AECOM
40 British American Blvd
Latham, NY 14228
aecom.com

February 8, 2024

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

RE: Addendum to the November 2014 Groundwater 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 Addendum to the Groundwater Investigation Work Plan (GWIWP) dated November 2014 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 Site location is depicted on Figure 1. The purpose of this addendum to the GWIWP (Addendum) is to further investigate the groundwater in the northeast portion of the Site with the installation and sampling of a new monitoring well in the northeast corner of the Site. The proposed location of the new monitoring well is shown on Figure 2.

The proposed scope of work (SOW) is discussed herein. Details related to Site location, geology, current use, Site history, prior investigations, and Site remediation are included in the November 2014 GWIWP. The Community Air Monitoring Plan (CAMP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP) are also included in the GWIWP as appendices A, B, and C, respectively.

Scope of Work

Soil Boring Advancement

A soil boring will be advanced in order to confirm subsurface conditions documented by prior Site investigations and to install a groundwater monitoring well. The work area around the soil boring location will be clearly delineated with safety barriers or cones, and pedestrian traffic will be diverted as necessary to assure the safety of the drilling crew and the public.

The soil boring will be advanced using the following procedures:

- A track-mounted rotosonic drill rig equipped with 4-inch diameter sampling core and 6-inch diameter barrel override will be used for advancing the boring.
- The boring will be advanced to either seven feet below first encountering groundwater within the soil above bedrock or to a maximum depth of three feet into confirmed bedrock to assess bedrock surface elevation at the Site. This will allow for the installation of the well screen two feet into bedrock and a one-foot sump to be installed below the well screen.
- Collected soil samples will be lithologically described by an AECOM field geologist, photographed, and documented in standardized field forms.
- Soil samples will also be inspected for visual and olfactory evidence of contamination and scanned for volatile and semi-volatile organic vapors using a calibrated photoionizing detector (PID).
- No soil samples will be collected for laboratory analysis during this effort.

- After the completion of the boring, soil cuttings and samples will be containerized in 55-gallon steel drums.

Groundwater Monitoring Well Installation

The groundwater monitoring well will be constructed within the soil boring, even if no saturated soil is observed during drilling. If no water accumulates in the well 10 days after installation and development, a request will be submitted to the NYSDEC that the well will be abandoned in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decommissioning Policy. The monitoring well will not be abandoned until authorization is received from the NYSDEC.

The construction of the monitoring well will follow the guidelines below:

- The well will be constructed using 2-inch-inside-diameter (ID), threaded, flush-joint, schedule 40 PVC casing and screen.
- The screen will be 10 feet long with 10-slot (0.01-inch) openings.
- Ideally, the well screen will be installed approximately three feet above the groundwater table and seven feet below it (Figure 3). However, depending on the depth at which groundwater is encountered in the boring, the corresponding length of the 10 foot well screen extending above and below the groundwater table may vary. In the event no saturated soil is observed, the bottom of the 10-foot well screen will extend at least two feet below the confirmed bedrock surface and approximately eight feet above confirmed bedrock (Figure 4).
- The annulus around the screen will be backfilled with appropriately sized clean silica sand (e.g., Morie No. 1) extending from at least one foot beneath the base of the well to a minimum height of 2 feet above the top of the screen. The sand pack will be surged prior to installing the bentonite pellet seal.
- A bentonite pellet seal with a minimum thickness of 3 feet will be placed above the sand pack. The bentonite seal (pellets) will be allowed to hydrate before placement of grout above the seal.
- The remainder of the annular space will be filled with a cement-bentonite grout to near the ground surface. The grout will be tremie-piped from the bottom-up.
- The well will have an expandable watertight cap (J-plug) and will be contained in a flush-mounted vault.
- A square concrete seal or pad will be constructed around the well that is sloped slightly to channel water away from the well.

Monitoring Well Development

The monitoring well will be allowed to set for a minimum of three days before development. If no water is observed after three days, the well will be allowed to set for a maximum of ten days. If water is still not observed in the well, a request will be submitted to the NYSDEC that the well be abandoned. The well will not be abandoned until authorization is received from the NYSDEC.

If water does accumulate in the well, well development activities will be sequenced as follows:

- Fluid levels and the total depth of the well will be measured to the nearest 0.01 foot using a clean electronic oil/water interface probe.
- The water in the well will be mechanically surged to loosen and remove suspended fines from the well screen and sand pack.
- Groundwater will be removed using a Grundfos® (or similar) submersible pump and dedicated polyethylene tubing.

