	Unsaturated	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.011	ND<0.011
	DG-PF-23 @ 7'-8'	7-8	2/13/2026	Unsaturated	4.9	ND<0.35	ND<0.35	0.092 J	0.11 J	ND<0.69	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.69	ND<0.69
	DG-PF-24 @ 13.5'-14.5	13.5-14.5	2/13/2026	Unsaturated	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0095	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	0.017	0.0028 J
	DG-PF-28 @ 4'-5'	4-5	2/6/2026	Unsaturated	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.58	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.58	ND<0.58
	DG-PF-36 @ 4'-5'	4-5	2/12/2026	Unsaturated	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	0.00080 J,FH	0.00086 J,FH	ND<0.0086	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0086	ND<0.0086 FH
Matrix: Aqueous					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
PROPOSED DEP Groundwater Statewide Health Standards (SHS) - Residential, Used Aquifer					200	4.3	5	160	7	70	0.2	0.05	600	5	5	600	75	4,000	260
Equipment Blanks	Equipment Blank #1	-	2/6/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0 ^c	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #5	-	2/12/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #6	-	2/13/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #7	-	2/16/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #8	-	2/17/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #9	-	2/18/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #10	-	2/19/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0 ^c
	Equipment Blank #13	-	2/26/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0 ^c	ND<1.0 ^c
	Equipment Blank #14	-	2/27/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
Field Blanks	Equipment Blank #16	-	3/2/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Equipment Blank #18	-	3/4/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Field Blank #1	-	2/12/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Field Blank #2	-	2/12/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Field Blank #4	-	2/18/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
Trip Blanks	Field Blank #5	-	2/19/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0 ^c
	Field Blank #7	-	3/3/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0 ^c	ND<1.0
	Trip Blank #1	-	2/6/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0 ^c	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Trip Blank #2	-	2/9/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0 ^c	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Trip Blank #3	-	2/10/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0
	Trip Blank #5	-	2/12/2026	-	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<1.0	ND<5.						

