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9 December 2025

Ms. Brittany O'Brien-Drake
Project Manager
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

RE: Letter Work Plan for Site Characterization
Contract/Work Assignment No. D009806-43 Site/Spill No. Pound Ridge Square Shopping Center (Site No. 360257), Pound Ridge, New York

Dear Ms. O'Brien-Drake:

This Letter Work Plan describes the activities proposed for the performance of a site characterization (SC) at the Pound Ridge Square Shopping Center (New York State Department of Environmental Conservation [NYSDEC] Site No. 360257) located in the Town of Pound Ridge, Westchester County, New York (**Figure 1**).

1. SITE DESCRIPTION

NYSDEC tasked EA Engineering and Geology, P.C. (EA) to perform SC activities at the Pound Ridge Square Shopping Center site in the Town of Pound Ridge, Westchester County, to assess environmental impacts, including per- and polyfluoroalkyl substances (PFAS) impacts present in site groundwater. The Pound Ridge Square Shopping Center is a 7.6-acre site located about 1.75 miles southeast of the Town of Pound Ridge in Scotts Corners and is approximately 0.5 miles north of the New York/Connecticut border and the Laurel Reservoir. The site is zoned as commercial and is located within the business district consisting of several shops and restaurants neighbored by residential properties. The site is bounded by Westchester Avenue to the south, Trinity Pass Road to the west, Sellecks Walk to the east, and wooded areas to the north and east. Residential properties are located adjacent to the site, the closest being approximately 150 feet and beyond to the north, and others approximately 250 feet and beyond to the east. A shopping plaza encompasses the central portion of the site with a post office to the west. The buildings are surrounded by paved parking lots with green space on the perimeter. The site also has an onsite septic leach field, and two potable wells. There is an unnamed pond located on the eastern side of the parcel. The site is accessible via two entrances off of Westchester Avenue.

The site is located in the Hudson Valley Metamorphic Highlands, which is comprised of metamorphic and sedimentary rocks emplaced during the Taconic and Acadian orogenies. The metamorphism and deformation of these Paleozoic orogenies is expressed as a NE-SW trending fold and thrust belt today. Subsequent glaciations over the Quaternary have eroded the fold and thrust belt, revealing metasedimentary and metamorphic bedrock throughout the Hudson Valley region. Overlaying sediments and soils in the Hudson Valley region are comprised of sporadic glacial and fluvial deposits. During the 1999 site evaluation (Marin 2000), metamorphic facies encountered during drilling consisted of gray to white schist overlying pink feldspar-rich gneiss.

Overburden materials beneath the site are comprised of weathered bedrock situated over the competent bedrock, and unconsolidated fluvial sediments situated over the weathered bedrock. Depth to bedrock at the site ranges from 21 to 45 feet bgs. Weathered bedrock at the site is on average 11-feet thick and is situated 15 to 33 feet bgs. The unconsolidated fluvial sediments range from 15 to 33 feet in thickness across the site (Marin 2000).

Groundwater is present in two aquifers at the site. The topmost aquifer consists of an unconfined aquifer present in the overburden and weathered bedrock. The second aquifer is comprised of groundwater situated in the fractured bedrock. During the 1999 site evaluation (Marin 2000), eight shallow soil borings were installed to approximately 8 feet bgs, encountering an average water table at 5.3 feet bgs. Additionally, during the 1999 site evaluation (Marin 2000) three open-borehole bedrock monitoring wells were installed to depth of 28 to 58 feet bgs. The average water table in site bedrock monitoring wells ranged from 5 to 7.5 feet bgs.

Surface water at the site is situated in the small unnamed pond on the eastern portion of the site. Several streams flow into the unnamed pond before flowing downstream into the Laurel Reservoir. Stormwater at the site is captured at site sewer grates. It is unclear at this time where the stormwater outlet is located.

2. SITE HISTORY AND PREVIOUS INVESTIGATIONS

The site was undeveloped until the early 1970s, until the Trinity Corners Shopping Center was constructed in 1971, and the post office was constructed in 1979. A former dry cleaner previously occupied one of the building spaces in the southeast corner of the shopping center. In December of 1999 (Marin 2000) a site evaluation and bedrock investigation was conducted to evaluate possible BTEX and CVOC impacts resulting from the historical operation of the former dry cleaners. During this investigation three bedrock monitoring wells were installed to the east of the former dry cleaners to investigate possible VOC impacts. Analytical results obtained from the groundwater samples collected during the 1999 investigation from these wells indicated no CVOC impacts but did indicate that petroleum constituents are detected in the groundwater beneath the site. The presence of petroleum constituents in site groundwater could potentially be associated with a former spill that was identified in 1994 at the Former Shell Service Station #138693 located at 66 Westchester Avenue, southwest of the site (NYSDEC Spill #94-12600).

Currently the site is comprised of a post office building, a large asphalt parking lot, and a shopping center which includes, but is not limited to a pharmacy; a grocery store; a wine and spirits store; an art gallery; a fitness center; a real estate office; and a design studio. PFAS sampling in July and September 2024 of private wells was conducted by the New York State Department of Health (NYSDOH); sampling of public wells was conducted by the Westchester County Department of Health, in conjunction with NYSDOH; and sampling at two of the three existing onsite monitoring wells was conducted by NYSDEC Division of Environmental Remediation. Results from monitoring wells are presented in **Figure 1** and were similar for each date sampled. Perfluorooctanoic acid (PFOA) was detected at a maximum concentration of 610 parts per trillion (ppt) and PFOS was detected at a maximum concentration of 38 ppt. Based on the results, it is estimated that groundwater is moving from west to east and may be entering the unnamed pond on the eastern portion of the property. Nearby public water supply wells and private wells have shown exceedances of the New York State maximum contaminant levels (MCLs) for PFOA and/or

PFOS. The presence of PFAS at the site has warranted further characterization of site media to determine if contamination is limited to PFAS or if a broader range of contaminants are present, and whether the presence of contaminants presents a significant threat to public health or the environment.

3. SITE CHARACTERIZATION OBJECTIVES

Objectives associated with this work assignment include:

- Determining if PFAS contamination present onsite is a resultant of former commercial practices, or if PFAS contamination onsite is a resultant from an offsite source(s) or anthropogenic background conditions.
- Determining if contamination is limited to PFAS, or if other contaminants exist in site media.
- Gather sufficient data for NYSDEC and NYSDOH to determine if the site presents a significant threat to public health or the environment.

The objectives of this SC will be accomplished through the following activities outlined in the subsequent section.

4. SITE CHARACTERIZATION FIELD ACTIVITIES

Site media investigated during this SC will consist of surface soil, subsurface soil, groundwater, sediment, surface water in various locations as shown on **Figure 2**. Samples will be analyzed for PFAS via U.S. Environmental Protection Agency (EPA) Method 1633 and for volatile organic compounds (VOCs) via EPA Method 8260D. An additional subset of the samples will be evaluated for analysis of semivolatile organic compounds (SVOCs) (EPA Method 8270E), pesticides (EPA Method 8081B), herbicides (EPA Method 8151A), Target Analyte List (TAL) metals (EPA Method 6010D), mercury (EPA Method 7471), cyanide (EPA Method 9012B), polychlorinated biphenyls (PCBs) (EPA Method 8082), 1,4-dioxane (EPA Method 8270E select ion monitoring [SIM] in aqueous samples and EPA Method 8270E in solid samples), inorganic anions (EPA Method 300.0), artificial sweeteners (Eurofins analysis of Pharmaceuticals and Personal Care Products [PPCPs]), and boron (EPA Method 6010D). Additionally, soil samples collected from the 2- to 12-inch interval will be analyzed for SPLP PFAS (Method 1312), TOC (Method 9060A), and pH (Method 9040). The sample collection matrix is presented in **Attachment A**. Note, soil samples analyzed for VOCs will be collected from the 0- to 6-inch interval and the 6- to 12-inch interval as opposed to the 0- to 2-inch and 2- to 12-inch intervals referenced above.

Field activities will be performed in accordance with EA's Generic Quality Assurance Project Plan (2020), Generic Health and Safety Plan (2025), and Field Activities Plan (FAP) (2020) for work assignments under the NYSDEC Standby Contract No. D0098906. These plans have been submitted to NYSDEC and are available upon request. A site-specific addendum to the Generic Health and Safety Plan is provided as **Attachment B.** Blank field forms are provided in **Attachment C**.

The following subsections contain details of each procedure for completing them, which includes the following field activities:

- Boring installation and soil sampling
- Monitoring well installations
- Monitoring well development
- Groundwater sampling
- Sediment and surface water sampling
- Surveying
- Decontamination/IDW management
- QA/QC practices
- Community air monitoring plan (CAMP) activities

4.1 BORING INSTALLATION AND SOIL SAMPLING

Prior to field activities, EA's drilling subcontractor will contact Dig Safely New York so that public utilities may be marked out and will provide all copies of Dig Safely notifications and responses to EA prior to field activities. In addition, EA will coordinate with a private utility clearance subcontractor to evaluate the presence of underground utilities or features using ground penetrating radar to identify subsurface features prior to initiating intrusive activities.

A total of ten deep borings will be advanced with rotosonic technology, and a total of four shallow borings will be advanced with a hand auger on site. The ten deep borings to be advanced by EA's drilling subcontractor will be comprised of 5 bedrock borings and 5 deep overburden borings. All borings will be installed under the full-time supervision of an EA geologist. All ten deep borings will be converted to respective monitoring wells intended to screen either shallow overburden groundwater or shallow bedrock fractured zones. EA will facilitate the installation of the four shallow soil borings with a hand auger to facilitate the collection of surface soil and shallow subsurface soil samples.

Bedrock Borings

EA's subcontractor will hand clear (or soft dig) all 5 bedrock boring locations to 5 feet below ground surface (bgs) to confirm no utility interferences exist. If any obstructions are encountered during hand-clearing activities, the borehole will be properly abandoned (filled in with original excavated material and resurfaced with the same material as the surrounding surface), and a new location will be hand-cleared a few feet from the abandoned borehole location. Soil samples will be collected from the 0- to 2-inch and 2- to 12-inch depth intervals during hand clearing at each boring location (and from the 0- to 6-inch, and 6- to 12-inch intervals for VOC analysis). After a given borehole has been hand-cleared, a track-mounted sonic drill rig will advance a 4-inch diameter inner casing and 6-inch outer diameter casing to sample and extrude soil into a 5-foot sample bag for classification and sampling by an EA geologist. Overburden soil logging and sampling will occur until competent bedrock is encountered.

Subsurface soil samples will be taken during bedrock boring installation from the last foot of overburden soil overlying weathered bedrock at MW-5D, MW-7D, and MW-8D. During advancement of MW-4 overburden soil samples will be collected at 0 to 2 inches, 2 to 12 inches,

and 5 to 6 feet (top of overburden water table). **Attachment A** includes the sample matrix for this field event.