- Development will continue until a minimum of three well volumes are evacuated and/or field parameters have stabilized to within 10% of the previous measurement, with an attempt to reduce turbidity levels to below a reading of 50 nephelometric turbidity units NTU. If three well volumes cannot be removed in a single development event because the well is poorly yielding, the well will be pumped dry, allowed to set overnight, and redeveloped again the next day.
- Water field parameters to be monitored during development will include pH, temperature, conductivity and turbidity.

Development water will be contained in properly labeled 55-gallon drums.

Site Survey

Once drilling and well installation activities are finished, the monitoring well will be located by a New York-licensed surveyor and incorporated into the Site maps. Survey data will be obtained with the following targeted precision:

- Horizontal location will be surveyed to the nearest 0.1-foot and will be referenced to the New York State Plan Coordinate System referenced to NAD 1983.
- Vertical elevation will be surveyed to the nearest 0.01-foot and will be referenced to NAVD 88.

Groundwater Sampling

Groundwater sampling will not occur for at least 10 days after developing the new well and will include the four existing monitoring wells previously installed (MW-101, MW-102, MW-103, and MW-104). Locations of the existing wells are shown on Figure 2. Groundwater sampling will be conducted in accordance with the most recent NYSDEC guidance on PFAS (April 2023) and will take place as follows:

- Prior to sample collection, all monitoring wells will be opened and allowed to equilibrate. After at least 30 minutes, each monitoring well will be gauged to measure and record the static groundwater level. Measurements will be recorded in the field notebook.
- Groundwater samples will be collected in accordance with the United States Environmental Protection Agency (USEPA) Region II Low Stress (Low Flow) Purging and Sampling Procedures (March 1998), using peristaltic pumps and dedicated polyethylene tubing.
- Field parameters including conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), turbidity, pH, and temperature will be measured and recorded until well stabilization.
- The well will be considered stabilized and ready for sample collection when recorded field parameters have stabilized for three consecutive readings as follows: ±0.1% for pH, ±3% for specific conductivity, and ±10% for DO and turbidity.

  An attempt will be made to reduce the turbidity levels to below 50 NTUs before a ground water sample collected for laboratory analyses.
- Recovered groundwater samples will be collected in laboratory-prepared sample bottles, preserved with ice, and submitted under chain-of-custody protocol to a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis. The preferred material for containers is High Density Polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

- One field duplicate and one matrix spike/matrix spike duplicate (MS/MSD) pair will be collected for use in data validation. A trip blank, provided by the lab, will accompany each cooler containing samples.

- Copies of chain-of-custody documents will be retained and daily records, including blind field duplicates and other field quality assurance/quality control (QA/QC) samples, will be recorded in the field logbook.
- All non-disposable equipment will be decontaminated prior to first use and in between uses by washing with a non-phosphate detergent (e.g., Liquinox), rinsing it with analyte-free water, and letting it air dry.
- If appropriate, collect one equipment blank per day per site and minimum of 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water through the sampling device and into laboratory provided sample containers.
- Additional equipment blank samples may be collected to assess other equipment that is utilized at the monitoring well.
- An ambient blank sample should be collected each day to allow for evaluation of potential PFAS sources from ambient air during groundwater sampling by passing a small volume of PFAS-free water through the air and into a sample container held beneath.

- Sampling personnel should don new nitrile gloves prior to sample collection due to the potential of coming into contact with PFAS containing items (not related to the sampling equipment) during the purging activities.

PFAS Sampling Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, Silicone, Acetate, and Polypropylene. Additional materials may be accepted if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon) materials including plumbers' tape and sample bottle cap liners with PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- Stainless steel inertia pump with HDPE tubing.
- Peristaltic pump equipped with HDPE tubing and silicone tubing.
- Stainless steel bailer with stainless steel ball.
- Bladder pump (identified as PFAS-free) with HDPE tubing.

Management of Investigation-Derived Waste

Investigation derived waste (IDW) generated will include soil cuttings, equipment decontamination fluids, well development and purge water, disposable sampling equipment, and personal protective equipment (PPE). The waste will be temporarily containerized in USDOT-approved, 55-gallon drums pending waste characterization and appropriate off-Site disposal in a permitted facility.