Table 1A

Soil Analytical Data Summary
Volatile Organic Compounds

Sampling Event	Sample ID	Depth (ft)	Sample Date	Soil Condition	4-Methyl-2-Pentanone (Methyl isobutyl ketone)	Acetone	Benzene	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (Methyl Chloride)	Cyclohexane	cis-1,2-Dichloroethane (cis-1,2-Dichloroethylene)	cis-1,3-Dichloropropene	Dibromochloromethane (Chlorodibromomethane)	
Matrix: Solid					(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
PROPOSED DEP Soil to Groundwater Values for Unsaturated Soil in a Residential, Used Aquifer					280	3,100	0.5	8	8	1	150	0.5	10	840*	8	3	1,300	7	0.65	8	
PROPOSED DEP Soil to Groundwater Values for Saturated Soil in a Residential, Used Aquifer					280	3,100	0.5	8	8	1	150	0.5	10	840*	8	3	1,300	7	0.65	8	
PROPOSED DEP Residential Direct Contact Numeric Values Surface Soil (0-15 feet)					10,000	10,000	57	12	400	95	10,000	75	950	10,000	19	250	10,000	440	110	220	
Data Gap Investigation - Surface and Subsurface Soil Samples - Feburary and March 2026	DG-FL-08 @ 9'-10'	9-10	2/27/2026	Unsaturated	ND<0.71	ND<1.4	ND<0.035	ND<0.35	ND<0.71	ND<0.35	0.046 J	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	
	DG-FL-13 @ 1'-2'	1-2	2/19/2026	Unsaturated	0.0035 J	0.097	ND<0.0072	ND<0.0072	ND<0.014	ND<0.0072	0.049	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	0.0012 J	ND<0.0072	ND<0.0072	
	DG-FL-15 @ 4'-5'	4-5	3/2/2026	Unsaturated	ND<0.63	ND<1.3 *1	ND<0.32	ND<0.32	ND<0.63	ND<0.32 *1	ND<0.32	ND<0.32 ^c	ND<0.32	0.16 J,*1	ND<0.32	ND<0.32 ^c	ND<0.32	4.6	ND<0.32	ND<0.32 ^c	
	DG-FL-25 @ 29'-30'	29-30	2/26/2026	Saturated	0.0058 J,*3	0.060	0.0042 J,*3	ND<0.0061 *3	ND<0.012*3	ND<0.0061 *3	0.0095 *3	ND<0.0061 *3	0.0016 J,*3	ND<0.0061 *3	ND<0.0061 *3	ND<0.0061 *3	ND<0.0061 *3	25	ND<0.0061 *3	ND<0.0061 *3	
	DG-FL-26 @ 1'-2'	1-2	2/17/2026	Unsaturated	ND<0.011	0.019 J	ND<0.0055	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	0.0043 J	ND<0.0055	ND<0.0055	
	DG-FL-28 @ 4'-5'	4-5	2/17/2026	Unsaturated	ND<0.011	0.016 J	ND<0.0055	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	0.024	ND<0.0055	ND<0.0055	
	DG-FL-31 @ 0'-1'	0-1	2/18/2026	Unsaturated	ND<0.012	0.0078 J	ND<0.0060	ND<0.0060	ND<0.012	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	0.0054 J	ND<0.0060	ND<0.0060	
	DG-PF-34 @ 7'-9'	7-9	2/18/2026	Unsaturated	ND<0.0088	0.020	ND<0.0044	ND<0.0044	ND<0.0088	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	0.00098 J	ND<0.0044	ND<0.0044	
	DG-PF/FL-01 @ 11'-14'	11-14	3/4/2026	Unsaturated	ND<0.0099	0.040 ^c	ND<0.0049	ND<0.0049	ND<0.0099	ND<0.0049	0.0085	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	0.0058	0.087	ND<0.0049	ND<0.0049
	DG-PF/FL-04 @ 19'-20'	19-20	3/4/2026	Unsaturated	ND<0.011	0.033	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	0.0017 J	ND<0.0057	ND<0.0057
	DG-PF/FL-05 @ 6.5'-7.5'	6.5-7.5	3/4/2026	Unsaturated	ND<0.76	ND<1.5	ND<0.38	ND<0.38	ND<0.76	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38 ^c	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38
	DG-PF/FL-08 @ 14'-15'	14-15	3/4/2026	Unsaturated	ND<0.013	0.096 ^c	ND<0.0065	ND<0.0065	ND<0.013	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065
	DG-PF/FL-11 @ 3'-4'	3-4	2/16/2026	Unsaturated	ND<0.01	0.022	ND<0.0052	ND<0.0052	ND<0.01	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052
	DG-PF-22 @ 7'-8'	7-8	2/13/2026	Unsaturated	ND<0.011	0.0093 J,B	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057 ^c	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057 ^c	ND<0.0057	ND<0.0057	ND<0.0057
	DG-PF-23 @ 7'-8'	7-8	2/13/2026	Unsaturated	ND<0.69	ND<1.4	ND<0.35	ND<0.35	ND<0.69 ^c	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	ND<0.35	13	ND<0.35	ND<0.35
	DG-PF-24 @ 13.5'-14.5	13.5-14.5	2/13/2026	Unsaturated	ND<0.0095	0.086 B	ND<0.0047	ND<0.0047	ND<0.0095	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047
	DG-PF-28 @ 4'-5'	4-5	2/6/2026	Unsaturated	ND<0.58	ND<1.2	ND<0.29	ND<0.29	ND<0.58 ^c	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	0.42	ND<0.29	ND<0.29
	DG-PF-36 @ 4'-5'	4-5	2/12/2026	Unsaturated	ND<0.0086 FH	0.017 B	ND<0.0043 FH	ND<0.0043 FH	ND<0.0086	ND<0.0043 FH	ND<0.0043	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	0.059 F2,FL,FH	ND<0.0043	ND<0.0043
Matrix: Aqueous					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
PROPOSED DEP Groundwater Statewide Health Standards (SHS) - Residential, Used Aquifer					7,800	88,000	5	80	80	10	6,200	5	100	88,000	80	30	53,000	70	27	80	
Equipment Blanks	Equipment Blank #1	-	2/6/2026	-	ND<10	3.8 J,*^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0 ^c	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.6	ND<2.0 ^c	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #5	-	2/12/2026	-	ND<10	1.7 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	0.79 J	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #6	-	2/13/2026	-	ND<10	2.5 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.3	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #7	-	2/16/2026	-	ND<10	2.2J,*^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0 c,*+	ND<1.0	ND<5.0 ^c	ND<1.0	ND<1.0	1.3	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #8	-	2/17/2026	-	ND<10	2.3 J,*^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0 c,*+	ND<1.0	ND<5.0 ^c	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #9	-	2/18/2026	-	ND<10	2.4 J,*^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0 c,*+	ND<1.0	ND<5.0 ^c	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #10	-	2/19/2026	-	ND<10	2.2 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.1	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #13	-	2/26/2026	-	ND<10 ^c	1.4 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.0	ND<2.0 ^c	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #14	-	2/27/2026	-	ND<10	ND<20	ND<1.0	ND<1.0	ND<4.0 ^c	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
Field Blanks	Equipment Blank #16	-	3/2/2026	-	ND<10	ND<20	ND<1.0	ND<1.0	ND<4.0 ^c	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Equipment Blank #18	-	3/4/2026	-	ND<10	2.6 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	0.84 J	ND<2.0 ^c	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Field Blank #1	-	2/12/2026	-	ND<10	2.6 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.3	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Field Blank #2	-	2/12/2026	-	ND<10	2.0 J	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	1.4	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Field Blank #4	-	2/18/2026	-	ND<10	1.5 J,*^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0 ^c,*+	ND<1.0	ND<5.0 ^c	ND<1.0	ND<1.0	1.1	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
Trip Blanks	Field Blank #5	-	2/19/2026	-	ND<10	ND<20	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	0.37 J	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	Field Blank #7	-	3/3/2026	-	ND<10	ND<20 ^c	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<5.0	ND<1.0	ND<1.0	ND<1.0	
	T																				