Upon encountering bedrock and successful logging and sampling of the overburden, 8-inch sonic casing will be used to overdrill the borehole and will advance 3-feet into the competent bedrock, allowing for the 4-inch diameter permanent steel casing to be grouted into place. The permanent casing shall be grouted in place utilizing bentonite-grout mix and will be allowed to cure for a minimum of 48 hours before bedrock drilling commences.

Once the steel casing has cured in place, a 4-inch diameter air hammer bit will be used to advance the bedrock boring to its final depth. During this time, the boring will be advanced 5 feet at a time until the first water producing fractured zone is encountered. Water may be added to the borehole to suppress fugitive dust emissions. The drilling subcontractor will switch to conventional water-based rotosonic drilling if excessive fugitive dust is being generated during air rotary drilling. EA will perform perimeter dust and vapor monitoring in accordance with the Community Air Monitoring Plan (Section 4.9). With the addition of drilling water to the borehole, it may become unclear if the bedrock fractures are generating water during advancement. If this is observed, EA will use a submersible pump to purge the interval dry and monitor recharge into the borehole. Boreholes will be advanced to the first substantial water bearing fracture zone encountered in the bedrock. Once terminated, the borehole will be converted into a monitoring well.

Deep Overburden Borings

EA's subcontractor will hand clear (or soft dig) all 5 deep overburden soil boring locations to 5 feet bgs to confirm no utility interferences exist. If any obstructions are encountered during hand-clearing activities, the borehole will be properly abandoned (filled in with original excavated material and resurfaced with the same material as the surrounding surface), and a new location will be hand-cleared a few feet from the abandoned borehole location. Soil samples will be collected from the 0- to 2-inch and 2- to 12-inch depth intervals during hand clearing at each boring location. After a given borehole has been hand-cleared, a track-mounted sonic drill rig will advance a 4-inch diameter inner casing and 6-inch outer diameter casing to sample and extruded soil into a 5-foot sample bag for classification and sampling by an EA geologist.

Samples will be taken from deeper overburden soil borings at the following estimated depths:

- 0- to 2-inches (VOCs 0- to 6-inches)
- 2- to 12-inches (VOCs 6- to 12-inches)
- Interval approximately 1-foot above the water table

Soil borings will be advanced 10 feet past the depth of the water table for conversion into monitoring wells.

Shallow Overburden Borings

A total of 4 shallow soil borings will be installed with a hand auger around the former dry-cleaner's property. The hand auger is necessary as the four locations are not accessible to the drill rig. Hand augers will be advanced to 2 feet below grade. If refusal is encountered before 2 feet bgs the boring will be relocated and attempted again, not to exceed three attempts.

Soil samples will be taken from shallow overburden borings at the following depths:

- 0- to 2-inches bgs (VOCs 0- to 6-inches)
- 2- to 12-inches bgs (VOCs 6- to 12-inches)
- 1- to 2-feet bgs

Once samples have been acquired, the shallow boring will be backfilled with remaining auger cuttings, topped with topsoil, and reseeded with grass if necessary.

Soil Logging

The EA field geologist will complete soil logging and classification following ASTM International Method D2488. At a minimum, the following information will be recorded on boring logs:

- Date/times drilling occurred
- Drill rig operating parameters
- Subsurface interval and recovery
- Headspace photoionization detector (PID) readings
- Lithology description in accordance with the Unified Soil Classification System (USCS) ASTM International Method D2487 (including USCS code, soil type, color, grain size and shape, texture, moisture content, density, and consistency, etc.)
- Any unusual characteristics (e.g., odor, sheens, staining, etc.)
- Depth to water
- Depth to weathered bedrock
- Depth to bedrock
- Borehole depth information

Drill cuttings will be containerized, handled, and stored in 55-gallon Department of Transportation drums and will be disposed of based on waste characterization results. Water used during drilling will be containerized, handled, and stored in a frac tank, which will be delivered by EA's IDW disposal subcontractor. IDW water will disposed of based on waste characterization results and transported to the accepting waste facility by EA's IDW disposal subcontractor.

Soil boring specifics are summarized below, sampling rationale for each proposed soil boring is summarized in **Table 1**. **Attachment A** presents the sampling scheme and analytical methodology for the analyses. Sample collection information (sample identification, collection date/time, sample depth interval, sample analyses) will be recorded in the logbook. Soil samples will be analyzed by NYSDEC call-out laboratories.

Table 1. Sample Rationale

Site Name	Media Type	Location ID	Sample Rationale
Pound Ridge Square Shopping Center	Existing Monitoring Wells	MW-01	Existing bedrock monitoring well onsite. Open borehole from 21 to 46 feet bgs. Historical PFAS exceedances.
		MW-02	Existing bedrock monitoring well onsite. Open borehole from 21 to 28 feet bgs. Historical PFAS exceedances.
		MW-03	Existing bedrock monitoring well onsite. Open borehole from 40 to 58 feet bgs. No historical PFAS data. Well collar to be rehabilitated.
	Shallow Soil Boring	SB-01	Hand-auger shallow soil boring to investigate surficial PFAS sources adjacent to former dry-cleaning property.
		SB-02	Hand-auger shallow soil boring to investigate surficial PFAS sources adjacent to former dry-cleaning property.
		SB-03	Hand-auger shallow soil boring to investigate surficial PFAS sources adjacent to former dry-cleaning property.
		SB-04	Hand-auger shallow soil boring to investigate surficial PFAS sources adjacent to former dry-cleaning property.
	Proposed Soil Borings/ Monitoring Wells.	MW-4	Proposed bedrock monitoring well (downgradient)
		MW-5S	Proposed overburden monitoring well (side/downgradient)
		MW-5D	Proposed bedrock monitoring well (side/downgradient)
		MW-6S	Proposed overburden monitoring well (upgradient of commercial complex (or shopping center), downgradient of gas station)
		MW-6D	Proposed bedrock monitoring well (upgradient of commercial complex (or shopping center), downgradient of gas station)
		MW-7S	Proposed overburden monitoring well (upgradient of commercial complex (or shopping center), downgradient of septic leach field)
		MW-7D	Proposed bedrock monitoring well (upgradient of commercial complex (or shopping center), downgradient of septic leach field)
		MW-8S	Proposed overburden monitoring well (in vicinity of existing supply wells; inform CSM regarding groundwater flow)
		MW-8D	Proposed bedrock monitoring well (in vicinity of existing supply wells; inform CSM regarding groundwater flow)
		MW-9S	Proposed overburden monitoring well adjacent to MW-2 and the southeast corner of the building (side/downgradient)

Notes:
bgs = below ground surface
ID = identification
PFAS = per- and polyfluoroalkyl substances

4.2 MONITORING WELL INSTALLATION

All 5 deep overburden soil borings and all 5 bedrock borings will be converted to monitoring wells upon reaching their respective final depth. Monitoring wells will be constructed of 2-inch diameter polyvinyl chloride (PVC) casing with a 5 or 10 foot long, 0.010-inch PVC. The annulus around the outside of the screen will be backfilled with sand (#0 US Silica or equivalent) to 2 feet above the screen. A minimum 2-foot bentonite seal will be installed above the sand pack with the remaining borehole annulus being tremie grouted with a bentonite/cement grout mixture to grade. Each well will be completed with a 2-foot by 2-foot concrete pad and fitted with a flush-mounted

curb box with a diameter of 6 inches. The concrete pad will be constructed so that water drains away from the well.

The construction of each well will be depicted as built in a well construction diagram. Blank monitoring well construction diagram forms are included in **Attachment C**. The diagram will be attached to the boring log and will graphically denote:

- Borehole depth
- Screen location and length
- filter pack size and depth
- Seal
- Grout
- Height of riser
- Water level on the construction date

All drilling equipment will be decontaminated between drilling locations utilizing a steam-cleaner and PFAS free water. Decontamination water will be containerized, handled, and disposed of as described below in Section 4.7.

In addition to the new wells, the surface completion for MW-3, an existing bedrock well, will be rehabilitated. Currently the well cover is broken, creating a pathway for runoff water into the bedrock aquifer. After inspection of the overall well integrity, EA's drilling subcontractor will replace the damaged well cover and replace it with a completed 2-foot by 2-foot concrete pad, fitted with a new flush-mounted curb box with a diameter of 6 inches. If there are any obstructions or further damage noted in the existing well to the extent that rehabilitation is not feasible, the well will be decommissioned in accordance with CP-43 NYS Groundwater Monitoring Well Decommissioning Policy.

4.3 MONITORING WELL DEVELOPMENT

Monitoring well development will be conducted for each newly installed and rehabilitated monitoring wells. Surge and pump techniques will be used to remove fines from the filter pack and ensure effective communication between the well and the surrounding aquifer. Newly installed monitoring wells will be developed no sooner than 48 hours but no longer than 7 calendar days following installation.

Water levels and well depths will be measured prior to initiation of well development with a Teflon-free water level meter probe with an accuracy of 0.01 foot.

For newly constructed monitoring wells, well development will be facilitated with a submersible pump. Water depths, flow rates and water quality parameters (pH, specific conductance, temperature, oxidation-reduction potential [ORP], dissolved oxygen [DO], total dissolved solids, and turbidity) will be monitored at 15-minute intervals throughout the development process using a Teflon-free water level meter probe with an accuracy of 0.01 foot; a flow measurement device (containers graduated in milliliters) and stop watch; and a calibrated multi-parameter water quality monitor (Horiba U-22 water quality monitoring system or similar). A PID will be used to monitor vapor concentrations during purging.

Liquid levels and water quality parameters will be recorded on well development logs. Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging, or sampling will be recorded and reported.

Monitoring well development will be considered complete when water quality parameters have stabilized, a turbidity of less than 50 nephelometric turbidity units (NTU) has been achieved, and a minimum of 3 to 5 times the static water volume in the well (to include the well screen, casing, plus saturated annulus, assuming 30 percent annular porosity) has been removed. Stabilization parameters are as follows:

- pH: ±0.1 standard units
- Specific conductance: ±3 percent
- Temperature: ±10 percent
- ORP: ±10 millivolts
- DO: ±0.3 milligrams per liter
- Turbidity: <50 NTU

Development water will be containerized, handled, and stored in the frac tank located in the central laydown area. IDW water will disposed of accordingly based on waste profiling results.

4.4 GROUNDWATER SAMPLING

Groundwater samples from the newly installed wells and existing monitoring well (13 wells total) will be collected using low-flow sampling techniques.

Anticipated monitoring wells and the anticipated analytical methods for each well are summarized in **Attachment A**. The site's monitoring network will be comprised of 5 new overburden monitoring wells, 5 new bedrock monitoring wells, and 3 existing bedrock monitoring wells.