All IDW containers will be properly labeled to identify their contents, transported by a hauler licensed in accordance with 6 NYCRR Part 364 and disposed in accordance with applicable Federal, State, and Local regulations.

Groundwater Analysis

The samples will be packaged and shipped under chain of custody to Eurofins New England located in North Kingston, RI. Eurofins is a current New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Samples will be analyzed for select VOCs using Modified Environmental Protection Agency (EPA) Method 8260C.

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)

The list of VOCs and respective laboratory detection limits and reporting limits is shown in Table 1A.

Samples will also be analyzed for per- and polyfluoroalkyl substances using EPA Method 1633 in accordance with NYSDEC guidance on PFAS (April 2023). The list of PFAS analytes is included in Table 1B along with laboratory method detection limits and reporting limits. A summary of the number of samples and their associated QA/QC samples is provided in Table 2. Data review will be performed by a qualifier validator, and a data usability summary report (DUSR) will be prepared.

Health and Safety

The site-specific 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.

Schedule

It is anticipated that installation of the monitoring well will be coordinated with construction activities related to the proposed soil vapor extraction system.

Reporting

A written summary report will be submitted to NYSDEC/NYSDOH approximately eight weeks after the completion of the data review. The report will include a DUSR. Validated data will be uploaded in electronic data deliverable (EDD) format to the NYSDEC EQuIS database following review and submittal of the summary report. Based on results of the screening effort, additional sampling may be proposed in the future.

If you or your staff has any questions or comments, please do not hesitate to contact Mr. Ian Schnabel of Gillette at 513-391-6347.

Yours sincerely,

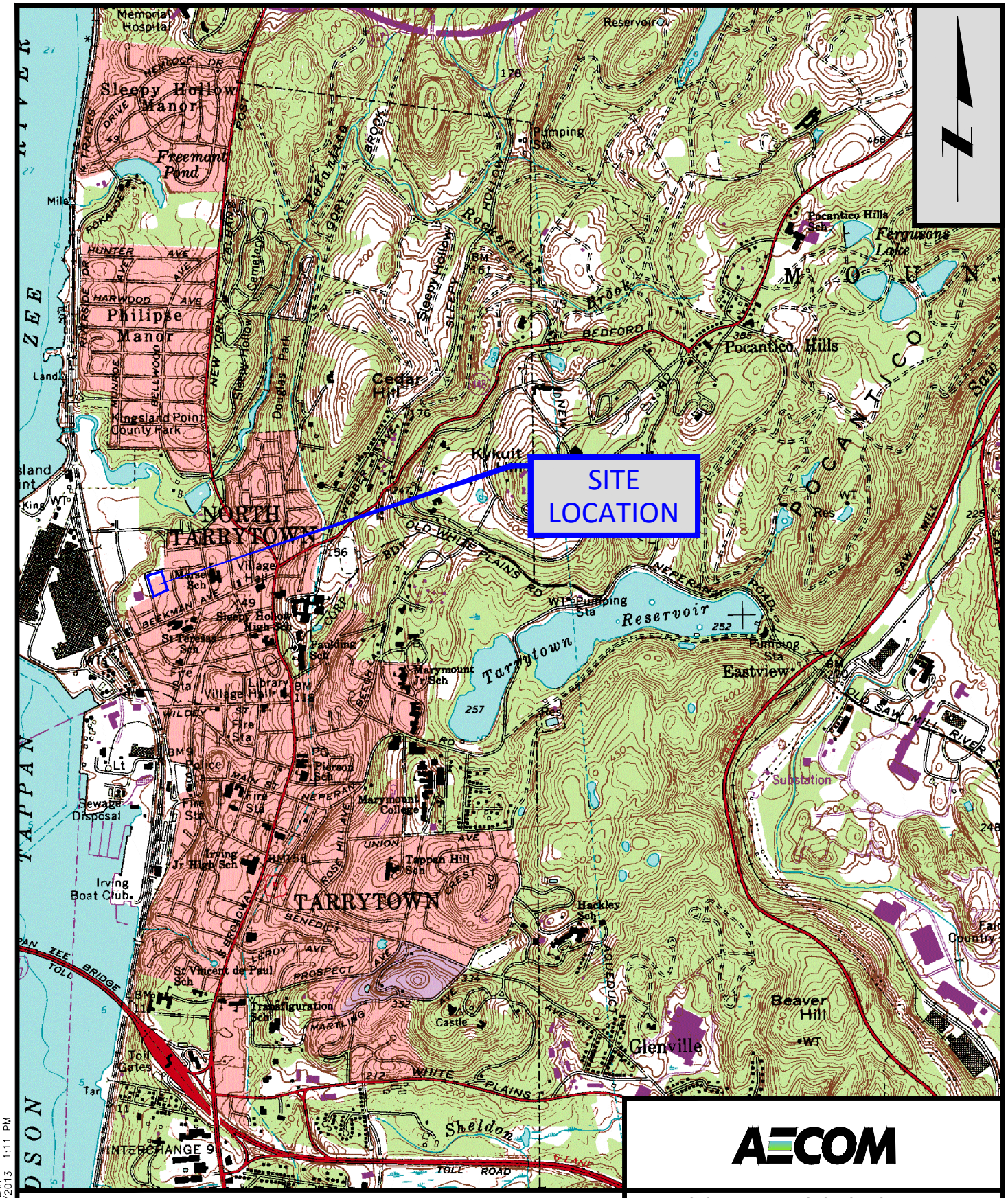
James Honda, PE
Project Engineer
James.honda@aecom.com