Table 1A

Soil Analytical Data Summary
Volatile Organic Compounds

					Dichlorodifluoromethane (Freon 12)	Ethylbenzene	Freon 113 (1,1,2-Trichloro-1,2,2- Trifluoroethane)	Isopropylbenzene (Cumene)	Methyl Acetate	Methylcyclohexane	Methylene Chloride (Dichloromethane)	Methyl tert-butyl ether (MTBE)	Naphthalene	Styrene	Tetrachloroethene (Tetrachloroethylene, PCE)	Toluene	Total Xylenes	trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	trans-1,3-Dichloropropene	Trichloroethene (Trichloroethylene, TCE)	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	Vinyl Chloride
Sampling Event	Sample ID	Depth (ft)	Sample Date	Soil Condition																		
Matrix: Solid					(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PROPOSED DEP Soil to Groundwater Values for Unsaturated Soil in a Residential, Used Aquifer					100	70	3,400	600	3,500	-	0.5	2	25	24	0.5	100	1,000	10	0.65	0.5	200	0.2
PROPOSED DEP Soil to Groundwater Values for Saturated Soil in a Residential, Used Aquifer					100	70	1,100	84	3,500	-	0.5	2	10	10	0.5	100	1,000	10	0.65	0.5	200	0.2
PROPOSED DEP Residential Direct Contact Numeric Values Surface Soil (0-15 feet)					1,900	180	10,000	7,600	10,000	-	1,300	1,700	13	10,000	760	10,000	1,900	760*	110	38	10,000	0.93
Data Gap Investigation - Surface and Subsurface Soil Samples - Feburary and March 2026	DG-FL-08 @ 9'-10'	9-10	2/27/2026	Unsaturated	ND<0.35	0.062 J	ND<0.71	ND<0.35	0.150 J	ND<0.35	ND<0.35	ND<0.35	NA	ND<0.35	1.4	ND<0.35	ND<0.35	ND<0.35	ND<0.35	0.610	ND<0.35	ND<0.35
	DG-FL-13 @ 1'-2'	1-2	2/19/2026	Unsaturated	ND<0.0072	ND<0.0072	ND<0.014	ND<0.0072	ND<0.0072	ND<0.0072 ^c	ND<0.0072	ND<0.0072	NA	ND<0.0072	ND<0.0072	0.0021 J	ND<0.014	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072	ND<0.0072
	DG-FL-15 @ 4'-5'	4-5	3/2/2026	Unsaturated	ND<0.32 ^c	ND<0.32	ND<0.63 ^c	0.04 J	1.2	ND<0.32 ^c	ND<0.32	ND<0.32	NA	ND<0.32	0.059 J	0.99	0.16 J	0.098 J	ND<0.32 ^c	0.89	ND<0.32	ND<0.32
	DG-FL-25 @ 29'-30'	29-30	2/26/2026	Saturated	ND<0.0061 ^*3	0.011 ^*3	ND<0.012 ^*3	0.0091 ^*3	ND<0.0061	0.0061 ^*3	ND<0.0061 ^*3	ND<0.0061 ^*3	NA	ND<0.0061 ^*3	ND<0.0061 ^*3	0.049 ^*3	0.036 ^*3	0.027 ^*3	ND<0.0061 ^*3	ND<0.0061 ^*3	ND<0.0061 ^*3	0.2 ^*3
	DG-FL-26 @ 1'-2'	1-2	2/17/2026	Unsaturated	ND<0.0055	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	NA	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	0.0067	ND<0.0055	ND<0.0055
	DG-FL-28 @ 4'-5'	4-5	2/17/2026	Unsaturated	ND<0.0055	ND<0.0055	ND<0.011	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.0055	NA	ND<0.0055	ND<0.0055	ND<0.0055	ND<0.011	0.0068	ND<0.0055	0.28	ND<0.0055	ND<0.0055
	DG-FL-31 @ 0'-1'	0-1	2/18/2026	Unsaturated	ND<0.0060	ND<0.0060	ND<0.012	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.0060	NA	ND<0.0060	ND<0.0060	ND<0.0060	ND<0.012	ND<0.0060	ND<0.0060	0.01	ND<0.0060	ND<0.0060
	DG-PF-34 @ 7'-9'	7-9	2/18/2026	Unsaturated	ND<0.0044	ND<0.0044	ND<0.0088	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0044	NA	ND<0.0044	ND<0.0044	ND<0.0044	ND<0.0088	ND<0.0044	ND<0.0044	0.0027 J	ND<0.0044	ND<0.0044
	DG-PF/FL-01 @ 11'-14'	11-14	3/4/2026	Unsaturated	ND<0.0049	ND<0.0049 ^c	ND<0.0099	0.0032 J	ND<0.0049	0.029	ND<0.0049	ND<0.0049	NA	ND<0.0049 ^c	ND<0.0049	0.026 ^c	0.0025 J, ^c	0.024	ND<0.0049	0.021	ND<0.0049	0.026
	DG-PF/FL-04 @ 19'-20'	19-20	3/4/2026	Unsaturated	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.0057	NA	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	0.0018 J	ND<0.0057	ND<0.0057
	DG-PF/FL-05 @ 6.5'-7.5'	6.5-7.5	3/4/2026	Unsaturated	ND<0.38	ND<0.38	ND<0.76	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	NA	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38	ND<0.38
	DG-PF/FL-08 @ 14'-15'	14-15	3/4/2026	Unsaturated	ND<0.0065	ND<0.0065 ^c	ND<0.013	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	NA	ND<0.0065 ^c	ND<0.0065	ND<0.0065 ^c	ND<0.013 ^c	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065	ND<0.0065
	DG-PF/FL-11 @ 3'-4'	3-4	2/16/2026	Unsaturated	ND<0.0052	ND<0.0052	ND<0.01	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	NA	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.01	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.0052
	DG-PF-22 @ 7'-8'	7-8	2/13/2026	Unsaturated	ND<0.0057 ^c	ND<0.0057	ND<0.011 ^c	ND<0.0057	ND<0.0057	ND<0.0057 ^c	ND<0.0057	ND<0.0057	NA	ND<0.0057	ND<0.0057	ND<0.0057	ND<0.011	ND<0.0057	ND<0.0057	0.12	ND<0.0057 ^c	ND<0.0057 ^c
	DG-PF-23 @ 7'-8'	7-8	2/13/2026	Unsaturated	ND<0.35	ND<0.35	ND<0.69	ND<0.35	0.073 J	ND<0.35	ND<0.35	ND<0.35	NA	ND<0.35	1.6	0.052 J	ND<0.0095	ND<0.35	ND<0.35	300	ND<0.35	ND<0.35
	DG-PF-24 @ 13.5'-14.5	13.5-14.5	2/13/2026	Unsaturated	ND<0.0047	ND<0.0047	ND<0.0095 ^c	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	NA	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	0.036	ND<0.0047	ND<0.0047
DG-PF-28 @ 4'-5'	4-5	2/6/2026	Unsaturated	ND<0.29	ND<0.29	ND<0.58	ND<0.29	ND<0.29 ^c	ND<0.29	ND<0.29	ND<0.29	NA	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	ND<0.29	2.6	ND<0.29	ND<0.29	
DG-PF-36 @ 4'-5'	4-5	2/12/2026	Unsaturated	ND<0.0043 FH	ND<0.0043 FH	ND<0.0086 ^c, FH	ND<0.0043 FH	ND<0.0043	ND<0.0043 FH	ND<0.0043 FH	ND<0.0043 FH	NA	ND<0.0043 FH	0.0016 J, FH	ND<0.0043 FH	ND<0.0086 FH	ND<0.0043 FH	ND<0.0043	0.050 F2, FL, FH	ND<0.0043	0.0019 J, FH	
Matrix: Aqueous					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
PROPOSED DEP Groundwater Statewide Health Standards (SHS) - Residential, Used Aquifer					1,000	700	44,000	3,500	97,000	-	5	20	100	100	5	1,000	10,000	100	27	5	2,000	2
Equipment Blanks	Equipment Blank #1	-	2/6/2026	-	ND<1.0 ^c	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0 ^c
	Equipment Blank #5	-	2/12/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	1.3	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #6	-	2/13/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	0.69 J	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #7	-	2/16/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #8	-	2/17/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	1.2	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #9	-	2/18/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	0.34 J	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #10	-	2/19/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #13	-	2/26/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	0.31 J	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #14	-	2/27/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Equipment Blank #16	-	3/2/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Field Blanks	Equipment Blank #18	-	3/4/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0 ^c	ND<5.0	1.2	ND<1.0	NA	ND<5.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0 ^c
	Field Blank #1	-	2/12/2026	-	ND<1.0	ND<1.0	ND<10	ND<5.0	ND<5.0	ND<5.0	ND<1.0	ND<1.0	NA	ND<5.0	ND<							



