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May 24, 2018

Mr. George W. Heitzman, PE via email: george.heitzman@dec.ny.gov
Director, Remedial Bureau C
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau D
625 Broadway - 12th Floor
Albany, New York 12233-7013.

Subject: Request for Sampling of Emerging Contaminants
Ferroxcube (AKA American Candle Site), Ulster County, NY
NYSDEC Site No. 356011

Dear Mr. Heitzman,

AECOM Technical Services , Inc. (AECOM), on behalf of Philips North America, LLC, has prepared this response to the New York State Department of Environmental Conservation (NYSDEC) letter dated April 27, 2018 requesting that an evaluation of the Ferroxcube site (the site) be performed to identify the potential presence of poly- and per-fluoroalkyl substances (PFAS) and 1,4-dioxane. This letter contains a proposed Work Plan for characterization of potential PFAS and 1,4-dioxane impacts to groundwater at the site.

CURRENT SITE CONDITION

The area surrounding the site is still largely residential, although there has been a commercial presence along Kings Highway for decades due to its proximity to the New York State Thruway Exit 20. Commercial and industrial development is currently being spurred by the installation of a municipal water line along Kings Highway in 2011.

The site was historically operated by Ferroxcube, and later Philips Components. Both businesses manufactured electronic components at this Site from 1961 until 2000. VOCs, specifically halogenated solvents, were used in production operations until 1991 resulting in releases to soil and groundwater. Philips discontinued operations at this facility in January 2001, and the property was sold to a perfume and candle-manufacturing firm. The site was subsequently used for the manufacture of candle products for several years. The site is currently owned by Mr. Arthur Green and is largely vacant although portions are used for the storage of various items including movie props and vehicles. A notice from the Town of Saugerties Planning Board indicates that a hearing was held on Tuesday, May 15, 2018 on a special use permit for the site which would establish a dry metal recycling facility solely within the interior of an existing building. The building proposed for this recycling facility is not located within a plume of volatile organic compounds (VOCs) which exists in groundwater on-site. Downgradient properties with potable water supplies that had once been impacted by VOCs have been connected to the municipal water supply.

The site has undergone a series of Remedial Activities in compliance with the terms of a Record of Decision (ROD) initially executed in March 1993 with the NYSDEC, and subsequently revised. The ROD identified a former solvent storage shed once attached to Building 2 on the northern portion of the Site as the probable source area for soil and groundwater impacted by tetrachloroethene (PCE) and its breakdown products: 1,2-dichloroethene (1,2-DCE) and 1,1-dichloroethene (1,1-DCE). The ROD incorporated remedial activities for the former Solvent Storage Shed Area including air sparging, soil vapor extraction, groundwater pumping and treatment, and permanganate injections.

Air sparging and soil vapor extraction were performed and subsequently discontinued in the mid-1990s, permanganate was injected from 2006 through 2007, and operation of the groundwater pump and treatment system continues at bedrock well RW-4. A network of groundwater monitoring wells is used to monitor the effectiveness of the remedy (Figure 1). Groundwater contamination continues to decrease as the remedial program progresses. Although concentrations of VOCs in overburden wells in this portion of the site are generally compliant with NYSDEC Groundwater Standards, Criteria and Guidance Values (SCGs), concentrations of VOCs in bedrock groundwater continue to exceed the SCGs.

An above ground solvent storage tank (AST) was once present in the southern portion of the site adjacent to Building 1. This former AST was identified as a probable source area for shallow overburden groundwater impacted by 1,1,1-trichloroethane (TCA) and its breakdown products (1,1-DCE, 1,1-dichloroethane (DCA), chloroethane, and ethane). A deeper overburden well located adjacent to in the probable TCA source area did not contain concentrations of VOCs in excess of SCGs. The remedy for this area of the Site has included a series of bionutrient substrate injections intended to promote the reductive dechlorination of VOCs by naturally occurring soil bacteria. The most recent injection of bionutrient substrate occurred in September 2013 in accordance with the provisions of an Underground Injection Control Program application authorized by the United States Environmental Protection Agency (US EPA).

