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July 21, 2020

Mr. Daniel Lanners, P.E.  
Division of Environmental Remediation  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, NY 12233-7014

**Subject:      Expanded Soil Vapor Investigation Work Plan  
                 Duracell Inc. Site (#360011)  
                 Sleepy Hollow, Westchester County, New York**

Dear Mr. Lanners,

On behalf of The Gillette Company LLC (Gillette), AECOM has prepared this letter comprising the Expanded Soil Vapor Investigation Work Plan (ESVIWP) to describe proposed activities at the former Duracell Inc. site located at 60 Elm Street in Sleepy Hollow, New York (NYSDEC Registry No. 360011; hereinafter, the Site).

The purpose of this investigation is to further evaluate soil vapor for volatile organic compounds (VOCs) at and near the Site. This SVIWP has been prepared based on the results of the March 2019 and February 2020 soil vapor intrusion (SVI) investigation that focused on the constituents detected in soil vapor samples collected in November 2017. Results of the March 2019 and February 2020 SVI activities were presented in draft reports submitted to the NYSDEC in June 2019 and April 2020, respectively.

A summary of the proposed scope of work is provided below.

#### Scope of Work Summary

This phase of investigation will consist of the collection of passive soil-gas (PSG) samples, along with subsequent Membrane Interface Probe-Hydraulic Profiling (MIHPT) and soil sampling at select locations. Generally, sampling will consist of one PSG collection kit per sample location. The final number and exact placement of samples will be determined by AECOM based on additional site information and access to sample locations. Further details on locations and sample quantities are presented in **Figure 2**. Following the review of the PSG results MIHPT will be used to investigate the areas identified in the PSG results. As

PSG and MIHPT results are semi-quantitative, based on the MIHPT results, soil borings will be advanced for the collection of soil samples for laboratory analysis of VOCs.

**Figure 1** depicts the Site location. **Figure 2** depicts the proposed PSG sample locations and preliminary MIH-PT study area.

### Field Methodology

#### 1) Passive Soil Gas Sampling

Beacon Environmental will provide BESURE Sample Collection Kits™ containing sufficient equipment to collect at least 165 field samples to AECOM personnel for collection of soil-gas samples.

PSG Sampler sampling methods will be conducted in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006). Prior to drilling sample locations for PSG samplers all utilities within the sampling area will be marked out. At each pre-selected sampling location, a temporary PSG Sampler will be installed. The samplers will be laid out on a grid and will be measured/surveyed in the field for correct locations. A 1 ½" diameter hole will be installed at each sampling location to an approximate 1 foot depth using a hammer drill and drill bit. The holes are then extended to a three-foot depth using a ½" diameter drill bit or comparable equipment. For those locations through asphalt/concrete surfacing, the upper 12 inches of the hole is sleeved with a pre-cleaned metal pipe provided in the PSG Sampler Kit. Next, the PSG Sampler (which contains two sets of hydrophobic adsorbent cartridges) is installed in the upper portion of the hole, which is sealed with an aluminum foil plug and covered with soil or for locations through asphalt/concrete surfacing with a thin concrete patch. The PSG samplers are exposed to subsurface gas for approximately two weeks to meet the objectives of the survey. Following the exposure period, the Samplers are to be collected and shipped to BEACON's laboratory for analysis. Upon removal, boring locations will be abandoned during the MIHPT program by placing bentonite chips in the boreholes. If the borings are located on asphalt or concrete the top of the borings will be sealed with asphalt cold patch or quickcrete where appropriate.

No ice or preservatives are required during shipment; however, the samplers are shipped with tug-tight custody seals and shipped under chain-of-custody procedures. Duplicate samples will be taken every 50 sample locations for the purposes of quality assurance / quality control (QA/QC). The reduced frequency relative to the standard project QA/QC sample rate of 1 per 20 is appropriate for this sampling activity, as the intent is for the PSG sampling as a screening tool. A trip blank, which will remain with the other PSG samples during preparation, shipment, and storage, will be included with each batch of up to 35 field samples. The field sampling team will maintain a sample log sheet summarizing the sample identification, date and time of sample collection, location of duplicate samples, identification of samplers, sampling methods, and sample analyses.

The PSG samples will be packaged and shipped to Beacon Environmental in Forest Hill, Maryland under standard chain-of-custody procedures. Beacon Environmental is a current New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certification. Samples will be analyzed for select VOCs using Modified Environmental Protection Agency (EPA) Method 8260C. Soil gas samples will be analyzed using gas chromatography/mass spectrometry (GC/MS) instrumentation in

accordance with the reporting requirements of ISO/IEC 17025 and EPA method 8260C. Samples will be analyzed for those compounds on the attached list. Targeted detection limits for each of the compounds will be 10 or 25 nanograms to assure that the low concentrations reported are accurate.