**Table 1B – Soil Analytical Summary Data Summary: Perfluoroalkyl and Polyfluoroalkyl
Substances (PFAS)**

Table 1B

Soil Analytical Data Summary:
Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

[illegible]

Notes:	Bolded results indicate a detection
DEP: Pennsylvania Department of Environmental Protection	DEP Act 2 Standards were converted to ng/L from ng/Lg due to laboratory reporting all data in ng/L
ft: feet	n+PFRS and HFO-DAN not analyzed under EPA 1631A. These analytes are only reported as addition species in the instrumentation for these compounds
ng/L: nanograms per gram	ND: Indicates analysis was performed for the test but it was not detected. The sample reporting limit is reported.
ng/Lg: nanograms per liter	C: Continuing calibration verification (CCV) response is outside the acceptance limits
MSMD: Multi-Spate/Matrix Spate Recovery	C: Estimated value. Result < reporting limit (RL) and method detection limit (MDL)
NA: Not Analyzed	1: Ion ratio outside
Concentration was detected below the proposed DEP Act 2 Standard	2: Results biased high
Concentration exceeds the indicated proposed DEP Act 2 Standard	F2: MSMD RPD exceeds control limits
Laboratory reporting limit exceeds the proposed DEP Act 2 Standard	F1, MS and/or MDL recovery below control limits.
	1: Analyte was found in the field