Michael Doherty, PE
Program Manager
Michael.Doherty@aecom.com

Cc: Amen Omorogbe - NYSDEC
Alali Tamuno, Esq. - NYSDEC
Ian Schnabel - Gillette

Ec: Fay Navratil - NYSDOH
Christine Vooris - NYSDOH
Melissa Doroski - NYSDOH

Figures



MAP REFERENCE:
USGS 7.5 MINUTE QUADRANGLE: WHITE PLAINS

PLAN

0' 1000' 2000' 4000'

AECOM

GROUNDWATER INVESTIGATION WORK PLAN

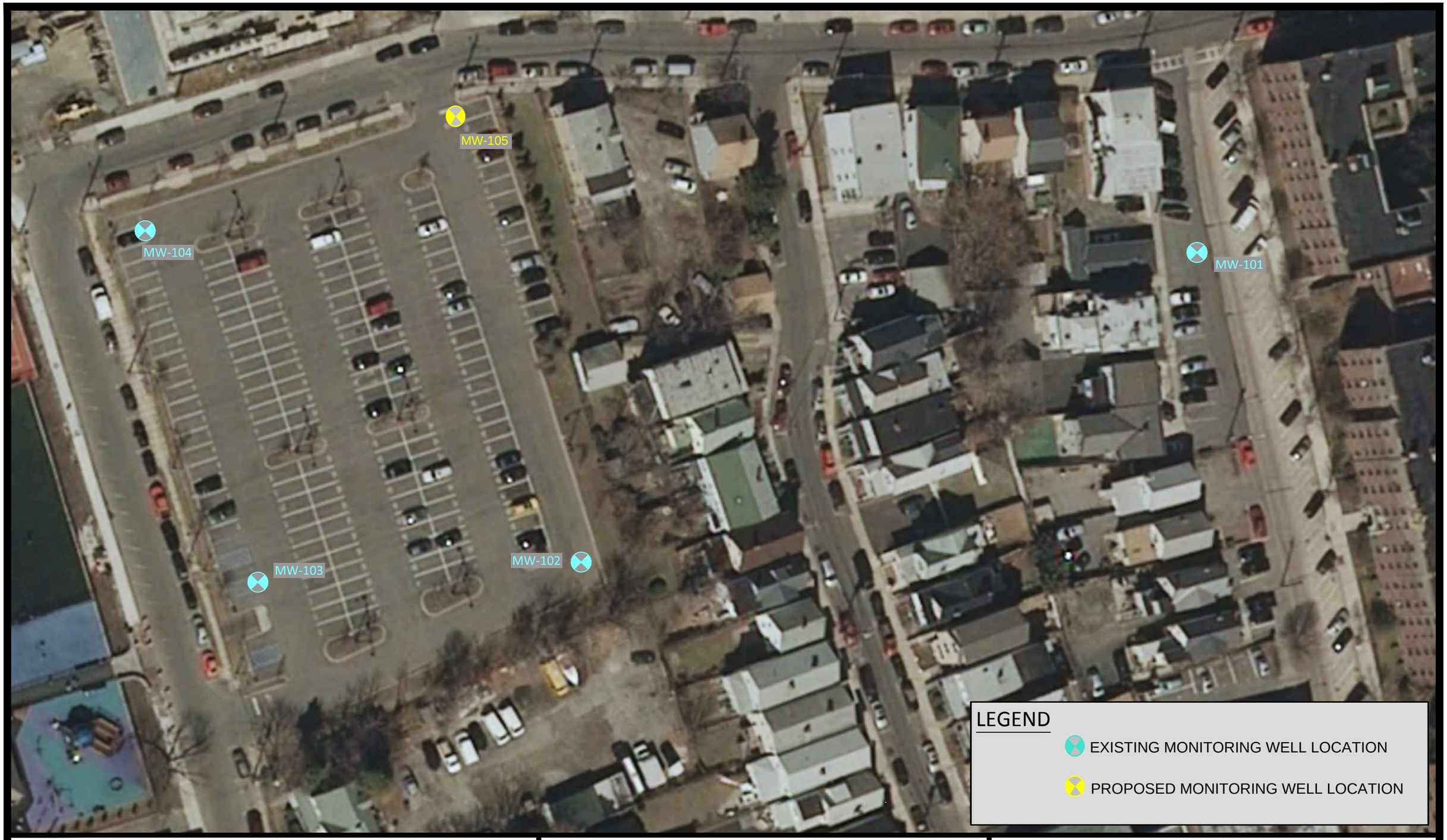
SITE LOCATION PLAN

DURACELL INC., SITE
SLEEPY HOLLOW, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
	---	60310469	11/2013	1-1

Plotted By: meisterk
Layout-Sheet Name: MW_LOC_PLAN
Plot File Date Created: Nov/13/2013 1:11 PM

Filename: P:\60160135_DURACELL-SLEEPYHOLLOW\CADD\0300\GEN\DURACELL-SLEEPY_HOLLOW-GW-SITE_PLAN.DWG



AECOM

PLAN

0 50' 100'

Duracell Inc. Site
Groundwater Investigation Report Addendum
Sleepy Hollow, NY

Project No. 60217726 August, 2023

Figure 2
Proposed and Existing Monitoring Wells

AECOM	*Client:* The Gillette Company	***WELL ID:***
	Project Number: 60314447	
	Site Location: Duracell Inc. Site	*Date Installed:*
	Well Location: *Coords:*	*Inspector:*
	Method:	*Contractor:*

PROPOSED MONITORING WELL CONSTRUCTION (IF GROUNDWATER IS FOUND)