Static water levels and well depths will be collected prior to purging/ sampling with an water level meter with an accuracy of 0.01 foot, and well headspace will be screened with a PID prior to the start of purging. The date, time, well number, headspace readings, and gauging data will be recorded in the field log.

A peristaltic pump and dedicated high-density polyethylene tubing will be used to purge and collect groundwater for analysis by a NYSDEC call-out laboratory. Water depths will be recorded throughout purging to the nearest 0.01 foot using a water level meter.

Water quality parameters (including pH, temperature, conductivity, DO, turbidity, and ORP) will be recorded throughout purging using a calibrated water quality meter and flow-through cell (Horiba U-22 water quality monitoring system or similar). Readings will be taken every 3 to 5 minutes until water quality parameters stabilize.

Stabilization is considered to be achieved when three consecutive readings are within the limits as follows:

- Drawdown less than 0.3 feet; or stable drawdown if the minimal drawdown exceeds 0.3 feet
- pH readings within ± 0.1 pH units
- Water temperatures within ± 3 percent
- ORP within ± 10 millivolts
- DO within ± 10 percent for values greater than 0.5 milligrams per liter; if 3 DO values are less than 0.5 milligrams per liter, the values are considered stabilized
- Specific conductance within ± 3 percent
- Turbidity within ± 10 percent for values greater than 10 NTU; if three turbidity values are less than 10 NTU, the values are considered stabilized

Water quality parameters and pertinent sampling information will be recorded on groundwater purge and sample collection logs. Unusual conditions (colors, odors, surface sheens, etc.) noticed during well purging or sampling will also be recorded and reported.

All groundwater samples will be collected following stabilization of water quality parameters. **Attachment A** presents the sampling scheme and analytical methodology for all samples. Sample collection information (sample identification, collection date/time, and sample analyses) will be recorded on the purge form. Groundwater samples will be analyzed by NYSDEC call-out laboratories.

4.5 SEDIMENT AND SUFACE WATER SAMPLING

The proposed locations of the sediment and surface water samples are presented on **Figure 2**. It is anticipated that a total of 4 co-located samples will be collected for this field activity. Field personnel will collect the sediment and surface water samples by wading into the stream (starting at the downstream location) to reach the desired sample location.

Surface Water Samples

Field personnel will collect surface water first, then sediment directly below where the surface water was collected. Surface water samples will be collected with a dedicated dipper, beaker, or pond sampler.

The approximate location of the sample will be noted in the field logbook. A high-precision global positioning system (GPS) unit will be utilized to collect the location of the surface water samples, which will then be surveyed again at a later date. Field measurement of pH, dissolved oxygen, temperature, turbidity, salinity, and specific conductivity will be recorded 3 times, to be averaged and recorded in the field logbook.

All surface water samples will be collected in laboratory provided sample containers for analysis per **Attachment A**.

Sediment Samples

Following the collection of the surface water at a given location, Sediment will be collected by field personnel utilizing a dedicated clean stainless steel or high-density polyethylene sampling spoon. Field measurements regarding the USCS description of the sediment, and odors/sheens will be recorded on the applicable field form (**Attachment C**).

All sediment samples will be collected in laboratory provided sample containers for analysis per **Attachment A.** Surface water and sediment samples will be analyzed by NYSDEC call-out laboratories.

4.6 SITE SURVEY

Once all monitoring wells have been installed at the site, a licensed surveyor will perform a survey of the sampling locations. The site survey will be conducted with a North American Vertical Datum of 1988 and horizontal datum North American Datum of 1983 (2011), New York State Plane East Zone 3101 to collect the following data:

- Monitoring wells (ground surface, outer casing elevation, inner PVC casing elevation)
- Soil borings (ground surface)
- Surface water/sediment sampling locations

The subcontractor will also provide an AutoCAD dwg file with a triangular irregular network surface generated from field located points and feature lines. These features will be used in the reporting phase of the SC.

4.7 DECONTAMINATION/INVESTIGATION-DERIVED WASTE MANAGEMENT

Non-dedicated drilling equipment and tools will be decontaminated prior to, between each drilling location, and prior to departure at the end of site work using steam-cleaning methods.

IDW, including personal protective equipment, solids, and liquids generated during the well drilling, well development, decontamination, and well sampling activities, will be stored, handled, and disposed of in accordance with the FAP (2020). EA's subcontractor will also be required to contain and manage any liquids used for drilling to the extent practicable to prevent runoff of IDW. EA's IDW subcontractor will stage a frac tank at a centrally located laydown area to be determined by EA, NYSDEC, and the property owners/management at the Pound Ridge site. EA's drilling subcontractor will haul all liquid IDW for storage into the frac tank throughout the field event. Additionally, 55-gallon Department of Transportation-approved drums will be used to containerize all soil, and rock cuttings generated during the field event. EA will ensure drums are labeled and secured. EA's drilling subcontractor will be responsible for transporting drill cuttings, drilling fluid, impacted materials, and decontamination water to the central IDW staging area.

A composite sample of the solids from the soil drums will be collected and submitted for the analysis of Synthetic Precipitation Leaching Procedure (SPLP) PFAS, TCLP VOCs, TCLP

SVOCs, TCLP Resource Conservation and Recovery Act metals, TCLP herbicides, TCLP pesticides, TCLP PCBs, reactive sulfide, reactive cyanide, total organic halides, corrosivity, reactivity, paint filter test, and flash point. A composite sample of the liquid IDW in the frac tank will be submitted for the analysis of PFAS, TCL VOCs, TCL SVOCs, Resource Conservation and Recovery Act metals, PCBs, reactive cyanide, reactive sulfide, total organic halides, corrosivity, reactivity, and flash point.

The IDW contractor will complete the waste profile for disposal at the appropriate destination facility. It is anticipated that the solid and liquid IDW will be non-hazardous. Once the accepting facilities have been identified, EA's IDW subcontractor will haul the solid drums for disposal and will return to the site to haul off liquid IDW from the frac tank. The frac tank will be removed from the site by EA's IDW subcontractor.

4.8 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

Quality assurance/quality control samples will be collected at a frequency of 5 percent (1 per 20) of the samples collected, per matrix, per site and will include a field duplicate, and matrix spike/matrix spike duplicate samples. Equipment blanks will be collected per piece of non-dedicated equipment, per day as needed. A trip blank will be analyzed for VOCs only, for each cooler that is shipped with VOC samples.

4.9 COMMUNITY AIR MONITORING PLAN

Community air monitoring activities will consist of a combination of continuous and periodic monitoring, which will be performed dependent upon the type of activity conducted at the site, as discussed in the following subsection. VOC monitoring will be performed using a MiniRAE 3000 or equivalent, which is capable of calculating instantaneous concentrations, 15-minute time-weighted averages, and an average of the previous running time period. These levels will be compared to the levels specified in Section 4.9.3.

4.9.1 Continuous Air Monitoring

Continuous monitoring for VOCs and particulates will be required for ground intrusive activities including boring installations, well installations, and management of IDW during drilling activities. Monitoring will take place at the perimeter of the exclusion zone and should include upwind and downwind concentrations at the start of each workday and as-needed thereafter (i.e., wind direction changes, change in work location, modification of exclusion zone, etc.). Weather conditions, including prevailing wind direction, will be observed and recorded for each day of activities.

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the work area at temporary particulate monitoring stations. Locations will be dependent on prevailing winds. The particulate monitoring will be performed using a TSI DustTrak II or equivalent. The TSI DustTrak II is real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes for comparison to the airborne particulate action level. The TSI DustTrak II

is equipped with an audible alarm to indicate exceedance of the action level. In addition to using the TSI DustTrak II, fugitive dust migration will be visually assessed during all work activities.

4.9.2 Periodic Air Monitoring

Periodic monitoring for VOCs will be required during non-intrusive activities. Non-intrusive activities are anticipated to include: the collection of groundwater, surface water, and sediment samples; site surveying; and IDW management. Periodic monitoring during sample collection will consist of taking a reading as follows– upon arrival at a sample location, opening a well cap, during IDW management, and prior to leaving a sample location.

4.9.3 Action Levels and Response

This subsection identifies the action levels and corresponding responses for concentrations of VOCs and particulates detected during the field activities.

4.9.3.1 Volatile Organic Compounds

VOCs and SVOCs may be encountered during this SC. VOC action levels are as follows:

- If ambient air concentrations of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15- minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background conditions (upwind concentrations), work activities will resume with continued monitoring.

- If the total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist in excess of 5 ppm over background but less than 25 ppm, work activities will be stopped, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 ft downwind of the work zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 ft), is below 5 ppm over background for the 15-minute average.

- If the total organic vapor level is above 25 ppm at the perimeter of the work area, work activities will be shut down.

All 15-minute readings will be recorded and be available for NYSDEC and New York State Department of Health personnel to review on a weekly basis. Instantaneous readings, if any, used for decision purposes will also be recorded. NYSDEC and NYSDOH will be notified of any exceedances of CAMP action levels and corrective measures immediately (within 24 hours).

4.9.3.2 Particulates

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (µg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving

the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 µg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m3 above the upwind level, work will be stopped, and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m3 of the upwind level and in preventing visible dust migration.

Similar to the VOC readings, all particulate readings will be recorded and be available for NYSDEC and New York State Department of Health personnel to review on a weekly basis. NYSDEC and NYSDOH will be notified of any exceedances of CAMP action levels and corrective measures immediately (within 24 hours).

4.10 PRESSURE TRANSDUCERS

NYSDEC will use pressure transducers to evaluate the effects of groundwater pumping on water levels across the site. Eight Solinst Levelogger 5 M10 pressure transducers and one Solinst Barologger 5, or comparable equipment, will be rented from Pine Environmental. Pressure transducers will be installed in 4 overburden wells and 4 bedrock wells at a depth just above the well screen. The transducers will be set to measure pressure every 15 minutes and will be left in place for 1- to 2-months. Data will be downloaded one to two times over the 1- to 2-month period. During data downloading, a depth to water measurement will be collected and compared with the pressure transducer measurements for quality control. Pressure measurements will be corrected for barometric pressure using the barometric logger and converted to hydraulic head relative to NAVD 88 based on the results of the site survey.

5. SITE CHARACTERIZATION REPORT

During SC field activities, daily field reports will be communicated to NYSDEC and NYSDOH at the end of field activities for the day. Following SC field activities, EA will prepare a report summarizing field activities and analytical results following completion of the investigation. The report will include at a minimum:

- Summary of field activities, including daily field reports, photographs, soil boring logs, monitoring well construction diagrams, groundwater purge forms, surface water collection, sediment collection forms, equipment and equipment calibration logs
- Summary of contaminants of concern at the site
- Summary of analytical results with tables and figures depicting groundwater elevation contours, bedrock groundwater potentiometric surfaces, plume maps, analytical results, and surveyed features

- Fingerprinting of PFAS detections in site media, to determine potential PFAS source areas.