Table 1C - Soil Analytical Summary Data: Fluoride

Table 1C

Soil Analytical Data Summary:
Fluoride

Sampling Event	Sample ID	Depth (ft)	Sample Date	Soil Condition	Fluoride (mg/kg)
Matrix: Solid					
DEP Soil to Groundwater Values for Unsaturated Soil in a Residential, Used Aquifer					400
DEP Soil to Groundwater Values for Saturated Soil in a Residential, Used Aquifer					400
DEP Residential Direct Contact Numeric Values Surface Soil (0-15 feet)					8,800
Background Soil Investigation - March 2026	BKG-1 @ 0'-1'	0-1	3/5/2026	Unsaturated	1.3
	BKG-1 @ 11'-12'	11-12	3/5/2026	Unsaturated	ND<1.1
	Duplicate #13 (BKG-1 @ 11'-12')	11-12	3/5/2026	Unsaturated	ND<1.1
	BKG-2 @ 0'-1'	0-1	3/5/2026	Unsaturated	1.8
	BKG-2 @ 11'-12'	11-12	3/5/2026	Unsaturated	ND<1.1
	BKG-3 @ 1'-2'	1-2	3/5/2026	Unsaturated	1.3
	BKG-3 @ 5'-6'	5-6	3/5/2026	Unsaturated	1.1 J FL
	BKG-4 @ 1'-2'	1-2	3/5/2026	Unsaturated	ND<1.2
Data Gap Investigation - Surface Soil Samples Feburary and March 2026	BKG-4 @ 9'-10'	9-10	3/5/2026	Unsaturated	ND<1.0
	DG-FL-01 @ 1'-2'	1-2	2/27/2026	Unsaturated	18 FH
	Duplicate 8 (DG-FL-01@ 1'-2'	1-2	2/27/2026	Unsaturated	17
	DG-FL-02 @ 1'-2'	1-2	2/27/2026	Unsaturated	32
	DG-FL-03 @ 1'-2'	1-2	2/27/2026	Unsaturated	22
	DG-FL-04 @ 1'-2'	1-2	2/27/2026	Unsaturated	8.1
	DG-FL-05 @ 1'-2'	1-2	2/27/2026	Unsaturated	8.5
	DG-FL-06 @ 1'-2'	1-2	2/27/2026	Unsaturated	19 FH
	DG-FL-07 @ 1'-2'	1-2	2/26/2026	Unsaturated	74
	DG-FL-08 @ 1'-2'	1-2	2/27/2026	Unsaturated	12
	DG-FL-09 @ 1'-2'	1-2	2/27/2026	Unsaturated	25
	DG-FL-10 @ 1'-2'	1-2	2/27/2026	Unsaturated	33
	DG-FL-11 @ 1'-2'	1-2	2/27/2026	Unsaturated	29
	DG-FL-12 @ 1'-2'	1-2	2/26/2026	Unsaturated	47
	DG-FL-13 @ 1'-2'	1-2	2/19/2026	Unsaturated	25
	DG-FL-14 @ 1'-2'	1-2	2/27/2026	Unsaturated	11
	DG-FL-15 @ 1'-2'	1-2	3/2/2026	Unsaturated	22
	DG-FL-16 @ 1'-2'	1-2	2/20/2026	Unsaturated	22
	DG-FL-17 @ 1'-2'	1-2	2/18/2026	Unsaturated	53
	DG-FL-18 @ 1'-2"	1-2	2/17/2026	Unsaturated	29
	DG-FL-19 @ 1'-2"	1-2	2/17/2026	Unsaturated	9.8
	DG-FL-20 @ 1'-2'	1-2	3/3/2026	Unsaturated	8.5 FH
	Duplicate #9 (DG-FL-20 @ 1'-2')	1-2	3/3/2026	Unsaturated	20
	DG-FL-21 @ 0'-1'	0-1	2/18/2026	Unsaturated	15 FH
	DG-FL-22 @ 0'-1'	0-1	2/17/2026	Unsaturated	15
	DG-FL-23 @ 0'-1'	0-1	2/27/2026	Unsaturated	5.6
	DG-FL-24 @ 1'-2'	1-2	3/3/2026	Unsaturated	22
	DG-FL-25 @ 1'-2'	1-2	2/19/2026	Unsaturated	33
	DG-FL-26 @ 0'-1'	0-1	2/17/2026	Unsaturated	14
	DG-FL-27 @ 1'-2'	1-2	2/17/2026	Unsaturated	6.5
	DG-FL-28 @ 1'-2'	1-2	2/17/2026	Unsaturated	17