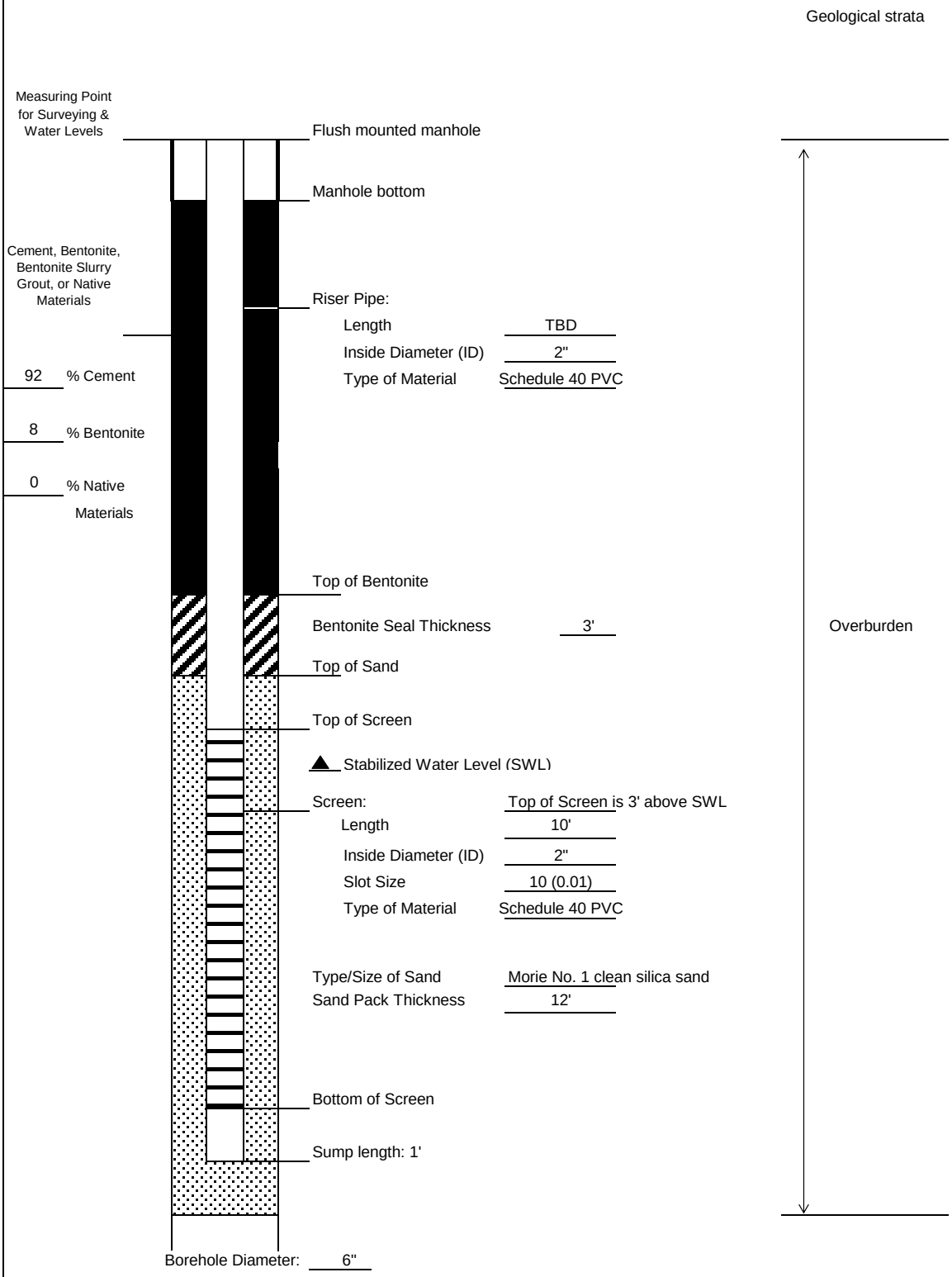


FIGURE 3

AECOM	*Client:* The Gillette Company	***WELL ID:***
	Project Number: 60314447	
	Site Location: Duracell Inc. Site, Sleepy Hollow, NY	*Date Installed:*
	Well Location: *Coords:*	*Inspector:*
	Method:	*Contractor:*

PROPOSED MONITORING WELL CONSTRUCTION (IF NO SATURATED SOILS ARE OBSERVED)