Analytical data will be validated by a third-party data validator and uploaded to the NYSDEC EIMS database system.

6. PROPOSED SCHEDULE

The work outlined above is anticipated to begin 14 days after the final work plan is approved and all access agreements are in place pending subcontractor availability. Drilling activities are expected to be completed over 2 to 3 weeks. Following the installation and development of the monitoring wells at the site, EA will return a minimum of 14 days later to sample site groundwater, sediment, and surface water. Subsequent trips may also be required to oversee the IDW pick-up and surveying of the monitoring well network.

7. REFERENCES

EA Engineering P.C. (EA). 2020. *Generic Quality Assurance Project Plan for Work Assignments under NYSDEC Contract D009806.* Revision 01. April.

———. 2023. *Generic Field Activities Plan for Work Assignments under NYSDEC Contract D009806*. Revision 02. March.

———. 2025. *Generic Health and Safety Plan for Work Assignments under NYSDEC Contract D009806.* Revision 03. August.

Marin Environmental. 2000. *Trinity Corners Shopping Center Site Evaluation Summary and Bedrock Investigation*. April.

Please feel free to contact me if you have any questions or concerns at 845-238-8203.

Sincerely yours,

EA ENGINEERING AND GEOLOGY, P.C.

Patrick Gannon, PG
Project Manager

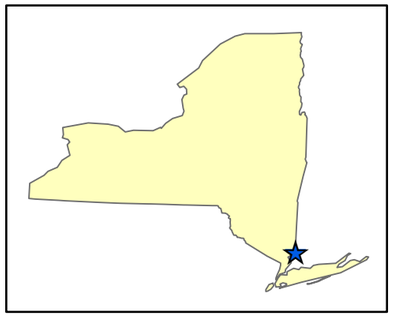
Donald F. Conan, PE, PG
Program Manager

Figures

1	General Location
2	Proposed Sampling Locations

Attachments

A	Sample Collection Matrix
B	Site-Specific Addendum to the Generic Health and Safety Plan for Hazardous Waste and Environmental Services
C	Field Forms



Legend

Site Boundary

0 150 300

US Feet

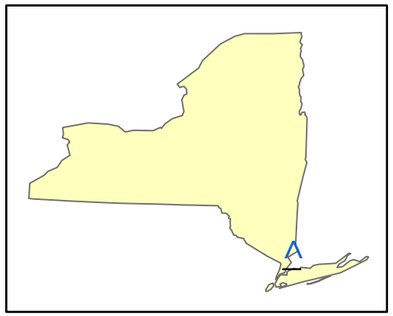
N

Map Date: 7/29/2025
Projection: NAD83 State Plane New York (in feet)

NEW YORK STATE Department of Environmental Conservation

Figure 1
SITE LOCATION
Pound Ridge Square Shopping Center (360257)
Pound Ridge, New York

\\SYRACUSEFP\Syracuse\GIS\data\StateandLocal\Pound Ridge\PROJECTS\SC_WorkPlan_2025\SC_WorkPlan_2025.aprx



Legend

Proposed Sample Location

- Bedrock Monitoring Well
- Overburden Monitoring Well
- Overburden and Bedrock Monitoring Well Couplet
- Existing Bedrock Well
- Soil Boring
- Surface Water and Sediment
- Site Boundary

0 50 100
US Feet

N

Map Date: 12/8/2025
Projection: NAD83 State Plane New York (in feet)

NEW YORK STATE Department of Environmental Conservation

Figure 2
PROPOSED SAMPLE LOCATIONS
Pound Ridge Square Shopping Center (360257)
Pound Ridge, New York

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Attachment A.
Sample Collection Matrix

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Table A-1. Sample Collection Matrix

Matrix	Location ID	Sample ID	Depth Note/Sample Interval (feet bgs)	Analytical Group																			
				PFAS (EPA 1633)	VOCs (8260D)	SVOCs (8270E)	Pesticides (8081B)	Herbicides (8151A)	TAL Metals (6010D) (Total)	TAL Metals (6010D) (Dissolved)	Mercury (7471B)	Cyanide (9012B)	PCBs (8082)	1-4 Dioxane (8270E SIM)	1-4 Dioxane (8270E)	SPLP PFAS (1312)	TOC (9060A)	pH (9040)	Inorganic Anions (300.0)	Artificial Sweeteners (PPCP)	Boron (6010D)	Liquid IDW Parameters [b]	Solid IDW Parameters [c]
Sediment and Surface Water Samples																							
Surface Water	SW/SED-01	360257-SW-01-YYYYMMDD	Surface of water	X	X																		
Sediment		360257-SED-01-YYYYMMDD	Top 6 inches of sediment under water column	X	X																		
Surface Water	SW/SED-02	360257-SW-02-YYYYMMDD	Surface of water	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Sediment		360257-SED-02-YYYYMMDD	Top 6 inches of sediment under water column	X	X	X	X	X	X		X	X	X		X								
Surface Water	SW/SED-03	360257-SW-03-YYYYMMDD	Surface of water	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Sediment		360257-SED-03-YYYYMMDD	Top 6 inches of sediment under water column	X	X	X	X	X	X		X	X	X		X								
Surface Water	SW/SED-04	360257-SW-04-YYYYMMDD	Surface of water	X	X																		
Sediment		360257-SED-04-YYYYMMDD	Top 6 inches of sediment under water column	X	X																		
Surface Water Field Duplicate	SW-04	360257-SW-DUP-01	Surface of water	X	X																		
Sediment Field Duplicate	SED-04	360257-SED-DUP-01	Top 6 inches of sediment under water column	X	X																		
Soil Boring Samples																							
Surface Soil	SB-01	360257-SS-01-[Upper]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-01-[Lower]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-01-[1-2]-YYYYMMDD	From 1-foot bgs to 2-feet bgs (1 feet-2 feet)	X	X	X	X	X	X		X	X	X		X								
Surface Soil	SB-02	360257-SS-02-[Upper]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-02-[Lower]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-02-[1-2]-YYYYMMDD	From 1-foot bgs to 2-feet bgs (1 feet-2 feet)	X	X																		
Surface Soil	SB-03	360257-SS-03-[Upper]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-03-[Lower]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-03-[1-2]-YYYYMMDD	From 1-foot bgs to 2-feet bgs (1 feet-2 feet)	X	X																		
Surface Soil	SB-04	360257-SS-04-[Upper]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-04-[Lower]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-04-[1-2]-YYYYMMDD	From 1-foot bgs to 2-feet bgs (1 feet-2 feet)	X	X																		
Surface Soil	MW-4	360257-SS-04-[Upper]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SO-04-[]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-04-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Surface Soil	MW-5S	360257-SS-05S-[0-2]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-05S-[2-12]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					

Matrix	Location ID	Sample ID	Depth Note/Sample Interval (feet bgs)	Analytical Group																			
				PFAS (EPA 1633)	VOCs (8260D)	SVOCs (8270E)	Pesticides (8081B)	Herbicides (8151A)	TAL Metals (6010D) (Total)	TAL Metals (6010D) (Dissolved)	Mercury (7471B)	Cyanide (9012B)	PCBs (8082)	1-4 Dioxane (8270E SIM)	1-4 Dioxane (8270E)	SPLP PFAS (1312)	TOC (9060A)	pH (9040)	Inorganic Anions (300.0)	Artificial Sweeteners (PPCP)	Boron (6010D)	Liquid IDW Parameters [b]	Solid IDW Parameters [c]
Subsurface Soil		360257-SO-05S-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Subsurface Soil	MW-5D	360257-SO-05S-[DEPTH]-YYYYMMDD	Last foot of overburden soil	X	X																		
Surface Soil	MW-6S	360257-SS-06S-[0-2]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-06S-[2-12]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-06S-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Surface Soil	MW-7S	360257-SS-07S-[0-2-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-07S-[2-12]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-07S-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Subsurface Soil	MW-7D	360257-SO-07D-[DEPTH]-YYYYMMDD	Last foot of overburden soil	X	X																		
Surface Soil	MW-8S	360257-SS-08S-[0-2]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-08S-[2-12]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-08S-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Subsurface Soil	MW-8D	360257-SO-08D-[DEPTH]-YYYYMMDD	Last foot of overburden soil	X	X																		
Surface Soil	MW-9S	360257-SS-09S-[0-2]-YYYYMMDD	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Surface Soil		360257-SS-09S-[2-12]-YYYYMMDD	From 2 inches bgs to 12 inches bgs	X	X[a]											X	X	X					
Subsurface Soil		360257-SO-09S-[DEPTH]-YYYYMMDD	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Surface Soil Field Duplicate	SB-02	360257-SS-DUP-01	Top 2 inches of soil (0-2 inches)	X	X[a]																		
Subsurface Soil Field Duplicate	MW-7S	360257-SO-DUP-01	First foot of saturated soil (Water table ~5-6 feet bgs)	X	X	X	X	X	X		X	X	X		X								
Groundwater Samples																							
Groundwater	MW-1	360257-GW-MW-01-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-2	360257-GW-MW-02-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-3	360257-GW-MW-03-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-4	360257-GW-MW-04-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-5S	360257-GW-MW-05S-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-5D	360257-GW-MW-05D-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-6S	360257-GW-MW-06S-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-6D	360257-GW-MW-06D-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-7S	360257-GW-MW-07S-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-7D	360257-GW-MW-07D-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-8S	360257-GW-MW-08S-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		

Matrix	Location ID	Sample ID	Depth Note/Sample Interval (feet bgs)	Analytical Group																				
				PFAS (EPA 1633)	VOCs (8260D)	SVOCs (8270E)	Pesticides (8081B)	Herbicides (8151A)	TAL Metals (6010D) (Total)	TAL Metals (6010D) (Dissolved)	Mercury (7471B)	Cyanide (9012B)	PCBs (8082)	1-4 Dioxane (8270E SIM)	1-4 Dioxane (8270E)	SPLP PFAS (1312)	TOC (9060A)	pH (9040)	Inorganic Anions (300.0)	Artificial Sweeteners (PPCP)	Boron (6010D)	Liquid IDW Parameters [b]	Solid IDW Parameters [c]
Groundwater	MW-8D	360257-GW-MW-08D-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater	MW-9S	360257-GW-MW-09S-YYYYMMDD	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
Groundwater Field Duplicate	MW-2	360257-GW-DUP-01	Mid-point of the screen	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
IDW Samples																								
Solid IDW	Drums	360257-IDW-Solid-01	Composite sample of solid waste																				X
Liquid IDW	Site Frac Tank	360257-IDW-Liquid-01	Composite sample of liquid waste																			X	
Additional QA/QC Samples																							
Drilling Source water	Source water	360257-DW-01-YYYYMMDD	From drilling water at the start of the field event.	X																			
PFAS Free Water	N/A	360257-EB-01-YYYYMMDD	One per 20 samples	X																			
Trip Blanks	N/A	360257-TB-01-YYYYMMDD	One per VOC containing cooler			X																	