	DG-FL-29 @ 1'-2'	1-2	3/3/2026	Unsaturated	30
	DG-FL-30 @ 1'-2'	1-2	2/19/2026	Unsaturated	40
	DG-FL-31 @ 0'-1'	0-1	2/19/2026	Unsaturated	4.2
	DG-FL-33 @ 1'-2'	1-2	2/17/2026	Unsaturated	4.7
	DG-FL-34 @ 1'-2'	1-2	2/20/2026	Unsaturated	16
	DG-FL-35 @ 1'-2'	1-2	2/20/2026	Unsaturated	40
	DG-FL-36 @ 0'-1'	0-1	2/20/2026	Unsaturated	24
	DG-FL-37 @ 1'-2'	1-2	2/20/2026	Unsaturated	42
	DG-FL-38 @ 0'-1'	0-1	2/26/2026	Unsaturated	1.9
	DG-FL-39 @ 0'-1'	0-1	3/5/2026	Unsaturated	5.9
	DG-FL-40 @ 0-1'	0-1	3/4/2026	Unsaturated	6.7
	DG-PF/FL-01 @ 1'-2'	1-2	3/4/2026	Unsaturated	31
	DG-PF/FL-02 @ 1'-2'	1-2	2/19/2026	Unsaturated	19
	DG-PF/FL-03 @ 1'-2'	1-2	2/18/2026	Unsaturated	26
	DG-PF/FL-04 @ 0'-1'	0-1	2/27/2026	Unsaturated	15
	DG-PF/FL-05 @ 0'-1'	0-1	2/27/2026	Unsaturated	14
	DG-PF/FL-06 @ 0'-1'	0-1	2/16/2026	Unsaturated	3.4
	DG-PF/FL-08 @ 0'-1'	0-1	2/20/2026	Unsaturated	1.0 J
	DG-PF/FL-09 @ 1'-2'	1-2	2/20/2026	Unsaturated	13
Data Gap Investigation - Subsurface Soil Samples - Feburary and March 2026	DG-FL-01 @ 8'-7'	7-8	3/2/2026	Unsaturated	74
	DG-FL-02 @ 6'-7'	6-7	3/2/2026	Unsaturated	76
	DG-FL-03 @ 7'-8'	7-8	3/2/2026	Unsaturated	15 FL
	DG-FL-04 @ 8'-9'	8-9	3/2/2026	Unsaturated	14
	DG-FL-05 @ 17' -18'	17-18	3/2/2026	Saturated	0.72
	DG-FL-06 @ 8'-9'	8-9	3/3/2026	Unsaturated	90
	DG-FL-06 @ 11'-12'	11-12	3/3/2026	Saturated	150
	DG-FL-07 @ 9'-10'	9-10	2/27/2026	Unsaturated	56
	DG-FL-08 @ 9'-10'	9-10	2/27/2026	Unsaturated	62
	DG-FL-09 @ 10'-11'	10-11	2/27/2026	Saturated	91
	DG-FL-10 @ 9'-10'	9-10	3/2/2026	Unsaturated	16
	DG-FL-11 @ 10'-11'	10-11	3/3/2026	Unsaturated	27 FH
	DG-FL-12 @ 10'-11'	10-11	2/27/2026	Unsaturated	30
	DG-FL-13 @ 13'-14'	13-14	02/19/26	Unsaturated	52
	Duplicate #5 (DG-FL-13 @ 13'-14')	13-14	02/19/26	Unsaturated	36
	DG-FL-14 @ 6'-7'	6-7	3/4/2026	Unsaturated	110
	DG-FL-15 @ 7'-8'	7-8	3/3/2026	Unsaturated	32
	Duplicate #10 (DG-FL-15 @ 7'-8')	7-8	3/3/2026	Unsaturated	37 FL
	DG-FL-16 @ 6'-7'	6-7	2/27/2026	Unsaturated	13 FH
	DG-FL-17 @ 5'-8'	5-8	2/25/2026	Unsaturated	8.0
Data Gap Investigation - Subsurface Soil Samples - Feburary and March 2026 - Continued	DG-FL-18 @ 17'-18'	17-18	02/19/26	Saturated	77
	DG-FL-19 @ 9'-10'	9-10	2/25/2026	Unsaturated	21
	DG-FL-20 @ 9'-10'	9-10	3/3/2026	Unsaturated	36
	DG-FL-21 @ 8'-9'	8-9	2/25/2026	Unsaturated	15
	DG-FL-22 @ 10'-11'	10-11	02/19/26	Unsaturated	13
	DG-FL-23 @ 8'-9'	8-9	3/4/2026	Unsaturated	28 FL
	DG-FL-24 @ 7'-8'	7-8	3/3/2026	Unsaturated	11
	DG-FL-25 @ 29'-30'	29-30	2/26/2026	Saturated	35