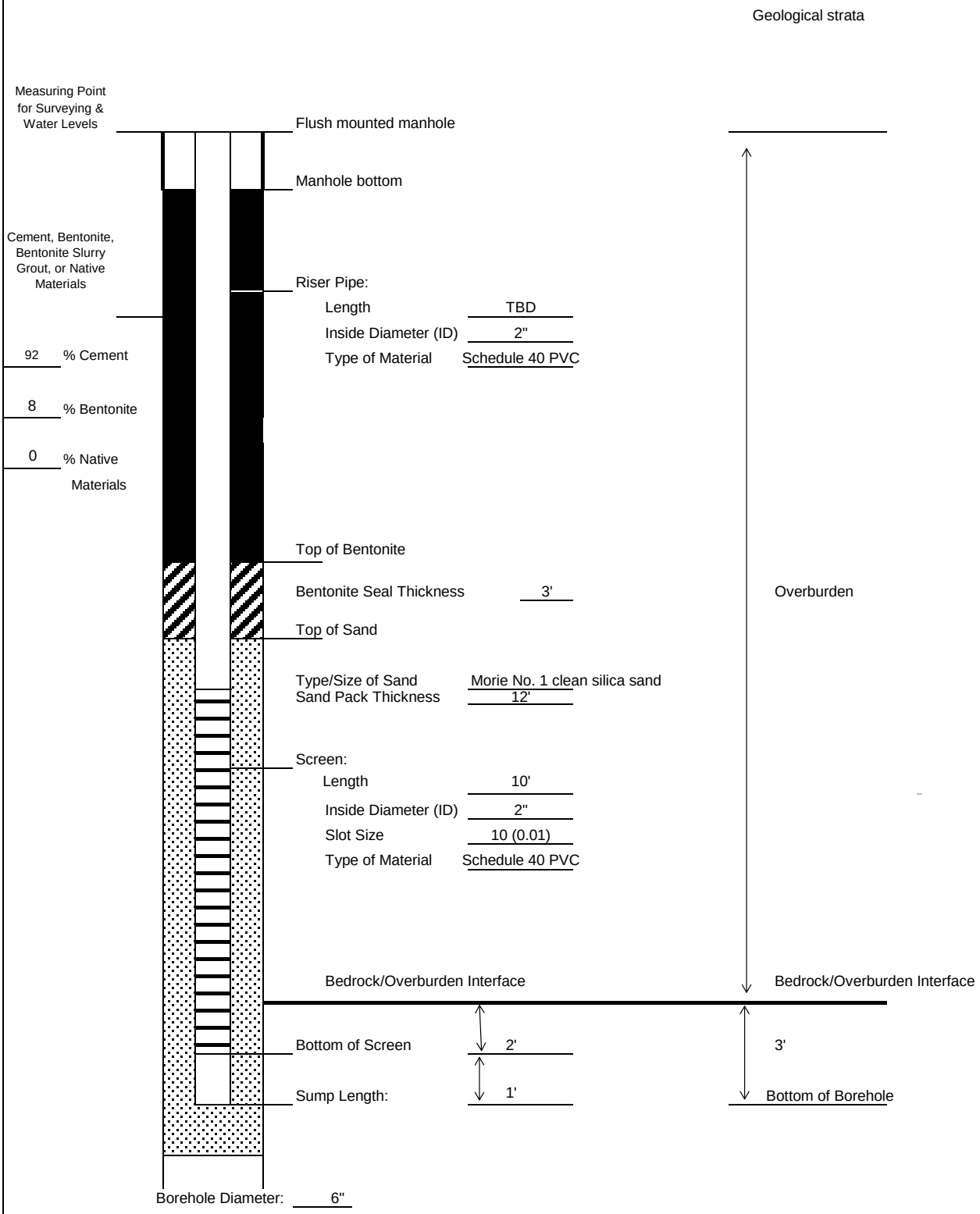


FIGURE 4

Tables

Table 1A
Laboratory Method Detection and Reporting Limits for Target Analytes (VOCs)
Duracell Inc. Site
NYSDEC Site No. 360011

Analyte	Method Detection Limit (MDL)	Method Reporting Limit (MRL)	Units
1,1,1- Trichloroethene	0.330	1.00	µg/L
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.202	1.00	µg/L
Cis-1,2-Dichloroehtene	0.297	1.00	µg/L
Trans-1,2-Dichloroethene	0.188	1.00	µg/L
Tetrachloroethene	0.364	1.00	µg/L
Trichloroethene	0.364	1.00	µg/L
Vinyl Chloride	0.256	1.00	µg/L

Notes:-
MDLs and MRLs may be higher than the values presented should sample dilution be Required due to high analyte concentration.
µg/L = Microgram per Liter
ppt = Part Per Trillion

Table 1B
Laboratory Method Detection and Reporting Limits for Target Analytes (PFAS)
Duracell Inc. Site
NYSDEC Site No. 360011