Notes:

a. Soil samples for analysis of VOCs will be collected from 0- to 6-inches below ground surface and 6- to 12-inches below ground surface in place of the 0- to 2-inch and 2- to 12-inch intervals, respectively.
b. Liquid IDW parameters include the following methods: PFAS, TCL VOCs, TCL SVOCs, RCRA metals, PCBs, reactive cyanide, reactive sulfide, total organic halides, corrosivity, reactivity, reactivity, paint filter test, and flash point.
c. Solid IDW parameters include the following methods: SPLP PFAS, TCLP VOCs, TCLP SVOCs, TCLP RCRA metals, TCLP herbicides, TCLP pesticides, TCLP PCBs, reactive sulfide, reactive cyanide, total organic halides, corrosivity. reactivity, paint filter test, and flash point

EB = equipment blank
EPA = U.S. Environmental Protection Agency
FB = field blank
ID = identification
IDW = investigation-derived waste
MW = monitoring well
MS/MSD = matrix spike/matrix spike duplicate
N/A = Not Applicable
PCB = polychlorinated biphenyl
PFAS = per- and polyfluoroalkyl substances
PPCP = pharmaceuticals and personal care products
QA = quality assurance
QC = quality control
SB = soil boring
SPLP = Synthetic Precipitation Leaching Procedure
SVOC = semivolatile organic compound
TAL = Target Analyte List
TBD = to be determined
TCLP = Toxicity Characteristic Leaching Procedure
VOC = volatile organic compound

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Attachment B.
Site-Specific Addendum to the Generic Health and Safety Plan for Hazardous Waste and Environmental Services

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Pound Ridge Square Shopping Center (360257)
Westchester County, New York

Site-Specific Addendum to the General Health and Safety Plan for Hazardous Waste and Environmental Services

Prepared by

EA Engineering and Geology, P.C.
333 West Washington Street, Suite 300
Syracuse, New York 13202

August 2025
Version: Revision 0

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This document shall be maintained onsite with the Project Work Plan and the General Health and Safety Plan (GHASP) for Hazardous Waste and Environmental Services (July 2024).

CLIENT	**New York State Department of Environmental Conservation**
PROJECT NAME/NUMBER	Pound Ridge Square Shopping Center (360257)
SITE LOCATION/ADDRESS	55 Westchester Avenue, Pound Ridge, New York 10576
SITE DESCRIPTION/HISTORY	Former commercial dry-cleaner/shopping center, Westchester County, New York
WORK DESCRIPTION (PROVIDE SUFFICIENT DETAIL TO UNDERSTAND EXPOSURE RISKS) (REFERENCE PROPOSAL OR WORK PLAN)	The scope of work covered by this Health and Safety Plan (HASP) Addendum includes the following: • Surface soil sampling • Drilling for soil and bedrock boring installations and sampling and monitoring well installation and development • Sediment and Surface water sampling from a local pond and creek • Monitoring well gauging and sampling • Investigation-derived waste (IDW) storage and disposal

APPROVALS:

This Addendum to the July 2024 GHASP has been prepared under the supervision and review of a Certified Industrial Hygienist certified by the American Board of Industrial Hygiene.

Final to be signed

Program Health and Safety Manager Date
Mark Fisher, Certified Industrial Hygienist (No. 6764CP)

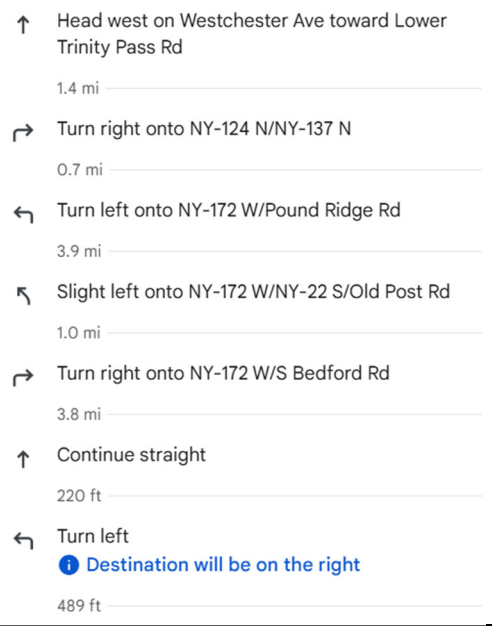
Final to be signed

Project Manager Date

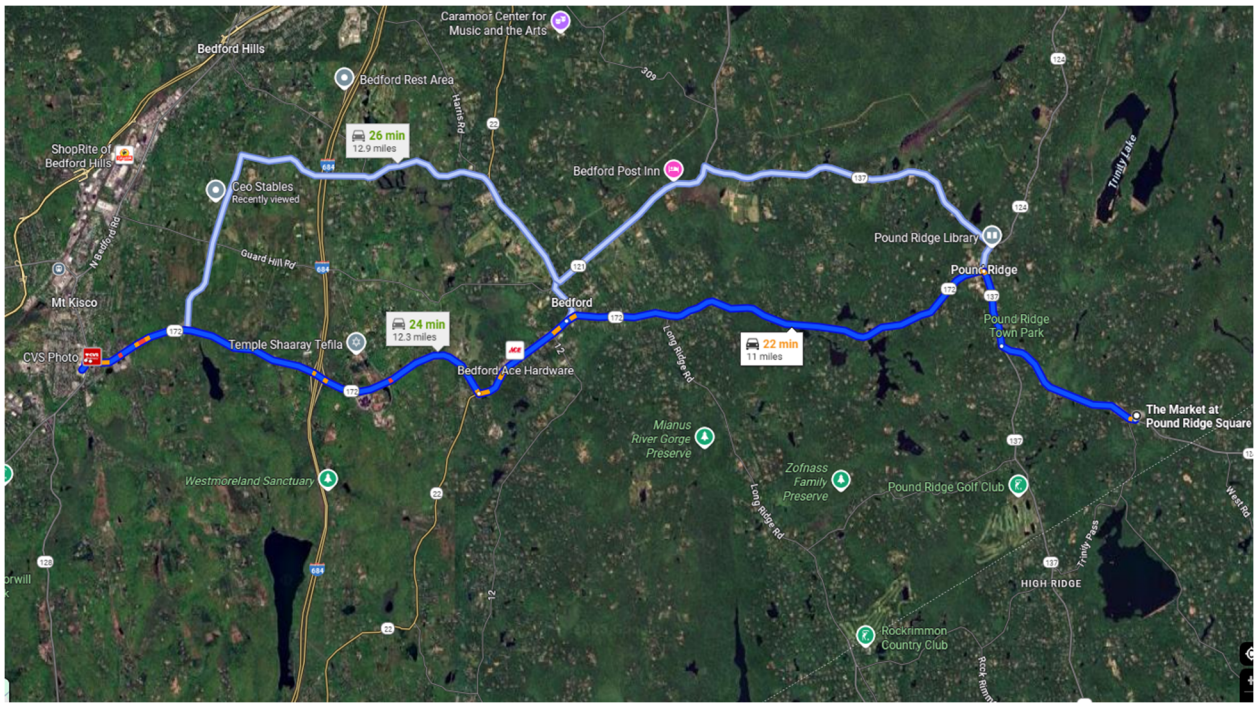
EMERGENCY CONTACT INFORMATION

Contacts	Name	Phone Number(s) Work/Cell
Project Manager	Patrick Gannon	845-238-8203
Program Health and Safety Manager	Mark Fisher, CIH	Office: 443-541-4132 Mobile: 402-215-1741
Site Manager	Vincent Farruggia	716-846-5180
Site Safety and Health Officer	Vincent Farruggia	716-846-5180
Client Contact	Brittany O'Brien-Drake	518-402-9672
Regulatory Contact (as applicable)	Brittany O'Brien-Drake	518-402-9672
Poison Control	NA	800-222-1222
U.S. Environmental Protection Agency National Response Center	NA	800-424-8802
EA Medical Services	AllOne Health Resources (Physician – On Call)	800-350-4511
Corporate Health and Safety Director	Robert Marcase	410-329-5192 717-586-9878
CHEMTREC	Not available	800-424-9300
Federal OSHA Hotline	Not available	800-321-6742
Other (as applicable)		

MEDICAL EMERGENCY

Distance to Nearest Hospital (with Emergency Room):	11.0 miles
Hospital Name:	Emergency Department – Northern Westchester Hospital
Hospital Phone:	1-914-666-1254
Hospital Address:	400 E Main Street, Mount Kisco, New York 10549
Route to Hospital (attach map on next page):	

ROUTE TO HOSPITAL



HAZARDS OF CONCERN: Check as many as are applicable. for Chemical, Physical, and Biological Hazards see Section 3 of Site Characterization and Remediation GHASP.

Hazards of Concern

x	Heat Stress		Reactive		Oxygen deficient	x	Insect bite
x	Cold Street	x	Noise		Corrosive	x	Snake bite
	Explosion/Fire		Inorganic		Toxic	x	Vegetation
x	Biological	x	Organic		Inert		Electrical
	Radiological	x	Utilities	x	Excavations		
	Volatile	x	Lifting	x	General Physical		
	Confined Space (Section 9 of GHASP	x	Other, specify: Sediment and surface water sampling				

CONTROLS OR PROTECTIVE MEASURES: Check as many as are applicable.

Controls or Protective Measures

x	Pre-Entry Briefing/Safety Meetings	x	Personal Protective Equipment	x	Site Control	x	Operator Training	x	Permits
x	Work Practices								
	Other								

Exposure Pathways

x	Inhalation	x	Ingestion	x	Dermal		Injection

Potentially Impacted Media

	Air	x	Dust/Soil	x	Surface Water	x	Groundwater
x	Sediment		Other				

Fire/Explosion Potential

	High		Medium	x	Low

Surrounding Population

	Residential	x	Industrial		Rural	x	Urban

ANTICIPATED LEVEL OF CHEMICAL EXPOSURE: (List potential contaminants of concern (Choose from Table 1 below), media, and concentration levels if known. Include previous air sampling if any):

	High		Medium	x	Low

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at 400 parts per trillion (ppt) in groundwater. Former dry cleaners property may have low concentrations of volatile organic compounds (VOCs) in the soil. (<100 parts per billion [ppb] for chlorinated volatile organic compounds [CVOCs]).