EMERGING CONTAMINANT INVESTIGATION WORK PLAN

The purpose of this work plan is to respond to the NYSDEC request for sampling of emerging contaminants. The existing monitoring well network offers appropriate locations and construction to monitor for emerging contaminants at each of the potential source areas discussed above.

1.0 Scope of the Emerging Contaminant Investigation

The network of groundwater monitoring wells used to evaluate VOC impacts in the Solvent Storage Area of the Site includes bedrock wells BW-5 and K-Well located adjacent to and downgradient of the former solvent shed's location, respectively, that continue to detect the highest concentrations of VOCs in groundwater in this area of the Site. AECOM proposes to sample these wells for PFAS and 1,4-dioxane during the next quarterly groundwater sampling event, scheduled to occur in June 2018.

The network of groundwater monitoring wells used to evaluate VOC impacts in the former TCA-AST area includes overburden wells ITMW-1 and ITMW-3 located adjacent to and downgradient of the former AST location, respectively, that continue to contain the highest concentrations of VOCs in groundwater in this area of the site. AECOM proposes to sample these wells for PFAS and 1,4-dioxane in June 2018 as well. The procedures and analytical methods described below will be employed.

2.0 Sample Collection Methods

Acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE) and polypropylene. Additional materials may be acceptable if proven not to contain PFASs. Grundfos pumps and bladder pumps are known to contain PFAS materials (e.g., Teflon™ washers for Grundfos pumps and LDPE bladders for bladder pumps). Select equipment suppliers can provide PFAS-free bladder pumps. All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Standard two step decontamination using detergent and clean water rinse should be

considered for equipment that does come in contact with PFAS materials. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials must be avoided. Many food and drink packaging materials and "plumbers thread seal tape" contain PFASs. All clothing worn by sampling personnel must have been laundered multiple times. The sampling team will not use a "write in the rain" field book as they are known to contain PFAS.

The sampler must wear nitrile gloves while filling and sealing the sample bottles. Pre-cleaned PFAS sample bottles with closures, coolers, sample labels and a chain of custody form will be provided by the laboratory.

1. For PFA's, fill two Plastic 250ml – unpreserved.using low flow technique with a peristaltic pump. These are special bottles that do not have Teflon caps.
2. Label the sample bottles.
3. Fill out the chain of custody.
4. Place in a cooler maintained at 4 ± 2º Celsius.

1,4-dioxane samples will be collected in 2 x Amber Glass 1 liter- unpreserved bottles and processed in the same manner as the PFAS samples.

One equipment blank and one ambient field blank will be collected daily. The lab will provide PFAS-free water for the field and equipment blanks. One blind duplicate and one matrix spike / matrix spike duplicate (MS/MSD) set will also be collected for every sample batch, not to exceed 20 samples.

3.0 Sample Analysis

Samples will be submitted to TestAmerica laboratory in Amherst, New York for analysis of 21 Target PFASs via the Modified US EPA Method 537. TestAmerica can achieve a 2.0 nanogram per liter (ng/L)/part per trillion (ppt) reporting limit for PFOA and PFOS. 1,4-dioxane will be analyzed via US EPA Method 8270D SIM utilizing Isotope Dilution. TestAmerica can achieve a 0.2 microgram per liter (µg/L)/part per billion (ppb) reporting limit for 1,4-dioxane.

4.0 Sample Reporting

ASP Category B deliverables will be requested from TestAmerica under standard turnaround time. Following receipt of the laboratory report and electronic data deliverables (EDDs), AECOM will submit the data to a data validation firm, such as Environmental Data Services, Inc. or Validata Chemical Services, Inc. The validator will submit a Data Usability Summary Report (DUSR) to AECOM.

AECOM will submit a letter report to the NYSDEC summarizing the results of the sampling event, along with the DUSR and EDD(s) in NYSDEC EQuIS™ format.

CLOSING

AECOM looks forward to your response to this proposed Work Plan for evaluation of the potential presence of PFAS and 1,4-dioxane at the Ferroxcube site. Please contact Richard Hixon at Rich.Hixon@aecom.com or (518) 951-2288 with any questions or comments regarding this Work Plan.