	Duplicate #7 (DG-FL-25 @ 29'-30')	29-30	2/26/2026	Saturated	56 4
	DG-FL-26 @ 11'-12'	11-12	2/25/2026	Unsaturated	19
	DG-FL-27 @ 11'-12'	11-12	02/19/26	Unsaturated	5.9 FL
	DG-FL-28 @ 8'-9'	8-9	02/19/26	Unsaturated	20
	DG-FL-29 @ 12'-13'	12-13	3/3/2026	Unsaturated	9.6
	DG-FL-29 @ 13.75'-14.75'	13.75-14.75	3/3/2026	Saturated	18
	DG-FL-30 @ 20'-21'	20-21	2/26/2026	Saturated	2.4
	DG-FL-31 @ 9'-10'	9-10	2/25/2026	Unsaturated	3.8 FL
	Duplicate 6 (DG-FL-31 @ 9'-10')	9-10	2/25/2026	Unsaturated	3.7
	DG-FL-33 @ 7'-8'	7-8	02/19/26	Unsaturated	ND<1.2 FL
	DG-FL-34 @ 11'-12'	11-12	02/20/26	Unsaturated	29
	DG-FL-35 @ 7'-8'	7-8	02/20/26	Unsaturated	56
	DG-FL-36 @ 13'-14'	13-14	02/20/26	Unsaturated	23
	DG-FL-37 @ 15'-16'	15-16	02/20/26	Unsaturated	ND<1.3
	DG-FL-38 @ 12'-13'	12-13	3/5/2026	Unsaturated	110 4
	DG-FL-39 @ 18'-19'	18-19	3/5/2026	Unsaturated	26
	DG-FL-40 @ 8'-9'	8-9	3/5/2026	Unsaturated	6.3
	DG-PF/FL-01 @ 11'-14'	11-14	3/4/2026	Unsaturated	12
	Duplicate #11 (DG-PF/FL-01 @ 11'-14')	11-14	3/4/2026	Unsaturated	9.5
	DG-PF/FL-02 @ 9'-10'	9-10	2/26/2026	Unsaturated	110
	DG-PF/FL-03 @ 17'-18'	17-18	2/25/2026	Unsaturated	51
	DG-PF/FL-04 @ 19'-20'	19-20	3/4/2026	Unsaturated	64
	DG-PF/FL-05 @ 6.5'-7.5'	6.5-7.5	3/4/2026	Unsaturated	ND<1.3
	DG-PF/FL-05 @ 17'-18'	17-18	3/4/2026	Saturated	5.9
	DG-PF/FL-06 @ 13'-14'	13-14	2/18/2026	Unsaturated	ND<1.2
	DG-PF/FL-08 @ 8'-9'	8-9	3/4/2026	Unsaturated	33
	DG-PF/FL-09 @ 12'-13'	12-13	3/4/2026	Unsaturated	4.0
	DG-PF/FL-11 @ 2'-3'	2-3	02/16/26	Unsaturated	12
	DG-PF/FL-11 @ 3'-4'	3-4	02/16/26	Unsaturated	3.0
	DG-PF/FL-11 @ 6'-7'	6-7	02/18/26	Unsaturated	ND<1.2
Matrix: Aqueous					(µg/L)
DEP Groundwater Statewide Health Standards (SHS) - Residential, Used Aquifer					4,000
Equipment Blanks	Equipment Blank #7	-	2/16/2026	-	ND<200
	Equipment Blank #8	-	2/17/2026	-	ND<200
	Equipment Blank #9	-	2/18/2026	-	ND<200
	Equipment Blank #10	-	2/19/2026	-	ND<200
	Equipment Blank #11	-	2/20/2026	-	ND<200
	Equipment Blank #12	-	2/25/2026	-	ND<200
	Equipment Blank #13	-	2/26/2026	-	ND<200
	Equipment Blank #14	-	2/27/2026	-	ND<200
	Equipment Blank #15	-	3/2/2026	-	ND<200
	Equipment Blank #17	-	3/3/2026	-	ND<200
Field Blanks	Equipment Blank #18	-	3/4/2026	-	ND<200
	Equipment Blank #19	-	3/5/2026	-	ND<200
	Field Blank #4	-	2/18/2026	-	ND<200
	Field Blank #5	-	2/19/2026	-	ND<200
	Field Blank #6	-	2/26/2026	-	ND<200
	Field Blank #7	-	3/3/2026	-	ND<200
	Field Blank #8	-	3/3/2026	-	ND<200
	Field Blank #9	-	3/4/2026	-	ND<200
	Field Blank #10	-	3/5/2026	-	ND<200