OVERALL HAZARD RANKING[(1)]:

	High		Medium	x	Low

JUSTIFICATION OF HAZARD RANKING[(1)]: (brief narrative of how work activities may encounter hazards and their controls):

Drilling activities will present physical hazards to employees, chemical hazards from this investigation are ranked as low, due to the low PFAS contamination, eliciting this investigation. Sediment and surface water sampling will be adjacent to water bodies and will require that the staff uses waders and personal flotation devices (PFDs).

Notes for Table 1:

(1) Only show chemicals that apply to site in Table 1 and delete rest.

(2) Obtain the following value for spreadsheet from Table 1:

   a. OSHA PEL for chemical in ppm

(3) Determine "PID Correction Factor" value from RAE Systems Response Factors (attached):

   a. Value determined on PID eV bulb used.

(4) "PID Reading at Exceedance Result" will determine the PID measurement that should not be exceeded in the Breathing Zone for EA employees. If this value is exceeded for 30 seconds or greater consistently then STOP WORK AUTHORITY will be invoked, and all work will stop and the SSHO or Field Team Leader will be notified. The SSHO or Field Team Leader will notify the Program Health and Safety Officer (Mark Fisher, CIH [443-541-4132]) and it will be determined what corrective actions will be taken to eliminate the safety concern(s).

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Table 1. Chemical Hazards

Compound	PEL or TLV/STEL	IDLH	Route of Exposure	Symptoms
VOLATILE ORGANIC COMPOUNDS				
Diesel Fuel (total hydrocarbons) *Skin*	100 mg/m^3 (approximately 15 ppm)	-	Inhalation, Ingestion, Skin/Eye Contact	Dermatitis.
Gasoline	300 ppm/500 ppm	Ca	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid); possible liver, kidney damage; [potential occupational carcinogen]
1,2-Dichloroethylene	200 ppm	1,000 ppm	Inhalation, Ingestion, Skin/Eye Contact	Irritated eyes, respiratory system; CNS depressant.
Tetrachloroethylene (Perchloroethylene)	25 ppm/100 ppm C 200 ppm	Ca 150 ppm	Inhalation, Ingestion, Absorption, Skin/Eye Contact	Irritated eyes, nose, throat; nausea, flush face, dizziness, headache, liver damage.
Trichloroethylene	10 ppm/25 ppm C 200 ppm	Ca 1,000 ppm	Inhalation, Ingestion, Absorption, Skin/Eye Contact	Irritated eyes, skin; headache, dizziness, vertigo, visual distortion, fatigue, giddiness, vomiting, dermatitis, nausea.
Vinyl chloride	1 ppm/C 5 ppm 0.5 ppm AL	Ca	Inhalation, Skin/Eye Contact (with liquid)	Weakness, abdominal pain, GI bleeding, enlarged liver.
PFAS Compounds				
Perfluoroisobutylene	0.01 ppm	NA	Ingestion, skin/eye contact, minimal inhalation risk	Increased cholesterol levels, possible kidney or liver damage, reproductive effects, reduced ability of the body's immune system, increased risk of high blood pressure or preeclampsia in pregnant women (potential occupational carcinogen).
perfluorobutyl ethylene	100 ppm	NA	Ingestion, skin/eye contact, minimal inhalation risk	Increased cholesterol levels, possible kidney or liver damage, reproductive effects, reduced ability of the body's immune system, increased risk of high blood pressure or preeclampsia in pregnant women (potential occupational carcinogen).

Compound	PEL or TLV/STEL	IDLH	Route of Exposure	Symptoms
ammonium perfluorooctanoate	0.01 mg/m3	NA	Ingestion, skin/eye contact, minimal inhalation risk	Increased cholesterol levels, possible kidney or liver damage, reproductive effects, reduced ability of the body's immune system, increased risk of high blood pressure or preeclampsia in pregnant women (potential occupational carcinogen).
ACIDS/CORROSIVES				
Hydrochloric acid (as hydrogen chloride gas)	C 2 ppm	50 ppm	Inhalation, Absorption, Skin/Eye Contact	Irritation of skin, eyes, mucous membranes, esophagus, stomach; nausea, vomiting, intense thirst, diarrhea, erosion of exposed teeth
Nitric acid	2 ppm/4 ppm	25 ppm	Inhalation, Absorption, Skin/Eye Contact	Corrosive to body tissue. Dental erosion, irritation, corrosive burns of skin, eyes, upper respiratory tract, delayed pulmonary edema, pneumonitis, bronchitis.
Sulfuric acid	0.2 mg/m^3 thoracic fraction 1 mg/m^3	15 mg/m^3	Inhalation, Absorption, Skin/Eye Contact	Immediately damaging to any body tissue it contacts at high concentrations. Severe or permanent damage to eyes, upper respiratory tract and lung damage.
Sodium Hydroxide	C 2 mg/m^3	10 mg/m^3	Inhalation, Ingestion, Skin/Eye Contact	Dissolves living tissue. Immediate burning to upper digestive tract, esophagus, stomach; painful swallowing; excessive salivation; excessive fluid surrounding lips, chin, tongue, coffee-ground like vomit, rapid/faint pulse, cold clammy skin, adhesion of lid to eyeball.
OTHER				
Ammonia	25 ppm/35 ppm	300 ppm	Inhalation, Ingestion (solution), Skin and/or Eye Contact (solution/liquid)	Irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema; pink frothy sputum; skin burns, vesiculation; liquid: frostbite.
Portland Cement	1 mg/m^3 (E, R)	5,000 mg/m^3	Inhalation, Ingestion, Skin and/or Eye Contact	Irritation eyes, skin, nose; cough, expectoration; exertional dyspnea (breathing difficulty), wheezing, chronic bronchitis; dermatitis.

Compound	PEL or TLV/STEL	IDLH	Route of Exposure	Symptoms
Silica, Crystalline (Quartz, Cristobalite, Tridymite)	0.025 mg/m^3 respirable fraction	Ca 25 mg/m^3	Inhalation, Skin and/or Eye Contact	Cough, dyspnea (breathing difficulty), wheezing; decreased pulmonary function, progressive respiratory symptoms (silicosis); irritation eyes; [potential occupational carcinogen].

Notes:

(a) The PEL and IDLH are representative of coal tar pitch volatiles.

AL = Action level (Occupational Safety and Health Administration).
C = Ceiling limit.
Ca = Carcinogen.
CNS = Central nervous system.
E = The value is for particulate matter containing no asbestos and <1% crystalline silica.
f/cc = Fibers per cubic centimeter of air.
GI = Gastrointestinal.
I = Inhalable fraction.
IDLH = Immediately dangerous to life and health.
IFV = Inhalable fraction and vapor.
mg/m3 = Milligram per cubic meter.
N.D. = Not determined.
PEL = Permissible exposure limit.
ppm = Part per million.
R = Respirable fraction.
Skin = Skin absorption can contribute to overall body dose.
STEL = Short-term exposure limit (15 minutes).
TLV = Threshold limit value.

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Working Alone

x	No		Yes	If yes, explain precautions

UTILITY CLEARANCE

One-Call Utility Services

	Not required	x	Required	If required, explain EA's subcontractor ADT will handle the one-call for all proposed boring

Facility-Provided Clearance or Permit

x	Not required		Required	If yes, explain

Geophysical, Pipe Locator, or Other Contractor

x	Not required	x	Required	If yes, explain See response above

CONTINGENCY PLANS: Summarize below (Evacuation, assembly point, contingency leader)

In the event of an evacuation on site, crews will gather at the laydown area adjacent to the frac tank and the drums. The laydown area is expected to be on the eastern side of the property.

DEVIATIONS/VARIATIONS FROM GHASP

None.

MEDICAL SURVEILLANCE

Do Hazardous Waste Site Workers and Supervisor (s) have Documentation of Required Medical Exams?

	Yes		**No**	If no, explain. **Available upon request**

TRAINING REQUIRED

x	HAZWOPER Worker		HAZWOPER Supervisor	x	First Aid/CPR		Confined Space
	8-Hour Annual HAZWOPER Refresher						

Tailgate safety meetings will occur at a daily frequency and will consist of the field team (including contractors). The tailgate safety meeting is intended to discuss anticipated production for the day, safety and health protection flaws from previous days, and proposals for improving field work safety.

PROTECTIVE EQUIPMENT: Protective equipment should be specified by the type of task and site (e.g., soil boring and sampling at landfill). Indicate type and/or material, as necessary. Use additional pages, as necessary.

TASK 1: SEDIMENT AND SURFACE WATER SAMPLING

Initial Level (select one)

	A		B		C	x	D

Respiratory

x	Not needed		Cartridge
	SCBA, Airline		Escape mask
	APR		Other

Protective Clothing

	Not needed		Tyvek coverall
	Encapsulating suit		Saranex coverall
	Splash suit		Coverall
	Apron	x	Other: long sleeves, Type III or better PFD

Head and Eye

	Not needed		Goggles
x	Safety glasses	x	Hard hat
	Face shield		

Gloves

	Not needed	x	Gloves
	Undergloves		Overgloves
	Gloves		Other

Hearing Protection

x	Not needed		Muffs
	Plugs		Other

Boots

	Not needed		Overboots
x	Safety boots		Other

TASK 2: SOIL BORING INSTALLATION/SOIL SAMPLING

Initial Level (select one)

	A		B		C	x	D

Respiratory

x	Not needed		Cartridge
	SCBA, Airline		Escape mask
	APR		Other:

Protective Clothing

	Not needed		Tyvek coverall
	Encapsulating suit		Saranex coverall
	Splash suit		Coverall
	Apron	x	Other: Long sleeves, Type III or better PFD if within 5 feet of the inlet/shoreline

Head and Eye

	Not needed		Goggles
x	Safety glasses	x	Hard hat
	Face shield		

Gloves

	Not needed	x	Gloves: Nitriles
	Undergloves		Overgloves
x	Gloves		Other

Hearing Protection

	Not needed		Muffs
x	Plugs		Other

Boots

	Not needed		Overboots
x	Safety boots		Other

TASK 3: MONITORING WELL INSTALLATION

Initial Level (select one)

	A		B		C	x	D

Respiratory

x	Not needed		Cartridge: Half or full face, P100 carts
	SCBA, Airline		Escape mask
	APR		Other

Protective Clothing

	Not needed		Tyvek coverall
	Encapsulating suit		Saranex coverall
	Splash suit		Coverall
	Apron	x	Other: Long sleeves, Type III or better PFD if within 5 feet of the inlet/shoreline

Head and Eye

	Not needed		Goggles
x	Safety glasses	x	Hard hat
	Face shield		

Gloves

	Not needed	x	Gloves: Nitriles
	Undergloves		Overgloves
	Gloves		Other

Hearing Protection

	Not needed	x	Muffs
	Plugs		Other

Boots

	Not needed		Overboots
x	Safety boots		Other

TASK 4: MONITORING WELL DEVELOPMENT/GROUNDWATER SAMPLING

Initial Level (select one)