A summary of the number of samples and their associated QA/QC samples is provided in **Table 1**. The targeted list of VOCs for analysis is as follows:

- tetrachloroethene (PCE)
- trichloroethene (TCE)
- cis-1,2 dichloroethene (cis-1,2 DCE)
- trans-1,2 dichloroethene (trans-1,2 DCE)
- vinyl chloride (VC)
- 1,1,1- Trichloroethane (1,1,1-TCA) and
- 1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)

As the intent of the PSG sampling is as a screening tool, data will undergo a quality review, but will not be subject to full data validation and a data usability summary report (DUSR) will not be prepared.

## 2) Membrane Interface Probe – Hydraulic Profiling

Based on the results of the PSG investigation up to 65 sample locations will be selected by AECOM. The locations will be based generally upon the incidence of highest concentrations of the target VOCs in PSG samples. Other locations may be selected for data correlation purposes. Preliminary results will be provided to the NYSDEC and NYSDOH for their information. Cascade Drilling and Technical Services will mobilize one track-mounted Geoprobe 78-series with an operator, MIHPT system and a technician to the Site.

All locations will be cleared of utilities using a hand auger extending 5 feet below the surface as directed by AECOM. At each location advanced MIHPT direct sensing investigation borings will attempt to target depths of up to 20 feet below ground surface over a course of 10 days. Upon review of the MIHPT results, Cascade will also conduct 20 soil borings with macrocores to 20 feet at locations determined by AECOM. MIHPT borings and soil borings may extend below a depth of 20 feet below ground surface if warranted based on observed MIHPT readings. Samples from these borings will be collected at the interval with the highest MIHPT reading and and/or field PID reading and will be analyzed using EPA method 8260C. While preliminary MIHPT results will be provided to the NYSDEC and NYSDOH for their information, selection of soil sample locations and depths will be made using a dynamic review approach as field work is ongoing.

Sampling tools will be decontaminated with Alconox and water between investigation locations and, if utilized, tubing and acetate liners will be collected and properly disposed of. Boring locations will be abandoned during the MIHPT program by placing bentonite chips in the boreholes. If the borings are located on asphalt or concrete the top of the borings will be sealed with asphalt cold patch or quickcrete where appropriate.

DOT-rated steel drums will be used to collect wastes. All investigation-derived wastes (IDW) will be sampled, characterized, and classified for disposal at an appropriate off-site facility. The IDW drums will be stored on pallets and under a tarp at a designated location prior to transport and disposal.

A written summary of field activities with photo documentation, data collected, QA/QC results, and any deviations from the Standard Operating Procedure will be provided in a final report following the completion of the project and documented by AECOM.

### Health and Safety

The site specific Health and Safety Plan (HASP) will be updated as necessary to outline health and safety risks and procedures for all site workers and visitors for this scope of work. Included in the HASP is information regarding physical and chemical hazards at the site, emergency procedures and contact information, incident reporting procedures, and the route to the hospital.

### Quality Assurance

Field QA/QC procedures will include the following tasks:

- Calibration of sampling and drilling equipment
- Equipment checks
- Documentation of field procedures
- Use of chain-of-custody forms
- Collection of QC samples
- Decontamination of sampling and drilling tools between investigation locations

A summary of QA/QC sample quantities is provided in **Table 1**.

### Schedule

Various schedule milestones associated with the project schedule are listed below:

- Submit the ESVIWP to the NYSDEC.
- Agency approval within 30 days of ESVIWP submittal.
- Commence field preparation activities within 60 days of agency approval.
- Field activities include:
  - Complete utility clearance
  - Perform soil gas sampling as described in this plan
  - Perform Membrane Interface Probe – Hydraulic Profiling as described in this plan
  - Collect soil samples in conjunction with MIHPT profiling as described in this plan
  - Complete site restoration
- Submit the Soil Vapor Investigation Report within eight weeks of completing data validation.

Various outside factors that may impact the schedule include:

- Review and approval of submittals by NYSDEC/NYSDOH.
- Access by the property owners to install the sampling points and conduct sampling.

- Review, approval, and issuance of Building Permit Applications as necessary by the Village of Sleepy Hollow.

Reporting

The investigation sample data package and a written summary report will be submitted to NYSDEC/NYSDOH approximately eight weeks after the completion of the data review and validation. Since the PSG sampling and MIHPT borings are intended primarily as a screening tool, data validation and DUSR preparation will be performed for the soil sample data only. Based on results of the screening effort, additional focused soil sampling may be proposed in the future, with the data subject to full validation. Data will be uploaded in electronic data deliverable (EDD) format to the NYSED EQuIS database following review and submittal of the summary report.

PSG, MIHPT, and soil sampling results will be provided to respective property owners in a results summary letter as appropriate. The results letters for property owners will be submitted to the NYSDEC and NYSDOH for review prior to transmittal.

If you or your staff has any questions or comments, please do not hesitate to contact Mr. Bryan Turner of Gillette at 781-267-1072.