Notes:
DEP: Pennsylvania Department of Environmental Protection
SHS: Statewide Health Standard
ft: feet
mg/kg: milligrams per kilogram
µg/L: micrograms per liter
MS/MSD: Matrix Spike/Matrix Spike Recovery
-: Not applicable
ND<: Indicates analysis was performed for the test but it was not detected. The sample reporting limit is reported.
J: Estimated value; Result < reporting limit (RL) and method detection limit (MDL)
4: The analyte present in the original sample is greater than 4 times the matrix spike (MS) concentration; therefore, control limits are not applicable.
F2: MS/MSD RPD exceeds control limits
FH: MS and/or MSD recovery above control limits
FL: MS and/or MSD recovery below control limits
Concentration was detected below the DEP Act 2 Standards.
Concentration exceeds the indicated DEP Act 2 Standard.
Laboratory reporting limit exceeds a DEP Act 2 Standard.
Bolded results indicate a detection



Table 1D – Soil Analytical Summary Data: Metals

Table 1D

Soil Analytical Data Summary:
Metals

Sampling Event	Sample ID	Depth (ft)	Sample Date	Soil Condition	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium (Total)	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Matrix: Soil					(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
DEP Soil to Groundwater Values for Unsaturated Soil in a Residential, Used Aquifer					-	27	29	8,200	320	38	-	190,000	45	43,000	NS	450	-	2,000	10	650	-	26	84	-	14	1,700	12,000
DEP Soil to Groundwater Values for Saturated Soil in a Residential, Used Aquifer					-	27	29	8,200	320	38	-	190,000	45	43,000	NS	450	-	2,000	10	650	-	26	84	-	14	1,700	12,000
DEP Residential Direct Contact Numeric Values Surface Soil (0-15 feet)					190,000	88	12	44,000	440	110	-	190,000	66	7,200	150,000	500	-	31,000	35	4,400	-	1,100	1,100	-	2.2	1,100	66,000
Background Soil Investigation - March 2026	BKG-1 @ 11'-12"	11-12	3/5/2026	Unsaturated	10,000	0.14 J	26	340	0.58	1.0	480 B	4.5	430	220	29,000	170 ^2	820	11,000	ND<0.067	220	1,300	1.3	1.9	ND<55	3.8	8.6	83
	Duplicate #13 (BKG-1 @ 11'-12")	11-12	3/5/2026	Unsaturated	10,000	ND<0.21	17	71	0.40	0.13	150	7.1	64	91	18,000	29 ^2	1,700	1,600	ND<0.061	47	1,600	0.46	0.26	ND<52	0.6	9.0	35
	BKG-2 @ 11'-12"	11-12	3/5/2026	Unsaturated	4,000	ND<0.20	5.2	44	0.29	0.098 J	51	4.0	11	49	24,000	6.3	240	320	ND<0.063	7.4	1,400	0.68	ND<0.10	ND<51	0.080 J	6.4	20 J
	BKG-3 @ 5'-6"	5-6	3/5/2026	Unsaturated	15,000 4	0.32 F,F2	11	69 FL	0.52	0.14	12,000 B,4	57 FL	29	57 FH,F2	39,000 4,F2	39 4	7,500 4	620 4	ND<0.066 F2,FL	62	1,400	0.42 J	0.13	100	0.19	19	87 FL
	BKG-4 @ 9'-10"	9-10	3/5/2026	Unsaturated	4,300	ND<0.21	4.8	42	0.37	0.042 J	120	3.7	14	42	24,000	13 ^2	710	380	ND<0.060	22	1,400	0.38 J	0.052 J	ND<52	0.049 J	4.8	25 J
Matrix: Aqueous					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
DEP Groundwater Statewide Health Standards (SHS) - Residential, Used Aquifer					200	6	10	2,000	4	5	-	100	10	1,000	300	5	-	300	2	100	-	50	100	-	2	170	2,000
Background Soil Investigation	Equipment Blank #19	-	3/5/2026	-	ND<25	ND<1.0	ND<2.0	ND<2.0	ND<0.50	ND<0.50	ND<120	ND<2.0	ND<0.50	ND<1.0	ND<50	ND<0.50	ND<50	ND<2.0	ND<0.20	ND<1.0	ND<200	ND<1.0	ND<0.50	ND<200	ND<0.50	ND<4.0	ND<10
Aqueous Blanks - March 2026	Field Blank #10	-	3/5/2026	-	ND<25	ND<1.0	ND<2.0	ND<2.0	ND<0.50	ND<0.50	ND<120	ND<2.0	ND<0.50	ND<1.0	ND<50	ND<0.50	ND<50	ND<2.0	ND<0.20	ND<1.0	ND<200	ND<1.0	ND<0.50	ND<200	ND<0.50	ND<4.0	ND<10

Notes:

DEP: Pennsylvania Department of Environmental Protection

SHS: Statewide Health Standard

ft: feet

mg/kg: milligrams per kilogram

MS/MSD: Matrix Spike/Matrix Spike Recovery

-: Not applicable

ND<: Indicates analysis was performed for the test but it was not detected. The sample reproting limit is reported.

^2: Calibration Blank (ICB and/or CCB) is outside acceptance limits

4: MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

B: Analyte was found in blank

J: Estimated value; Result < reporting limit (RL) and ≥ method detection limit (MDL)

F2: MS/MSD relative percent difference (RPD) exceeds control limits

FH: MS and/or MSD recovery above control limits

FL: MS and/or MSD recovery below control limits

Concentration was detected below the DEP Act 2 Standards.

Concentration exceeds the indicated DEP Act 2 Standard.

Laboratory reporting limit exceeds a DEP Act 2 Standard.

Bolded results indicate a detection



Appendix A – Soil Boring Logs



Appendix B – Soil Analytical Reports and Chain-of-Custody Documentation



Appendix C – Waste Characterization Analytical Reports and Chain-of-Custody Documentation