	A		B		C	x	D

Respiratory

x	Not needed		Cartridge: Half or full face, P100 carts
	SCBA, Airline		Escape mask
	APR		Other

Protective Clothing

	Not needed		Tyvek coverall
	Encapsulating suit		Saranex coverall
	Splash suit		Coverall
	Apron	x	Other: Long sleeves, Type III or better PFD if within 5 feet of the inlet/shoreline

Head and Eye

	Not needed		Goggles
x	Safety glasses		Hard hat
	Face shield		

Gloves

	Not needed	x	Gloves
	Undergloves		Overgloves
	Gloves		Other

Hearing Protection

x	Not needed		Muffs
	Plugs		Other

Boots

	Not needed		Overboots
x	Safety boots		Other

TASK 5: DECONTAMINATION/INVESTIGATION-DERIVED WASTE MANAGEMENT

Initial Level (select one)

	A		B		C	x	D

Respiratory

x	Not needed		Cartridge: Half or full face, P100 carts
	SCBA, Airline		Escape mask
	APR		Other

Protective Clothing

	Not needed		Tyvek coverall
	Encapsulating suit		Saranex coverall
	Splash suit		Coverall
	Apron	x	Other: Long sleeves, Type III or better PFD if within 5 feet of the inlet/shoreline

Head and Eye

	Not needed		Goggles
x	Safety glasses		Hard hat
	Face shield		

Gloves

	Not needed	x	Gloves
	Undergloves		Overgloves
	Gloves		Other

Hearing Protection

x	Not needed		Muffs
	Plugs		Other

Boots

	Not needed		Overboots
x	Safety boots		Other

MONITORING EQUIPMENT: Monitoring equipment should be specified by task and type of site. Indicate type, as necessary. Attach additional sheets, as necessary.

TASKS: Sediment and surface water sampling, soil boring installation, monitoring well installation, monitoring well development, and soil vapor point installation.

For Calibration Procedures, see GHASP or attach if different. Attached table specifies monitoring requirements and action levels.

Only equipment to be used for project are listed below.

Instrument	Action Guidelines
Dust Meter	>150 µg/L over a time-weighted average of 15 minutes, or instantaneous >300 µg/L reading
Photoionization detector	>5 ppm reading at the perimeter >25 ppm in work area

Type:

Photoionization Detector (specify)

x	COCs			BTEX
	MTBE			Other

Photoionization Detector (specify)

	11.7 ev		9.8 ev
x	10.6 ev		Other

Type: Photovac or MiniRae

Specify: (COCs): CVOCc,MTBE, BTEX, dust from intrusive work (e.g., drilling, well installation).

Flame ionization detector: COCs

Dust Monitor/Dust Track II: Nuisance

Type: Part of the CAMP under DER 10.

Radiation Survey Meter — Specify: (Radioisotopes; alpha, beta, gamma, x-ray)

> Background	Contact Radiation Safety Officer/ Site Safety and Health Officer and Project Manager
3 X Background	Notify CIH and stop work
2.5 mR/hour	Interrupt task/evacuate

(X) Not needed NOTE: Annual exposure not to exceed 100 mrem/year or 50 urem/hour average

Other Instruments Specify:

DECONTAMINATION PROCEDURES

Summarize personnel decontamination/containment and disposal method

	Not needed

Staff will had safety toe boots, long sleeves, pants, hardhats, ear muffs, safety glasses, and nitrile gloves. Non-dedicated equipment will be decontaminated with Alconox detergent soap. Dedicated equipment will be disposed of as municipal waste.

Summarize equipment decontamination/containment and disposal method

	Not needed

Equipment will be decontaminated using either a steam cleaner or an Alconox wash/rinse between drilling locations. The decontamination water will be transferred from decontamination pad and placed in a DOT 55-gallon drum for containment and disposal. Drum will be staged at an approved location.

Summarize heavy equipment decontamination/containment and disposal method

	Not needed

See section above. Decon fluids will be collected and containerized with IDW fluids in the frac tank.

Investigation-derived waste (IDW) and waste disposal

	Not needed

IDW is expected for this field event. It will be containerized as stipulated in the above section.

Project Site:	Pound Ridge Square Shopping Center (360257)
EA Project No.	1602543

I have read the Health and Safety Plan (s) and have been briefed on the nature, level, and degree of exposure likely as a result of participation of field activities. I agree to conform to all the requirements of this Plan.

Name	Signature	Affiliation	Date

SITE ENTRY AND EXIT LOG

Project Site:	Pound Ridge Square Shopping Center (360257)
EA Project No.	1602543

Date	Name	Representing	Time	
			In	Out

HEALTH AND SAFETY ACTIVITY REPORT

Project Site:	Pound Ridge Square Shopping Center (360257)
EA Project No.	Westchester, New York
Weather Conditions	
Onsite Hours (From/To)	

Changes in Personal Protective Equipment Levels*	Work Operations	Reasons for Change

* Only Site Safety and Health Officer may change personal protective equipment levels, using only criteria specified in GHASP.

Site Safety and Health Plan Violations	Corrective Action Specified	Corrective Action Taken (Yes/No)

Observations and Comments:	

COMPLETED BY:

Site Health and Safety Supervisor Date

ENVIRONMENTAL MONITORING RECORD

Site:	Pound Ridge Square Shopping Center (360257)		
Project No.	1602543		
Instrument:			
Calibration:	Gas:	Conc.:	Span:

Time	Monitoring Location	Reading	Corrective Action Taken*

* Corrective actions taken must be documented whenever readings at or above action levels are reached.

COMMENTS:	

RECORDED BY:

Site Health and Safety Supervisor Date

Environmental Monitoring Requirements

Instrument	Location of Monitoring	Frequency	General Action Level	Site-Specific Action Level	Response
Total Volatile Organics Detector (photoionization detector/flame ionization detector)	Breathing Zone	Initially and every 30 minutes	Above background	Same or Specify	Begin perimeter monitoring. Upgrade to Level C personal protective equipment
			>5 parts per million	Same or Specify	Withdraw from site, prepare to upgrade to Level B
	Perimeter monitoring	2 times per day	Above action level established in Site-Specific Health and Safety Plan	Above action level established in Site-Specific Health and Safety Plan	Shut down operations and identify source of contamination and cover.
Combustible Gas Indicator	Borehole, excavation or well opening at ground surface	For each sample, initially and every 10 minutes	0-10% of Lower Explosive Level[(a)]	0-10% of Lower Explosive Level[(a)]	Continue monitoring
			10-20% of Lower Explosive Level	10-20% of Lower Explosive Level	Monitor continuously, prepare to shutdown
Oxygen Meter	Breathing Zone	Initially and every 30 minutes	>20% of Lower Explosive Level	>20% of Lower Explosive Level	Shutdown immediately, evacuate
Dust Monitor (if necessary)	Breathing Zone	Initially and every 30 minutes	<19.5% or >22%	<19.5% or >22%	Shutdown immediately, evacuate
			>1 milligram per cubic meter	Same or Specify	Upgrade to Level C personal protective equipment and monitor continuously

Notes:
[(a)] The readings must remain <10% of lower explosive limit in order to enter an excavation or other area containing combustible gas.
General action levels represent worst-case conditions for unknown contaminants/concentrations. This table can be modified to reflect site-specific conditions.
Action levels represent concentrations or percentages that are sustained for the monitoring period specified under "Frequency" and do not reflect peak levels.

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Attachment C. Field Forms

FIELD CALIBRATION FORM
Horiba U-52
pH, CONDUCTIVITY, AND TURBIDITY

CALIBRATION
DATE:
TIME:
METER ID:

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0		

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49		

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU		

COMMENTS

SIGNATURE

INVESTIGATIVE DERIVED WASTE INVENTORY SHEET

Drum ID	Drum Contents	Monitoring Well ID	Accumulation Start Date	Accumulation End Date	Gallons

(a) Purge water, decontamination fluids

NOTES: ID = Identification
IDW = Investigative Derived Waste

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EA Engineering, and Geology P.C.

MONITORING WELL DEVELOPMENT LOG

Well I.D.:	**EA Personnel:**	**Client:**
Location:	**Well Condition:**	**Weather:**
Sounding Method:	**Gauge Date:** **Gauge Time:**	**Measurement Ref:**
Stick Up/Down (ft):	**PID Headspace Reading:**	**Well Diameter (in):**

Purge Date:	**Purge Time:**
Purge Method:	**Field Technician:**

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Pump Type:**
C. Liquid Depth (ft) (A-B):	**F. Three Well Volumes (gal) (E3):**	**Pump Intake Depth:**

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (mS/cm)	Turbidity (ntu)	DO (mg/L)	Temperature (^{o}C)	ORP (mV)	DTW (ft btoc)	Rate (gpm)	Volume (gallons)

Total Quantity of Water Removed (gal): _____ **Personnel:** _____

COMMENTS AND OBSERVATIONS: _____

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

GROUNDWATER SAMPLING PURGE FORM

Well I.D.:	**EA Personnel:**	**Client:** NYSDEC
Location:	**Well Condition:**	**Weather:**
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**

Purge Date:	**Purge Time:**
Purge Method:	**Field Technician:**

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Pump Type:**
C. Liquid Depth (ft) (A-B):	**F. Three Well Volumes (gal) (E3):**	**Pump Intake Depth:**

Water Quality Parameters

Time (hrs) 3-5 min	Temperature (oC) ± 1 °C	pH (pH units) ± 0.1 pH	ORP (mV) ± 10 mV	Conductivity (S/m) ± 3%	Turbidity (ntu) ± 10 NTUs	DO (mg/L) ± 10% / <0.5	DTW (ft btoc) ± 0.3 feet	Rate (Lpm) 0.1-0.5 Lpm	Volume (liters)

Total Quantity of Water Removed (gal): _____ **Sampling Time:** _____

Samplers: _____ **Split Sample With:** _____

Sampling Date: _____ **Sample Type:** _____

COMMENTS AND OBSERVATIONS: _____

EA®

SOIL BORING LOG

Coordinates: Northing _____ Easting: _____
Surface Elevation: _____
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	**Client:** NYSDEC **Project:**	**Location:**
Drilling Method:		**Soil Boring Number:**
Sampling Method:		**Sheet 1 of**

					Drilling	
Water Level:					**Start**	**Finish**
Time:					DATE:	DATE:
Date:					TIME:	TIME:

Surface Conditions:
Weather:
Temperature:

Blow Counts (140-lb)	**Ft. Driven/ Ft. Recov.**	**Boring Diagram**	**PID (ppm)**	**Depth in Feet**	**USCS Log**
				0	
				1	
				2	
				3	
				4	
				5	
				6	
				7	
				8	
				9	
				10	
				11	
				12	
				13	
				14	
				15	
				16	
				17	
				18	
				19	
				20	
				21	
				22	
				23	
				24	
				25	
				26	
				27	
				28	
				29	