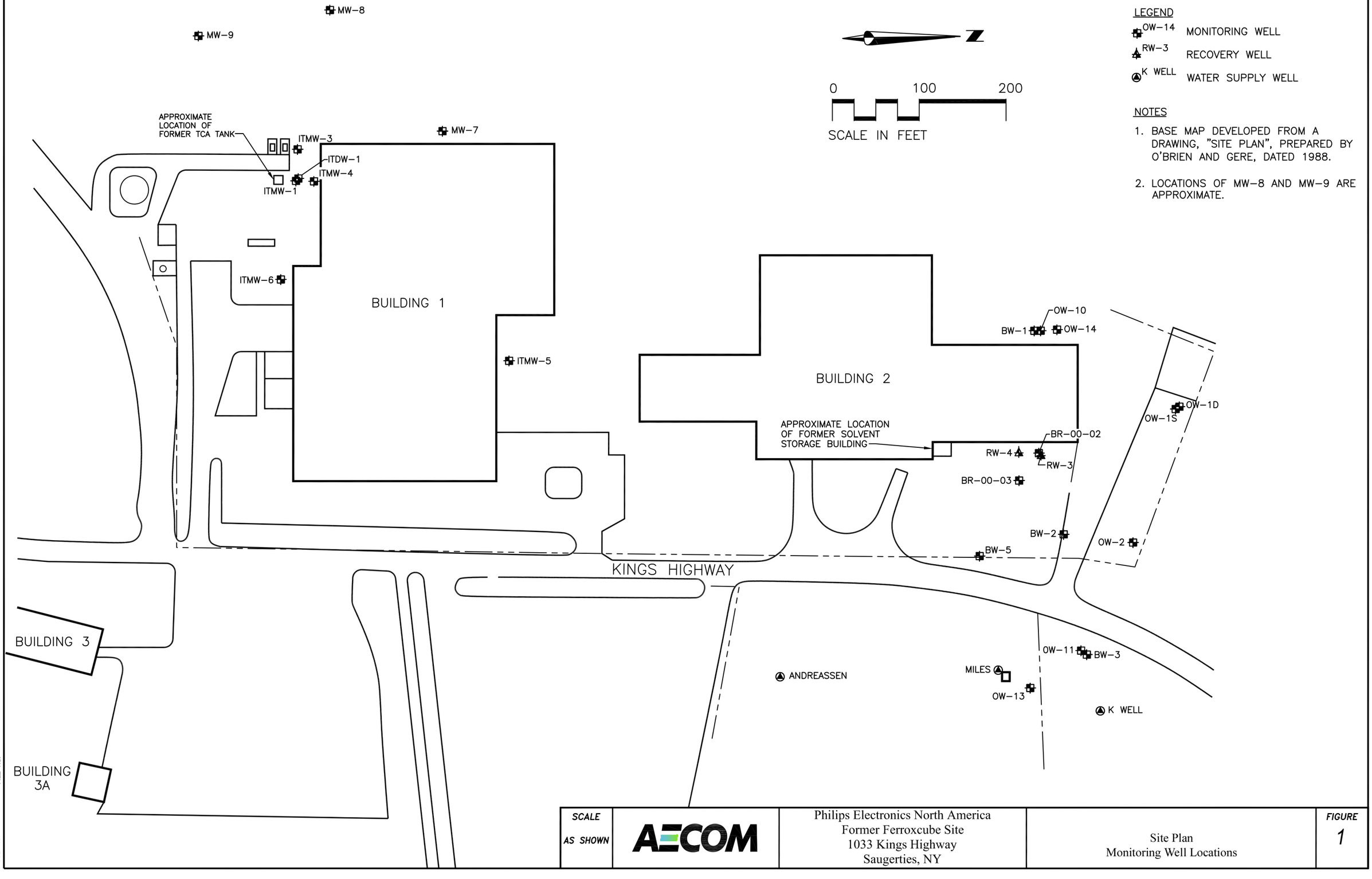
Sincerely,

AECOM Technical Services Northeast, Inc.

Lindsay Mitchell, P.E.
Project Engineer

Richard Hixon
Project Manager

Attachments: Figure 1 – Site Plan and Groundwater Monitoring Well Locations



SCALE AS SHOWN	AECOM	Philips Electronics North America Former Ferroxcube Site 1033 Kings Highway Saugerties, NY	Site Plan Monitoring Well Locations	FIGURE 1

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