Yours sincerely,

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## **FIGURES**



**AECOM**

Plotted By: handal  
Layout-Sheet Name: 60-ELM-SOIL-VAP-REPORT  
Plot File Date Created: Mar 14/2018 11:13 AM

MAP REFERENCE:  
USGS 7.5 MINUTE QUADRANGLE: WHITE PLAINS

## PLAN

0' 1000' 2000' 4000'  
[Scale bar]

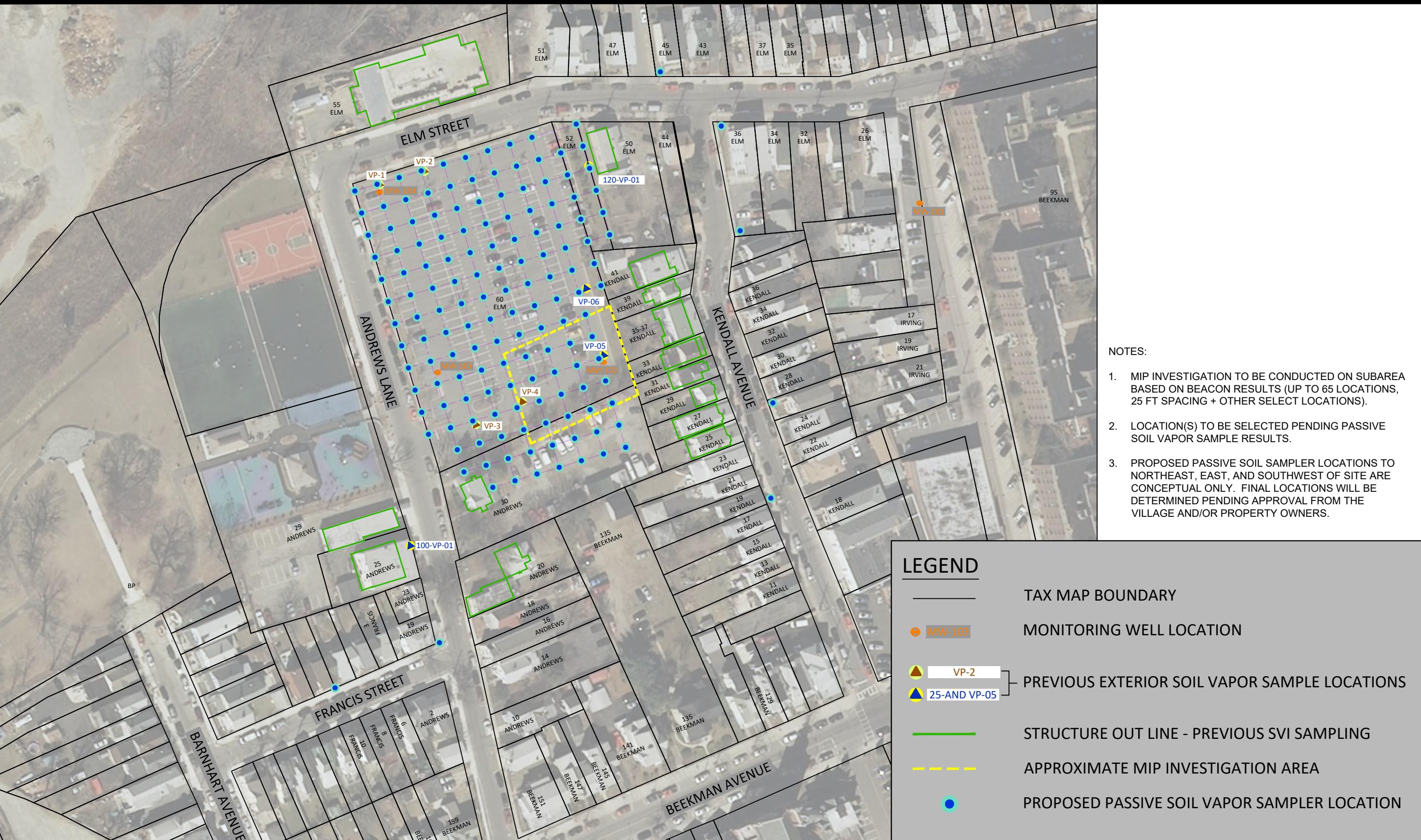
### EXPANDED SOIL VAPOR INVESTIGATION

#### WORK PLAN

#### PROJECT LOCATION PLAN

DURACELL INC., SITE  
SLEEPY HOLLOW, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
	---		3/14/2018	1



**AECOM**

0 100' 200'

**PLAN**

Duracell Inc. Site  
Sleepy Hollow, NY

Project No. 60494279 April 2020

**FIGURE 2**  
**SOIL VAPOR INVESTIGATION LOCATIONS**

## **TABLES**

**Table 1**  
**Reporting Limits and QA/QC Sample Quantity Summary**

MATRIX/ANALYSIS	Analytical Method	Laboratory	Reporting Limit - Typical (units as specified)	Field Sample Quantity	Matrix Spike (MS) or LCS	MS Duplicate or Matrix Duplicate	Field Duplicate	Equipment Blank	Trip Blank
<b>Soil Samples</b>									
Volatile organics	8260	Eurofins New England	1 µg/kg	20	1	1	1	1	1
<b>Air Samples</b>									
Volatile organics	8260C	Beacon	10-25 ng	165	NA	NA	3	NA	NA