Group	Analyte	Abbreviation	Method Reporting Limit (MRL)	Method Detection Limit (MDL)	Units
Perfluoroalkyl sulfonic acids	Perfluorobutanesulfonic acid	PFBS	2.00	0.300	ng/L
	Perfluoropentanesulfonic acid	PFPeS	2.00	0.500	ng/L
	Perfluorohexanesulfonic acid	PFHxS	2.00	0.570	ng/L
	Perfluoroheptanesulfonic acid	PFHpS	2.00	0.400	ng/L
	Perfluorooctanesulfonic acid	PFOS	2.00	0.500	ng/L
	Perfluorononanesulfonic acid	PFNS	2.00	0.400	ng/L
	Perfluorodecanesulfonic acid	PFDS	2.00	0.500	ng/L
	Perfluorododecanesulfonic acid	PFDoS	2.00	0.900	ng/L
Perfluoroalkyl carboxylic acids	Perfluorobutanoic acid	PFBA	8.00	2.00	ng/L
	Perfluoropentanoic acid	PFPeA	4.00	1.00	ng/L
	Perfluorohexanoic acid	PFHxA	2.00	0.500	ng/L
	Perfluoroheptanoic acid	PFHpA	2.00	0.520	ng/L
	Perfluorooctanoic acid	PFOA	2.00	0.640	ng/L
	Perfluorononanoic acid	PFNA	2.00	0.500	ng/L
	Perfluorodecanoic acid	PFDA	2.00	0.500	ng/L
	Perfluoroundecanoic acid	PFUnA	2.00	0.500	ng/L
	Perfluorododecanoic acid	PFDoA	2.00	0.500	ng/L
	Perfluorotridecanoic acid	PFTrDA	2.00	0.500	ng/L
	Perfluorotetradecanoic acid	PFTeDA	2.00	0.500	ng/L
Per- and Polyfluoroether carboxylic acids	Hexafluoropropylene oxide dimer acid	HFPO-DA	8.00	2.00	ng/L
	4,8-Dioxa-3H-perfluorononanoic acid	ADONA	8.00	1.50	ng/L
	Perfluoro-3-methoxypropanoic acid	PFMPA	4.00	0.500	ng/L
	Perfluoro-4-methoxybutanoic acid	PFMBA	4.00	1.00	ng/L
	Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	4.00	1.00	ng/L
Fluorotelomer sulfonic acids	4:2 Fluorotelomer sulfonic acid	4:2-FTS	8.00	1.70	ng/L
	6:2 Fluorotelomer sulfonic acid	6:2-FTS	8.00	2.50	ng/L
	8:2 Fluorotelomer sulfonic acid	8:2-FTS	8.00	2.60	ng/L
Fluorotelomer carboxylic acids	3:3 Fluorotelomer carboxylic acid	3:3 FTCA	10.0	1.50	ng/L
	5:3 Fluorotelomer carboxylic acid	5:3 FTCA	50.0	10.0	ng/L
	7:3 Fluorotelomer carboxylic acid	7:3 FTCA	50.0	10.0	ng/L
Perfluorooctane sulfonamides	Perfluorooctane sulfonamide	PFOSA	2.00	0.500	ng/L
	N-methylperfluorooctane sulfonamide	NMeFOSA	2.00	0.500	ng/L
	N-ethylperfluorooctane sulfonamide	NEtFOSA	2.00	0.500	ng/L
Perfluorooctane sulfonamidoacetic acids	N-methylperfluorooctane sulfonamidoacetic acid	N-MeFOSAA	4.00	1.20	ng/L
	N-ethylperfluorooctane sulfonamidoacetic acid	N-EtFOSAA	2.00	0.700	ng/L
Perfluorooctane sulfonamide ethanols	N-methylperfluorooctane sulfonamidoethanol	MeFOSE	20.0	5.00	ng/L
	N-ethylperfluorooctane sulfonamidoethanol	EtFOSE	20.0	5.00	ng/L
Ether sulfonic acids	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	9Cl-PF3ONS	8.00	1.00	ng/L
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	11Cl-PF3OUdS	8.00	2.00	ng/L
	Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	4.00	0.500	ng/L

Notes:-
MDLs and MRLs may be higher than the values presented should sample dilution be Required due to high analyte concentration.
ng/L = nanogram per Liter

Table 2 - Groundwater Samples
Duracell Inc. Site
NYSDEC site No. 360011

Matrix/ Analysis	Sample Prep Method	Analytical Method	Sample Bottles				Minimum Vol Rqd	Preservation	Holding Time		Field Samples	Matrix Spike (MS) or	Matrix Duplicate or MS	Field Duplicate	Equipment Blank*	Ambient Blank
			Mat'l	Size	Qty	Source			Extraction	Analysis						
GW Samples																
Volatie Organic Compounds	NA	Modified EPA 8260C	GL	3x 40 mL	TBD	LAB	120 mL	HCL	NA	30 Days	5	1	1	1	0	0
PFAS	NA	EPA Method 1633	HDPE	1x125 & 2x500 mL	TBD	LAB	NA	NA	28	28	5	1	1	1	1	1

Notes:-
GL = Glass
HDPE = High Density Polyethylene
EPA = United States Environmental Protection Agency
mL = Mililiter
NA = Not Applicable
Qty = Quantity
Mat'l = Materials
Rqd = Required
Vol = Volume
HCL = Hydrochloric Acid
* Minimum 1 equipment blank anticipated to be collected per sampling event. Depending on equipment and methods, additional equipment blanks may be collected as appropriate.