Monitoring Well Construction Information

Monitoring Well Diameter: _____ in
Bottom of Monitoring Well: _____ ft bgs
Stick Up or Flush Mount: _____
Screen Interval: _____ To _____ ft bgs
Riser Interval: _____ To _____ ft bgs
Sand Pack Interval: _____ To _____ ft bgs
Bentonite Seal: _____ To _____ ft bgs
Grout Interval: _____ To _____ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: _____ ft
Bottom of Tubing: _____ ft
Top of Sand Pack: _____ ft
Top of Bentonite Seal: _____ ft

Logged by: _____ Date: _____
Drilling Contractor: _____ Driller: _____

EA Engineering, P.C. and Its Affiliate
EA Science and Technology

SOIL BORING LOG

Coordinates: Northing _____ Easting: _____
Surface Elevation:
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	**Client:** NYSDEC **Project:**	**Location:**
Drilling Method:		**Soil Boring Number:**
Sampling Method:		**Sheet 2 of**

					Drilling	
Water Level:					**Start**	**Finish**
Time:					DATE:	DATE:
Date:					TIME:	TIME:

Surface Conditions:
Weather:
Temperature:

Blow Counts (140-lb)	**Ft. Driven/ Ft. Record**	**Boring Diagram**	**PID (ppm)**	**Depth in Feet**	**USCS Log**
				30	
				31	
				32	
				33	
				34	
				35	
				36	
				37	
				38	
				39	
				40	
				41	
				42	
				43	
				44	
				45	
				46	
				47	
				48	
				49	
				50	
				51	
				52	
				53	
				54	
				55	
				56	
				57	
				58	
				59	

Monitoring Well Construction Information

Monitoring Well Diameter: _____ in
Bottom of Monitoring Well: _____ ft bgs
Stick Up or Flush Mount: _____
Screen Interval: _____ To _____ ft bgs
Riser Interval: _____ To _____ ft bgs
Sand Pack Interval: _____ To _____ ft bgs
Bentonite Seal: _____ To _____ ft bgs
Grout Interval: _____ To _____ ft bgs

Soil Vapor Point Installation Information

Depth of Soil Vapor Point: _____ ft
Bottom of Tubing: _____ ft
Top of Sand Pack: _____ ft
Top of Bentonite Seal: _____ ft

Logged by: _____ Date: _____
Drilling Contractor: _____ Driller: _____

FIELD CALIBRATION FORM

Site Name:

INSTRUMENT:	INSTRUMENT ID No:
OPERATOR:	WEATHER:
SPAN GAS TYPE:	DATE:
CALIBRATION NOTES:	
COMMENTS:	
SIGNATURE:	DATE:

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EA Engineering, Science, and Technology, Inc., PBC

Sediment Sampling Log

Site Name	**Project No.**
Site Location	**Date/Time**
Page of	**Field Technician**
Surface Conditions:	
Weather / Temperature:	
Drilling Equipment	
Sample Collection Equipment/Method	
Analyses	

Sample Interval (in.)	PID (ppm)	Sample Date	Sample Time	Sample ID	QA/QC Collected	Sample Appearance / Description

Logged by: _____ **Signature** _____

Surface Water Sampling Log

Site Name	Project No.
Site Location	Date/Time
Page of	Field Technician

Surface Conditions:

Weather / Temperature:

Drilling Equipment

Sample Collection Equipment/Method

Analyses

Sample Interval (in.)	PID (ppm)	Sample Date	Sample Time	Sample ID	QA/QC Collected

Sample Appearance / Description

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (mS/cm)	Turbidity (ntu)	DO (mg/L)	Temperature (°C)	ORP (mV)	DTW (ft btoc)	Rate (gpm)	Volume (gallons)

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (mS/cm)	Turbidity (ntu)	DO (mg/L)	Temperature (°C)	ORP (mV)	DTW (ft btoc)	Rate (gpm)	Volume (gallons)

Water Quality Parameters

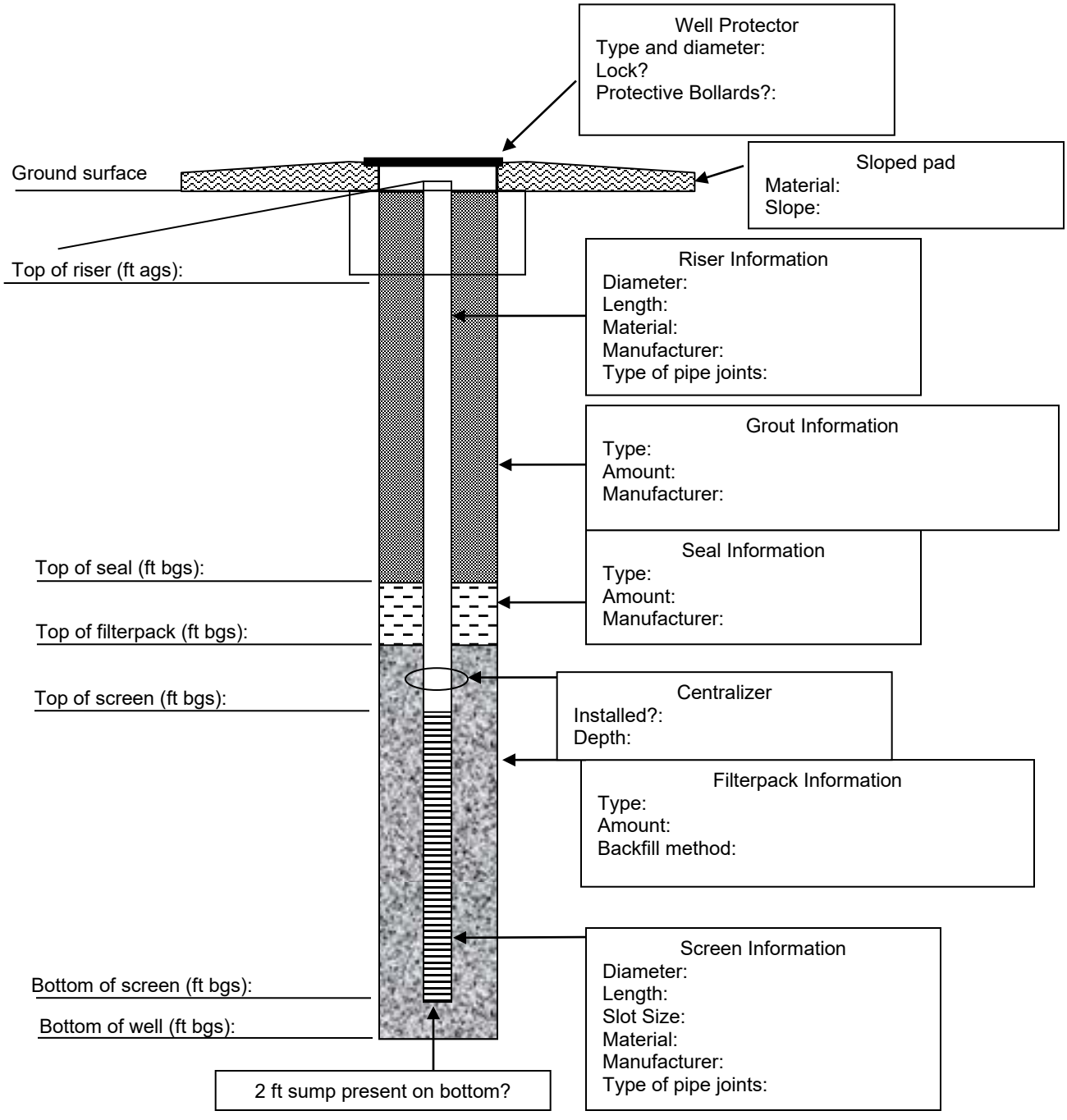
Time (hrs)	pH (pH units)	Conductivity (mS/cm)	Turbidity (ntu)	DO (mg/L)	Temperature (°C)	ORP (mV)	DTW (ft btoc)	Rate (gpm)	Volume (gallons)

Logged by: ______________________ Signature ______________________

RECORD OF MONITORING WELL CONSTRUCTION

(FLUSH MOUNT)

	Monitoring Well/Soil Boring ID No.: Permit No.:
Project Name/ Project No.:	Date Installed: Time Finished:
Location:	Depth to Water:
Site Geologist:	Drilling Method:
Borehole Diameter:	Outer Casing?:



Note: All features not to scale

GROUNDWATER MONITORING WELL INSPECTION

SITE/PROJECT NAME: _____ PROJECT NUMBER: _____

DATE OF INSPECTION: _____ INSPECTOR: _____

WELL DESIGNATION: _____

WELL LOCATION: _____

Outward Appearance

Flushmount Diameter	_____ inches	N/A [ ]	
Approximate Stickup Height	_____ feet	N/A [ ]	
Integrity of Protective Casing	Describe: _____		
Protective Casing Material	Steel [ ]	Stainless Steel [ ]	Other _____
Protective Casing Width or Dia.	_____ inches		
Weep Hole in Protective Casing	Yes [ ]	No [ ]	
Surface Seal/Apron Material	Cement [ ]	Bentonite [ ]	Not apparent [ ] Other _____
Integrity of Surface Seal/Apron	Describe: _____		
Surface Drainage	Away from Wellhead [ ]	Toward Wellhead [ ]	
Bollards Present?	Yes [ ]	No [ ]	Describe: _____
Well ID. Visible?	Yes [ ]	No [ ]	Describe: _____
Lock Present and Functional?	Yes [ ]	No [ ]	Describe: _____
Photograph Taken? Photo #	Yes [ ]	No [ ]	Describe: _____

Inner Appearance

Integrity of Well Casing	Describe: _____		
Integrity of Cap Seal	Describe: _____		
Surface Water in Casing?	Yes [ ]	No [ ]	Describe: _____
Well Casing Diameter	_____ inches		
Well Casing Material	PVC [ ]	Steel [ ]	Stainless Steel [ ]
Inner Cap	Threaded [ ]	Slip [ ]	Expansion Plug [ ] None [ ]
Reference/Measuring Point	Groove [ ]	Indelible Mark [ ]	None [ ]
Evidence of Double Casing?	Yes [ ]	No [ ]	Describe: _____

Downhole

Odor	Yes [ ]	No [ ]	Describe: _____
PID Reading	_____ ppm		
Depth to Water (to top of casing)	_____ feet (nearest 0.01)	Depth to LNAPL	_____ feet (nearest 0.01) N/A [ ]
Total Well Depth (to top of casing)	_____ feet (nearest 0.1)		
Sediment (Hard/Soft Bottom)	Describe: _____		

Additional Comments:

_____

_____

_____

_____

_____